# Pesticide Information of SAARC Countries



SAARC

SAARC Agriculture Centre

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# Pesticide Information of SAARC Countries

**Editors**
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SAARC
**SAARC Agriculture Centre**

# Foreword

This compilation is a result of an initiative of SAARC Agriculture Center (SAC) to organize a consultative workshop with the objectives to share information on pesticides and related issues in conventional form and also to put a step forward by extending this exercise into a common web based platform so that our stakeholders can utilize the knowledge, and information available in SAARC Region for years to come.

Hence, the compilation contains country papers presented at Regional consultative workshop on SAARC Pesticide Information Sharing Network (SPINet) held in Peradeniya, Sri Lanka, during 30 June 2011 - 01 July 2011 with the participation of six SAARC member countries namely, Bangladesh, Bhutan, India, Nepal, Pakistan and Sri Lanka.

The country reports are prepared on the basis of a concept note provided by SAC by eminent scientists of the SAARC Member countries appointed by the Governing Board members of SAC for respective countries. The reports contain pesticides in use, mode of action, their chemical nature, pattern and trends of pesticide use, application details and restrictions, pesticide evaluation for their efficacy, records of health and environmental incidents, pest outbreaks, pest-resistance etc.

The concept note provided the guideline to the areas to be followed in the respective country reports. It is evident that the authors have made a tremendous effort to furnish the details of the required information in spite of the inherent diversity of the information related to pesticides in the regional countries. We are happy to note that as a result of their valuable input the compilation has become a rich source of knowledge on pesticide related information in the region.

During the consultation the country papers were discussed thoroughly and a set of recommendations were adopted under three thematic areas for future activities in promoting sharing of knowledge and work in relation to scientific advances in pesticides. Using the information gathered SAC has already taken initiative to develop a web based SAARC pesticide information management and sharing system abbreviated as SPINet. Once developed the system, it will enable facilitating to share vital information on pesticides and aspects related to their use and misuse by the stakeholders of agriculture and agencies of agriculture research and development in SAARC countries. Information can be accessed over the Internet for adding as well as receiving information. The pesticide information will be stored in a centralized database which can be maintained by a central entity at the SAC.

The efforts of those who contributed to achieve the strenuous tasks, from the development of the concept note to hold the consultative workshop and to compile the information in a form of a publication, are greatly appreciated. I wish to extend my sincere gratitude to editors who has done a commendable job to convert the original information into a readily usable form.

I sincerely believe that this compilation will be helpful for joint efforts to promote rational use of pesticide in the region and will serve as base material for the proposed web based SAARC Pesticide Information Network. In addition, Member countries would definitely be benefited through understanding, sharing knowledge and information on the policy and institutional options as well as productive and scientific practices being followed in various countries.

Dr. Abul Kalam Azad
Director

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# Part - I

## Pesticide Information of Bangladesh

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## 1. Introduction

Bangladesh is primarily an agrarian economy. Agriculture is the single largest producing sector of economy since it comprises about 30% of the country's GDP and employing around 60% of the total labour force. The performance of this sector has an overwhelming impact on major macroeconomic objectives like employment generation, poverty alleviation, human resources development and food security.

Meeting the nation's food requirements remains the key-objective of the government and in recent years there has been substantial increase in grain production. However, due to calamities like flood, loss of food and cash crops is a recurring phenomenon which disrupts the continuing process of the entire economy.

Agricultural holdings in Bangladesh are generally small. Through Cooperatives the use of modern machinery is gradually gaining popularity. Rice, Jute, Sugarcane, Potato, Pulses, Wheat, Tea and Tobacco are the principal crops. The crop sub-sector dominates the agriculture sector contributing about 72% of total production. Fisheries, livestock and forestry sub-sectors are 10.33%, 10.11% and 7.33 respectively.

Bangladesh is the largest producer of Jute. Rice being the staple food, its production is of major importance. Rice production stood at 31.32 million tons in 2009-10 fiscal year. Crop diversification program, credit, extension and research, and input distribution policies pursued by the government are yielding positive results. The country is now on the threshold of attaining self-sufficiency in food grain production.

According to the Pesticide Ordinance of Bangladesh pesticide means any substance or mixture of substances used to prevent, destroy or repel or mitigate any insect, rodent, nematode, fungus, weed, or other form of aquatic or terrestrial plant or animal life or virus, bacteria or other micro-organisms (except bacteria, viruses or other micro-organisms in or on man and other animals (Anon. 1974). Bosso (1987) describes pesticides as BAD THINGS THAT CAN DO GOOD or GOOD THINGS THAT CAN CAUSE HARM depending on one’s perspective. Over the past several decades, agricultural producers have been first hand witnessed of the GOOD THINGS that pesticides can accomplish. The BAD THINGS (resistance, resurgence, residue, poisoning, pollution etc.) that accompany pesticide use also have been witnessed.

In modern agriculture, pesticide is one of the key components for maintaining steady crop production. It is assumed that if pesticides are not used for the management of insect pests and diseases, Bangladesh would loose around 4 million tons of food grains and vegetables every year (Hasanuzzoha, 2004). The present demand of food grain in Bangladesh is about 40 million tons and the present population growth is 1.9%. If it is continued the country’s population would be 153.44 millions in 2010, 172.90 millions in 2020 and 191.09 millions in 2030. The projected food grain requirement in 2020 would be 50 million tons (Karim, 1998). It is estimated that food grain requirement in developing countries will rise by 70% in 2020 (Anon. 1992a, and Yudelman, 1998). To meet this challenge, government should adopt appropriate policies and allocate adequate resources for agricultural development. In spite of the introduction of all advanced technologies (e.g.; Hybrid, genetically engineered crops, integrated nutrient and water management etc.) for increased crop production, pest management issues can not be ignored as insect pests alone could cause 20-45% loss of total production (Kabir et al., 1996). Besides several ongoing IPM programs, home and abroad, the pest control still largely dependent on the use of synthetic pesticides (Flint and Gouveia, 2001). Only 10-15% farmers in Bangladesh use pesticides (Alam, 1991) the rest does not apply anything. Compared to the other countries, the use of pesticides per unit area in Bangladesh is very negligible (300gm AI/ha).

## 2. Brief history of chemical pesticide use and trends in pesticide use

### 2.1 Commencement of pesticide use in Bangladesh

Pesticide use in Bangladesh started in mid fifties and gained momentum in late 1960's with the introduction of HYV rice. In 1954, 9 tons of pesticides were imported (Anon. 1973) which included Endrin, DDT, BHC etc. (Alam, 1991). From the beginning, the government of this country imported pesticides and up to 1974, the government promoted the use of pesticides by supplying to farmers free of cost (100% subsidy). The subsidy was reduced to 50% in 1974 and the government withdrew subsidy completely in 1979 and the pesticide business was transferred to the private sector (Ali, 2004). The withdrawal of subsidy initially caused a slight decrease of pesticide consumption but helped to popularize pesticide usage through the formation of consumer group (Alam, 1991).

### 2.2 Import of pesticides

In Bangladesh almost all pesticides are imported. There is no Active Ingredient (AI) manufacturer. Only few companies manufacture granular pesticides using imported AI. Only the registration holder company can import registered pesticides from manufacturer generally called 'Principal" (Anon. 1985a). In most cases, pesticides are imported in plastic drum either in liquid or powder forms. Local companies just pack or bottle them for marketing.

## 3. Authorities, agencies and research institutes related to pesticide in Bangladesh

The Directorate of Plant Protection Wing (PPW) of Department of Agricultural Extension (DAE) is the sole authority of providing pesticide registration certificate.

Table 1 shows the designated members of Pesticide Technical Advisory Committee (PTAC) and sub-committee (PTASC). The registration certificate does not provide a party the rights for all operation. For each operation (i.e.; Import, manufacture, formulation, stocking, retail sale, repacking, advertisement etc.), a separate license has to be procured from PPW, DAE.

**Table 1. Designated Members of Pesticide Technical Advisory Committee (PTAC) and Sub-committee (PTASC)**

| Type of Committee | Designated Members | Department | Status |
|---|---|---|---|
| PTAC | Secretary | Ministry of Agriculture | Chairman |
| | Director General | BARI | Member |
| | Director General | BRRI | Member |
| | Director General | BJRI | Member |
| | Director General | BINA | Member |
| | Director General | BSRI | Member |
| | Director General | BTRI | Member |
| | Director General | BFRI | Member |
| | Director General | DAE | Member |
| | Chairman | BCPA | Member |
| | Secretary | BCPA | Member |
| | Director, Plant Protection Wing | DAE | Member Secretary |

| Type of Committee | Designated Members | Department | Status |
|---|---|---|---|
| PTASC | Director, Plant Protection Wing | DAE | Chairman |
| | Chief Scientific Officer (CSO), Entomology Division | BARI | Member |
| | CSO, Entomology Division | BRRI | Member |
| | CSO, Entomology Division | BJRI | Member |
| | CSO, Entomology Division | BINA | Member |
| | CSO, Entomology Division | BSRI | Member |
| | CSO, Entomology Division | BTRI | Member |
| | CSO, Entomology Division | BFRI | Member |
| | Pesticide Regulation Officer | DAE | Member |
| | Deputy Director, Plant Protection Wing | DAE | Member Secretary |

BARI : Bangladesh Agricultural Research Institute

BRRI : Bangladesh Rice Research Institute

BJRI : Bangladesh Jute Research Institute

BINA : Bangladesh Institute of Nuclear Agriculture

BSRI : Bangladesh Sugarcane Research Institute

BTRI : Bangladesh Tea Research Institute

BFRI : Bangladesh Forest Research Institute

DAE : Department of Agricultural Extension

BCPA : Bangladesh Crop Protection Association

## 4. Regulatory framework (Policies, regulations and laws)

### 4.1 Pesticide registration and legislation

According to the Pesticide Ordinance no person shall import, manufacture, formulate (repack), sell, offer for sale, hold in stock for sale or in any manner advertise any brand of pesticide which has not been registered. Any person intending to import, manufacture, formulate (repack), sell, offer for sale, hold in stock for sale or in any manner advertise any brand of pesticide may apply to the government for the registration of the brand under such name as he may indicate in the application.

Registration of pesticides is compulsory. No one is entitled to import, manufacture, formulate, sell, or offer to sale, hold on stock for sale or advertise any brand of pesticide without obtaining a certificate of registration of pesticide from registration authority.

The registration scheme of Bangladesh (Fig. 1) incorporates most of the concepts proposed by FAO and certain features from countries like India, Pakistan, Phillipines, UK and USA (Anon. 1987a).

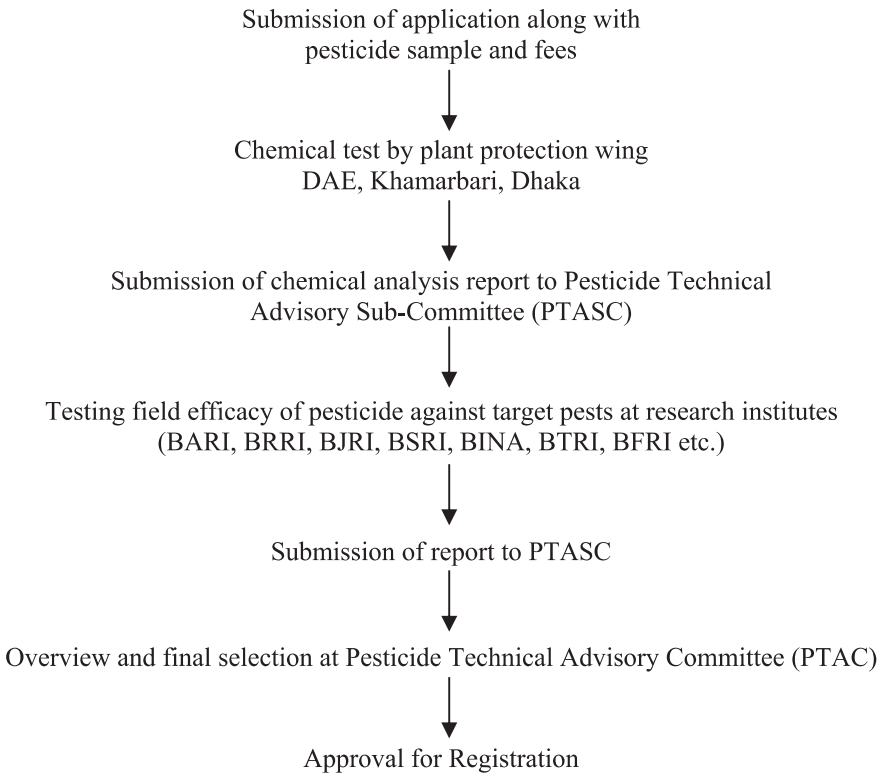



*Fig. 1. Schematic diagram of steps for the registration of a pesticide.*

## 4.2 Pesticide marketing system

The marketing of pesticides has been privatized in 1979 since then the pesticides and their ingredients except some reserve stock maintained by government for emergency purpose are completely marketed by private sector (Talukdar, 2001). According to BCPA (Bangladesh Crop Protection Association- the association of pesticide traders) 30 companies are involved in pesticide business during 2007 (Table 2).There are also 20-30 companies involved in pesticide business but they are not the members of BCPA. Each company market its product through a channel which is shown in Fig. 2.

**Table 2. Name of companies involved in pesticide business**

| Sl No | Company Name | Sl No | Company Name |
|---|---|---|---|
| 1. | Auto Equipment Limited | 16. | Global Agrovet Ltd. |
| 2. | ACI Limited | 17. | SAMP Ltd. |
| 3. | Alpha Agro Ltd. | 18. | SAM Agro Chemical |
| 4. | Corbel International Ltd. | 19. | Syngenta (Bd.) Ltd. |
| 5. | Mc Donald Bd. Ltd. | 20. | BASF Bangladesh Ltd. |
| 6. | Atherton Imbros Co. Ltd. | 21. | Jamuna Oil Company Ltd. |
| 7. | Bangladesh Agril. Industries Ltd. | 22. | Reximco Insecticide Ltd. |
| 8. | Bayer Crop Science Ltd. | 23. | National Agri Care |
| 9. | Padma Oil Company Ltd. | 24. | Sun-Seed Pesticides |
| 10. | Shetu Corporation Ltd. | 25. | East West Chemical Ltd. |
| 11. | Sea Trade Fertilizers Ltd. | 26. | Larsen Chemical Industries |
| 12. | Petrochem (Bd.) Ltd. | 27. | Global Agrovet Ltd. |
| 13. | The Limit Agroproducts Ltd. | 28. | Hossain Enterprise C.C. Ltd. |
| 14. | United Phosphorus (Bd.) Ltd. | 29. | Intefa |
| 15. | Haychem (Bd.) Ltd. | 30. | Larsen Chemicals Industries |

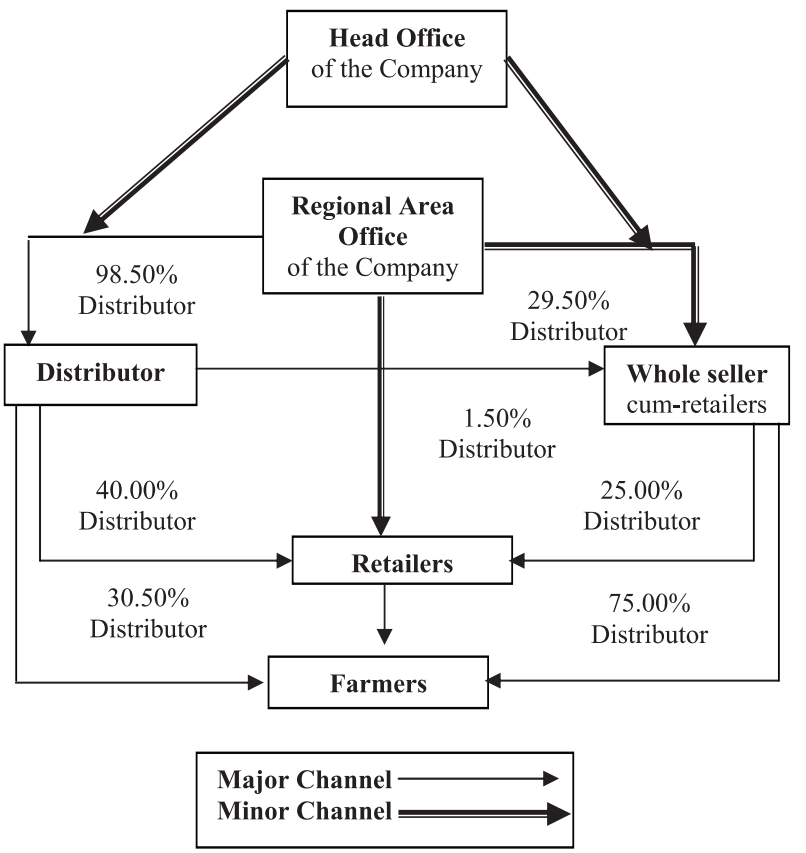



*Fig. 2. Schematic diagram of marketing channel of pesticides.*

## 4.3 Sales of pesticides before and after independence

Pesticide sale in Bangladesh started in 1954 with only 9 tons which went up to 37, 712.20 tons of formulated products during 2007 (Anon. 2007). Table 3 shows year wise sale of pesticides before and after independence. From 1954-2007, reduction in sales were recorded during 1959, 1962, 1964, 1965, 1966, 1968, 1971, 1974, 1976-79, 1981, 1997 and 2001 (Hasanuzzoha, 2004).

**Table 3. Sales of pesticides in volume (FP) before and after independence of Bangladesh**

| Before Independence | | | After Independence | | |
|---|---|---|---|---|---|
| **Year** | **Sales in tons** | **Rate of sale increase** | **Year** | **Sales in tons** | **Rate of sale increase** |
| 1954 | 9.00 | - | 1972 | 3,747.00 | 56.71% |
| 1955 | 9.00 | 0.00% | 1973 | 10,443.00 | 178.70% |
| 1956 | 25.00 | 177.78% | 1974 | 3,634.00 | -65.20% |
| 1957 | 172.00 | 588.00% | 1975 | 4,942.00 | 35.99% |
| 1958 | 307.00 | 78.49% | 1976 | 3,867.00 | -21.75% |
| 1959 | 101.00 | -67.1% | 1977 | 3,531.00 | -8.69% |
| 1960 | 758.00 | 650.50% | 1978 | 2,984.00 | -15.49% |
| 1961 | 1,031.00 | 36.02% | 1979 | 2,763.00 | -7.41% |
| 1962 | 544.00 | -47.24% | 1980 | 3,028.00 | 9.59% |
| 1963 | 3,226.00 | 493.01% | 1981 | 2,274.00 | -24.90% |
| 1964 | 1,643.00 | -49.07% | 1982 | 2,500.00 | 9.04% |
| 1965 | 1,623.00 | -1.22% | 1983 | 2,918.00 | 16.72% |
| 1966 | 496.00 | -69.44% | 1984 | 2,986.00 | 2.33% |
| 1967 | 4,097.00 | 726.01% | 1985 | 3,057.00 | 2.38% |
| 1968 | 2,087.00 | -49.06% | 1986 | 3,425.00 | 12.04% |
| 1969 | 3,999.00 | 91.61% | 1987 | 3,889.00 | 13.55% |
| 1970 | 8,219.00 | 105.53% | 1988 | 4,375.00 | 12.50% |
| 1971 | 2,391.00 | -70.91% | 1989 | 4,802.00 | 9.76% |
| | | | 1990 | 7,021.00 | 46.21% |
| | | | 1991 | 7,055.00 | 0.48% |
| | | | 1992 | 7,307.00 | 3.57% |
| | | | 1993 | 7,443.90 | 1.87% |
| | | | 1994 | 7,884.00 | 5.91% |
| | | | 1995 | 9,608.90 | 21.88% |
| | | | 1996 | 11,629.90 | 21.03% |
| | | | 1997 | 11,378.80 | -2.16% |
| | | | 1998 | 13,615.70 | 19.66% |
| | | | 1999 | 16,397.20 | 20.43% |
| | | | 2000 | 18,902.50 | 15.28% |
| | | | 2001 | 15375.00 | -18.66% |
| | | | 2002 | 17393.00 | 13.14% |
| | | | 2003 | 18080 .00 | 3.95 % |
| | | | 2004 | 22115.00 | 22.32% |
| | | | 2005 | 25446.00 | 15.06% |
| | | | 2006 | 31,544.68 | 23.97% |
| | | | 2007 | 37,712.20 | 19.55% |

Source: a) Bangladesh Agricultural Statistics, Series no. 1; b) Year book of Agricultural Statistics; c) Report of Pesticide Association of Bangladesh and d) Report of Bangladesh Crop Protection Association.

## 4.4 Sales of pesticides by different companies

During 2007, 30 companies were involved with pesticide selling excepting those who are not the members of BCPA. Sales of pesticide in volume (Formulated Product) during 2007 under different companies are presented in the Table 4, which indicated that ACI, Syngenta, Padma oil & Setu Corporation were the leading companies. Of 37,712.20 tons they sold >20,000 tons.

**Table 4. Sales of pesticides in volume (FP) by different companies during 2007**

| Sl. No. | Name of Company | Formulated Products (MT) |
|---|---|---|
| 1. | ACI Limited | 8020.07 |
| 2. | Syngenta Bangladesh Ltd. | 7521.26 |
| 3. | Padma Oil Company Ltd. | 3023.49 |
| 4. | Shetu Pesticide Ltd. | 2,380.96 |
| 5. | Sea Trade Fertilizers Ltd. | 2,317.25 |
| 6. | Shetu Corporation Ltd. | 2177.69 |
| 7. | Auto Equipment Limited | 1674.59 |
| 8. | Bayer Crop Science Ltd. | 1503.7 |
| 9. | BASF Bangladesh Ltd. | 1394.40 |
| 10. | Mc Donald Bd. Ltd. | 1327.91 |
| 11. | Alpha Agro Ltd. | 1170.07 |
| 12. | Atherton Imbros Co. Ltd. | 724.90 |
| 13. | Global Agrovet Ltd. | 691.14 |
| 14. | Corbel International Ltd. | 532.47 |
| 15. | Square Pharmaceuticals Ltd. | 380.53 |
| 16. | East- West Chemical Ltd. | 379.77 |
| 17. | Bangladesh Agricultural Industries Ltd. | 332.50 |
| 18. | SAMP Limited | 291.49 |
| 19. | SAM Agro Chemical | 268.25 |
| 20. | Haychem (Bd.) Ltd. | 256.63 |
| 21. | National Agri Care | 239.74 |
| 22. | Petrochem (Bd.) Ltd. | 218.83 |
| 23. | Reximco Insecticide Ltd. | 192.02 |
| 24. | MAP Agro industries Ltd. | 171.40 |
| 25. | United Phosphorus (Bd.) Ltd. | 165.60 |
| 26. | The Limit Agroproducts Ltd. | 139.15 |
| 27. | Mamun Agro Products Ltd. | 75.90 |
| 28. | Hossain Enterprise C.C. Ltd. | 55.20 |
| 29. | Intefa | 49.51 |
| 30. | Larsen Chemical Industries | 35.72 |
| Total | | 37,712.20 |

## 4.5 Sales of insecticides of different chemical groups

More than 26 chemical active ingredients of insecticides were sold during 2007 (Table 5).

**Table 5. Sales of of different insecticides during 2007 in different formulations**

| Name of insecticides and their formulations | Sales in M. Tons | |
|---|---|---|
| | Formulated | Active |
| 1. Carbofuran 3 & 5 G | 14,849.56 | 718.72 |
| 2. Diazinon 10 G | 3,565.20 | 356.52 |
| 3. Cartap Hydrochloride 4 G | 548.10 | 21.92 |
| 4. Other granular (Chloropyrifos, Carbosulfan, Phenthoate,Cadusafos & Fipronil) | 1000.37 | 32.61 |
| 5. Cypermethrin 10 EC | 672.97 | 67.30 |
| 6. Chlropyrifos 20 EC | 538.99 | 124.91 |
| 7. Fenitrothion 50 EC | 111.22 | 55.61 |
| 8. Carbosulfan 20 EC | 165.83 | 33.17 |
| 9. Diazinon 60 EC | 139.75 | 83.85 |
| 10. Fenvalerate 20 EC | 123.52 | 24.70 |
| 11. Malathion 57 EC | 350.89 | 200.01 |
| 12. Phenthoate 50 EC | 90.56 | 45.08 |
| 13. Fenthion 50 EC | 35.37 | 17.69 |
| 14. Dimethoate 40 EC | 251.18 | 100.47 |
| 15. Imidacloprid 20 SL | 37.72 | 7.54 |
| 16. Quinalphos 25 EC | 157.55 | 39.39 |
| 17. BPMC 50 EC | 11.94 | 5.97 |
| 18. Alpha Cypermethrin 2.5 EC | 19.32 | 0.86 |
| 19. Lambda Cyhalothrin 2.5 EC | 162.39 | 4.06 |
| 20. Abamectin 1.8 EC | 9.29 | 1.82 |
| 21. Deltamethrin 2.5 EC | 20.92 | 0.52 |
| 22. Other (Es-Fenvalevate, Profenfos, Profenfos + Cypermethrin, Endosulfan, Fipronil etc.) | 204.78 | 61.18 |
| 23. Acephate 75 SP | | |
| 24. Cartap 50 SP | 72.46 | 54.35 |
| 25. Carbaryl 85 SP | 379.77 | 189.89 |
| 26. Other Powder Insecticide (Chlorpyriphos, | 17.52 | 14.89 |
| Trichlorfon, MIPC, Thiamethoxam) | 49.61 | 33.00 |
| Total | 23,586.78 | 2,269.46 |

Carbofuran occupied the highest position of sale both by FP (14,849.56 tons) and AI (718.72 tons) followed by Diazinon (FP: 3,565.20 tons; AI: 356.52 tons). The lowest sale was for Abamectin (FP: 9.29 tons; AI: 1.82 tons).

## 4.6 Sales of miticides of different chemical groups

Table 6 shows the amount of miticides sold during 2007. Ethion occupied the lion share of miticide market.

**Table 6. Sales of different miticides in different formulations during 2007**

| Name of miticides and their formulations | Sales in M. Tons | |
|---|---|---|
| | Formulated | Active |
| 1. Propargile 57 EC | 16.33 | 9.31 |
| 2. Ethion 46.5 EC | 33.41 | 15.54 |
| 3. Other miticide (Dicofol, Talstar,Denitol & Tedion) | 12.37 | 1.03 |
| Total | 62.11 | 25.88 |

## 4.7 Sales of different fungicides in different formulations

More than 10 chemical fungicides were sold in different formulations during 2007 (Table 7). Sulphar occupied the highest position in sale both by FP (7,293.71 tons) and AI (5,834.99 tons). Mancozeb ranked 2nd (FP: 1,206.40 tons; AI: 964.08 tons) while Mancozeb + Metalaxyl ranked 3rd (FP: 729.37 tons; AI 512.72 tons).

**Table 7. Sales of different fungicides in different formulations during 2007**

| Name of fungicides and their formulations | Sales in M. Tons | |
|---|---|---|
| | Formulated | Active |
| 1. Carbendazim 50 WP | 281.48 | 140.95 |
| 2. Metlexyl + Mancozeb 72 WP | 729.37 | 512.72 |
| 3. Mancozeb 80 WP | 1,206.40 | 964.08 |
| 4. Hexaconazole 5 EC | 109.90 | 5.50 |
| 5. Coper Oxychloride 50 WP | 22.42 | 11.21 |
| 6. Sulphur 80 WP | 7,293.71 | 5,834.99 |
| 7. Propiconazole 25 EC | 220.64 | 55.16 |
| 8. Edifenfos 50 EC | 8.00 | 4.00 |
| 9. Other Fungicides (Propineb, Hydrooxychloride, Tebuconazole, Dimethomorph + Mancozeb, materil, Propineb + Iprovalicarb, Tridimorph Difenconazole, Diniconazole, metiram complex, mencozeb + Carbendazim, Iprodione etc.) | 356.43 | 195.29 |
| Total | 10,227.66 | 7,723.68 |

## 4.8 Sales of different herbicides in different formulations

Among different herbicides (Table 8), Butachlor FP was sold in the highest amount (2,350.36 tons) but as AI, sale of Pretilachlor ranked first ((574.67 tons).

**Table 8. Sales of different herbicides in different formulations during 2007**

| Name of herbicides and their formulations | Sales in M. Tons | |
|---|---|---|
| | Formulated | Active |
| 1. Glyphosate | 86.22 | 35.35 |
| 2. 2-4-D | 70.92 | 29.74 |
| 3. Butachlor 5G | 2,350.36 | 117.52 |
| 4. Pretilachlor 500EC | 1,149.33 | 574.67 |
| 5. Paraquat | 70.63 | 14.13 |
| 6. Oxadiazon | 49.92 | 12.48 |
| 7. Other Herbicides (Ethoxysulfuram, Pyazosulfuram, Anilphos, Glyphosate+ 2,4,-D, MCPA etc. | 47.91 | 10.22 |
| Total | 3825.29 | 794.14 |

## 4.9 Sales of rodenticides and public health products

The total amount of rodenticides sold in 2007 was 10.36 tons while it was 13.50 tons for Public Health Products (Table 9).

**Table 9. Sales of rodenticides and public health products during 2007**

| Name of rodenticide and public health products | Sales in M. Tons | |
|---|---|---|
| | Formulated | Active |
| 1. Rodenticide (Zinc Phosphide, Bromadiolone & Flucumafen) | 10.36 | 14.74 |
| 2. Public Health Product (Actellic, Keeper etc.) | 13.50 | - |

## 4.10 Sales of different of formulations and types of pesticides in 2001-2007

In case of insecticides, the amount of granular formulation (G) sold during 2001-2007 was 5.04-8.24 times higher than liquid (1426-3,159.14 tons) (Table 10) (Anon.2001-07). Powder insecticides accounted only 86-519.36 tons. Insecticides ranked 1$^{st}$ in sales, fungicides ranked 2$^{nd}$ (2147-10,227.66 tons) followed by herbicides (838-3825.29 tons). Sales of insecticides increased steadily from 2000 to 2007 with the exception in 2003. Fungicide sales jumped by 4.76 folds from 2000 to 2007. Herbicide sales, on the other hand, increased by 4.56 folds from 2000 to 2007 except 2005. Significant reduction of sales is noticed in PHP, which was 561 tons in 2000 but reduced to 13.50 tons in 2007 (Table 10).

**Table 10. Sales of different categories of pesticides during 2001-2007**

| Categories of Pesticide | | Sales (in tons) during | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** |
| Insecticide | G | 10,788.36 | 12,335.35 | 11,781.35 | 12,113.39 | 14,061.65 | 15,918.44 | 19,963.23 |
| | L | 1,426.45 | 1,496.85 | 1,830.82 | 2,008.27 | 2,511.06 | 3,159.14 | 3104.19 |
| | P | 86.04 | 115.06 | 122.75 | 191.49 | 267.34 | 453.57 | 519.36 |
| Miticide | | 18.85 | 27.06 | 32.28 | 37.62 | 56.20 | 60.70 | 62.11 |
| Fungicide | | 2,147.57 | 2,418.80 | 2,940.68 | 4,279.21 | 5,771.74 | 8732.70 | 10,227.66 |
| **Herbicide** | | **838.00** | **963.99** | **1,354.01** | **3,462.82** | **2,774.94** | **3205.40** | **3825.29** |
| Rodenticide | | 70.30 | 36.34 | 18.55 | 23.08 | 23.54 | 14.74 | 10.36 |
| Public Health Product | | 561.50 | 394.74 | 10.12 | 15.02 | 13.50 | - | 13.50 |
| Total | | 15,937.07 | 17,788.19 | 18,080.44 | 22,115.88 | 25,466.47 | 31,544.68 | 37,712.20 |

G = Granular; L = Liquid; P = Powder

## 4.11 Crop wise sales of pesticides

Around 1.9 million hectares of land available for cultivation in Bangladesh, of which rice occupied ≥75%. Other major crops are Maize, Wheat, Sugarcane, Mustard, Potato, Chili and Vegetables. The information on crop wise sales is very difficult to get or formulate but Hassanuzzoha (2004) reported that rice consumed ≥85% of the total pesticides followed by sugarcane and potato (Table 11).

**Table 11. Crop wise sales of pesticides in 2005**

| Crop | Sales of FP (tons) | Percentage of sale |
|---|---|---|
| Rice | 22,118.26 | 86.81 |
| Sugarcane | 1312.53 | 5.15 |
| Potato | 1029.35 | 4.04 |
| Tea | 316.15 | 1.24 |
| Brinjal | 206.77 | 0.81 |
| Rubber | 107.88 | 0.42 |
| Cotton | 92.89 | 0.36 |
| Mustard | 82.41 | 0.32 |
| Mango | 49.44 | 0.19 |
| Chili | 38.96 | 0.15 |
| Banana | 29.97 | 0.12 |
| Pulses | 29.97 | 0.12 |
| Betel leaf | 17.98 | 0.07 |
| Tobacco | 16.48 | 0.06 |
| Jute | 15.95 | 0.07 |
| Wheat | 14.98 | 0.06 |
| Total | 25,479.97 | 100.00 |

## 4.12 Growth rate and pesticide consumption

Annual growth rates of pesticide sale during 2000-2007 are presented in the Table 12. It is revealed from the Table that pesticides sale increased every year except 2001. The highest growth was recorded in 2004 (22.33%).

**Table 12. The rate of increase of pesticide sales during 2001-2007 in Bangladesh**

| Year | Sales of FP (tons) | Percent of increase |
|---|---|---|
| 2001 | 15,960.20 | - |
| 2002 | 17,788.19 | 11.45 |
| 2003 | 18,090.56 | 1.69 |
| 2004 | 22,130.90 | 22.33 |
| 2005 | 25,479.97 | 15.13 |
| 2006 | 31,544.68 | 19.23 |
| 2007 | 37,712.20 | 19.55 |

The pesticide consumption in Bangladesh has reached up to 37,712.20 tons as against only 3,531 tons in 1977. The growth rate analysis over a period of 29 years shows an average of 9% annual increase. The use of pesticides per unit area in Bangladesh is very negligible (300 g AI/ha).

# 5. Registered chemical pesticides in Bangladesh

Pesticide includes insecide, fungicide, miticide, rodenticide and others. List of all registered pesticides are given below:

### 5.1 List of registered insecticide

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Acephate | 1 | Asataf 75 SP | AP-400 | Auto Equipment Limited |
| | 2 | Tidphate 75 SP | AP-473 | ACI Formulations Limited |
| | 3 | Lancer 75 SP | AP-475 | United Phosphorous (Bangladesh) Ltd |
| | 4 | Fortunate 75 SP | AP-515 | Square Pharmaceuticals Limited |
| | 5 | Sinophate 75 SP | AP-534 | Oroni International Limited |
| | 6 | Banish 75 SP | AP-569 | SAM Agro Chemical |
| | 7 | Challenger 75 SP | AP-598 | Global Agrovet Limited |
| | 8 | Acehero 75 SP | AP-619 | The Limit Agroproducts Limited |
| | 9 | Megaphate 75 SP | AP-684 | SARK Bangladesh Limited |
| | 10 | Jung 75 SP | AP-743 | Corbel International Limited |
| | 11 | Mimphate 75 SP | AP-831 | Mimpex Agro Chemical Limited |
| | 12 | Impact 75 SP | AP-836 | Agri Business International |
| Acephate+ Fenvalerate | 1 | Koranda | AP-794 | Auto Equipment Limited |
| Azadirachtin | 1 | Nimbicidine | AP-373 | ACI Formulations Limited |
| Osfencarb (BPMC) | 1 | Osbac 50 EC | AP-223 | Syngenta Bangladesh Limited |
| | 2 | Bassa 50 EC | AP-142 | Data Enterprises Limited |
| | 3 | Chemocarb 50 EC | AP-224 | ACI Formulations Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 4 | Killer 50 EC | AP-387 | Reximco Insecticides Limited |
| | 5 | Baycarb EC 500 | AP-488 | Bayer CropScience Limited |
| | 6 | Mis-Kill 50 EC | AP-681 | Sun-Seed Pesticides |
| | 7 | Phahar 50 EC | AP-810 | MAP Agro Industries Limited |
| Bifenthrin | 1 | Talstar 2.5 EC | AP-426 | FMC International S.A. |
| | 2 | Talstar 2 WP | AP-427 | FMC International S.A. |
| Carbaryl | 1 | Carbaryl 85 WP | AP-150 | McDonald Bangladesh (Pvt) Limited |
| | 2 | Vitabryl 85 WP | AP-401 | McDonald Bangladesh (Pvt) Limited |
| | 3 | Sevin 85 SP | AP-544 | Bayer CropScience Limited |
| Carbofuran | 1 | Carbofuran 3G | AP-05 | ACI Formulations Limited |
| | 2 | Furacarb 3GR | AP-214 | ACI Formulations Limited |
| | 3 | Iridon 3GR | AP-215 | Corbel International Limited |
| | 4 | Forwafuran 5G | AP-232 | Shetu Pesticides Limited |
| | 5 | Sunfuran 5G | AP-233 | Shetu Agro Industries Limited |
| | 6 | Furataf 5G | AP-244 | Auto Equipment Limited |
| | 7 | Cabufudan 3GR | AP-262 | Shetu Marketing Company |
| | 8 | Biesteran 5G | AP-277 | Alpha Agro Limited |
| | 9 | Fendor 5G | AP-279 | Sea Trade Fertilizer Limited |
| | 10 | Furasun 5G | AP-280 | Servi Health |
| | 11 | Pillarfuran 5G | AP-293 | Shetu Marketing Company |
| | 12 | Carbomot 5G | AP-302 | MAP Agro Industries Limited |
| | 13 | Vitafuran 5G | AP-303 | McDonald Bangladesh (Pvt) Limited |
| | 14 | Agrifuran 5G | AP-304 | Sea Trade Fertilizer Limited |
| | 15 | Razfuran 5G | AP-305 | ACI Formulations Limited |
| | 16 | Arodhaan 5G | AP-323 | United Phosphorus (Bangladesh) Ltd |
| | 17 | Brifur 5G | AP-324 | ACI Formulations Limited |
| | 18 | Amcofuran 3GR | AP-343 | Atherton Imbros Company Limited |
| | 19 | Alphafuran 5G | AP-440 | Alpha Agro Limited |
| | 20 | Cemifuran 5G | AP-441 | SAMP Limited |
| | 21 | Kuridan 5G | AP-442 | Polymar Agro Industries Limited |
| | 22 | Paradox 5G | AP-451 | Agro Continent Bangladesh |
| | 23 | Limicarb 5G | AP-483 | The Limit Agroproducts Limited |
| | 24 | Camfuran 5G | AP-485 | Petrochem (Bangladesh) Limited |
| | 25 | Curaterr 5G | AP-490 | Bayer CropScience Limited |
| | 26 | Furadan 5G | AP-499 | Padma Oil Company Limited |
| | 27 | Corofuran 5G | AP-508 | Corbel Chemical Industries Limited |
| | 28 | Sinodan 5G | AP-525 | Global Agrovet Limited |
| | 29 | Sinocarb 3GR | AP-537 | Global Agrovet Limited |
| | 30 | Hayfuran 5G | AP-566 | Haychem (Bangladesh) Limited |
| | 31 | Amcofuran 5G | AP-592 | Atherton Imbros Company Limited |
| | 32 | Unifuran 5G | AP-651 | Spark Limited |
| | 33 | Sarafuran 5G | AP-657 | Sara Chemicals Limited |
| | 34 | Pillar 5G | AP-670 | Anika Enterprises |
| | 35 | Edfuran 5G | AP-671 | Nokon Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 36 | Q-Furan 5G | AP-672 | Kodside Bangladesh Limited |
| | 37 | Hextar 5G | AP-673 | Agri Business International |
| | 38 | New Furan 5G | AP-674 | National AgriCare Bangladesh |
| | 39 | Krishan 5G | AP-686 | East West Chemicals Limited |
| | 40 | Chezer 3G | AP-726 | SAM Agro Chemical |
| | 41 | Rexifuran 5G | AP-747 | Reximco Insecticides Limited |
| | 42 | Wenfuran 5G | AP-749 | Rahman Pesticide & Chemical Co. |
| | 43 | Baifuran 5G | AP-750 | Bangladesh Agricultural Industries |
| | 44 | Furami Plus 3GR | AP-813 | Medicon Agrovet Limited |
| | 45 | Nikidan 3GR | AP-814 | Anika Enterprise |
| | 46 | Wangdan 3GR | AP-815 | SAMP Limited |
| | 47 | Carbine 5G | AP-816 | MB Agro Products Limited |
| | 48 | Mimfuran 5G | AP-818 | Mimpex Agrochemicals Limited |
| | 49 | Carbotaf 5G | AP-819 | Auto Crop Care Limited |
| | 50 | Myfuran 3GR | AP-820 | East West Chemicals Limited |
| | 51 | Borer 5G | AP-821 | Aranya Crop Care Limited |
| | 52 | Pardan 5G | AP-839 | Prime Agro Limited |
| Carbosulfan | 1 | Marshal 20 EC | AP-91 | FMC International S.A. |
| | 2 | Marshal 6G | AP-369 | FMC International S.A. |
| | 3 | Sunsulfan 20 EC | AP-380 | Shetu Corporation Limited |
| | 4 | Pillarsufan 20 EC | AP-416 | Shetu Pesticides Limited |
| | 5 | Amcosul 20 EC | AP-431 | Atherton Imbros Company Limited |
| | 6 | Advantage 20 SC | AP-432 | FMC International S.A. |
| | 7 | Sicosulfan 20 EC | AP-455 | SAMP Limited |
| | 8 | General 20 EC | AP-462 | Alpha Agro Limited |
| | 9 | Amitage 20 EC | AP-476 | Polymar Agro Industries Limited |
| | 10 | Benefit 20 EC | AP-621 | McDonald Bangladesh (Pvt) Limited |
| | 11 | Haysulfan 20 EC | AP-668 | Haychem (Bangladesh) Limited |
| | 12 | Touch 20 EC | AP-773 | Reximco Insecticides Limited |
| | 13 | Mimsulfan 20 EC | AP-830 | Mimpex Agro Chemicals Limited |
| | 14 | Delcy 20 EC | AP-837 | Maitri Agro Industries |
| | 15 | Corosulfan 20 EC | AP-840 | Corbel Chemical Industries Limited |
| | 16 | E-Fan 20 EC | AP-865 | East West Chemicals Limited |
| Cartap | 1 | Suntap 50 SP | AP-217 | McDonald Bangladesh (Pvt) Limited |
| | 2 | Padan 4 GR | AP-372 | Krishi Kallyan Limited |
| | 3 | Forwatap 50 SP | AP-378 | Shetu Pesticides Limited |
| | 4 | Seda 50 SP | AP-420 | Auto Equipment Limited |
| | 5 | Katap 50 SP | AP-421 | Petrochem (Bangladesh) Limited |
| | 6 | Cartap 50 SP | AP-422 | Corbel International Limited |
| | 7 | Razex 4G | AP-423 | Polymar Agro Industries Limited |
| | 8 | Cidan 4G | AP-424 | Nokon Limited |
| | 9 | Forwatap 4G | AP-425 | Shetu Pesticides Limited |
| | 10 | Cemitap 50 SP | AP-450 | SAMP Limited |
| | 11 | Rider 50 SP | AP-456 | Atherton Imbros Company Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 12 | Cikotap 50 SP | AP-457 | Shetu Corporation Limited |
| | 13 | Sundan 4GR | AP-463 | Shetu Corporation Limited |
| | 14 | Padan 50 SP | AP-555 | Data Enterprises Limited |
| | 15 | Ferdan 50 SP | AP-588 | Naboti Corporation Limited |
| | 16 | Care 4G | AP-593 | ACI Formulations Limited |
| | 17 | Agritap 50 SP | AP-594 | Agri Business International |
| | 18 | Sinotap 50 SP | AP-595 | Global Agrovet Limited |
| | 19 | Fortune 50 SP | AP-596 | Agrocare Limited |
| | 20 | Phartap 50 SP | AP-605 | Fharma & Farm |
| | 21 | Tenup 50 SP | AP-607 | Bagnan Enterprise |
| | 22 | Superdan 50 SP | AP-649 | Omnichem Limited |
| | 23 | Hero 50 SP | AP-650 | Sun-Seed Pesticides |
| | 24 | Raxitap 50 SP | AP-652 | Reximco Insecticides Limited |
| | 25 | Megatap 50 WP | AP-653 | East West Chemicals Limited |
| | 26 | Care 50 SP | AP-654 | ACI Formulations Limited |
| | 27 | Victor 50 SP | AP-679 | Spark Limited |
| | 28 | Wendan 4GR | AP-687 | Home Pest Control |
| | 29 | Wentap 50 SP | AP-768 | Rahman Pesticide & Chemical Co. |
| | 30 | Baitap 50 SP | AP-769 | Bangladesh Agricultural Industries |
| | 31 | Mimtap 50 SP | AP-770 | Mimplex Agrochemicals Limited |
| | 32 | Riversun 4G | AP-771 | Sun-Seed Pesticides |
| | 33 | Medituf 50 SP | AP-772 | M. N. Huda & Co. |
| | 34 | Nutap 4G | AP-807 | ACI Formulations Limited |
| | 35 | Arotap 50 SP | AP-812 | Aranya Crop Care |
| | 36 | Rakhal 4G | AP-817 | MAP Agro Industries Limited |
| | 37 | Bijoy 4G | AP-822 | East West Chemicals Limited |
| | 38 | Haytap 50 SP | AP-833 | Haychem (Bangladesh) Limited |
| | 39 | Filtap 50 SP | AP-834 | A. M. Traders |
| | 40 | Acar 50 SP | AP-866 | Axil Life Sciences Limited |
| | 41 | Seatap 50 SP | AP-867 | Sea Trade Fertilizer Limited |
| | 42 | Alphatap 50 SP | AP-920 | Alpha Agro Limited |
| Chlorpyrifos | 1 | Dursban 20 EC | AP-93 | Auto Equipment Limited |
| | 2 | Pyrifos 20 EC | AP-259 | McDonald Bangladesh (Pvt) Limited |
| | 3 | Luxan Chlorpyrifos 20 EC | AP-344 | Shetu Corporation Limited |
| | 4 | Classic 20 EC | AP-345 | ACI Formulations Limited |
| | 5 | Chlorban 20 EC | AP-346 | United Phosphorus (Bangladesh) Ltd |
| | 6 | Lorsban 15G | AP-371 | Auto Equipment Limited |
| | 7 | Vitashild 20 EC | AP-386 | Shetu Marketing Company |
| | 8 | Lithal 20 EC | AP-379 | Shetu Pesticides Limited |
| | 9 | Pyriban 20 EC | AP-381 | Agro Development Services Co. (Pvt) Ltd. |
| | 10 | Chlorpyriphos 20 EC | AP-382 | Alpha Agro Limited |
| | 11 | Limriphos 20 EC | AP-405 | The Limit Agroproducts Limited |
| | 12 | Amcofos 20 EC | AP-434 | Atherton Imbros Company Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 13 | Shimba 20 EC | AP-435 | Nokon Limited |
| | 14 | Cyren 50 WP | AP-436 | Shetu Corporation Limited |
| | 15 | Chlorocid | AP-466 | Corbel International Limited |
| | 16 | Cyren 20 EC | AP-477 | Shetu Agro Industries Limited |
| | 17 | Helix 20 EC | AP-478 | SAM Agro Chemical |
| | 18 | Pychlorex 20 EC | AP-479 | Square Pharmaceuticals Limited |
| | 19 | Chlopyrifos 20 EC | AP-500 | Global Agrovet Limited |
| | 20 | Kilfos 20 EC | AP-503 | Padma Agro Spayers Company |
| | 21 | Sulban 20 EC | AP-506 | Axil Life Sciences Limited |
| | 22 | Pyriban 15G | AP-516 | ACI Formulations Limited |
| | 23 | Sunbun 20 EC | AP-565 | Prime Agro Limited |
| | 24 | Sikoban 20 EC | AP-567 | SAMP Limited |
| | 25 | Rexiban 20 EC | AP-568 | Reximco Insecticides Limited |
| | 26 | Hitachlor 25 WP | AP-582 | Prime Agro Limited |
| | 27 | Sarafos 20 EC | AP-597 | Sara Chemicals Limited |
| | 28 | Tricel 20 EC | AP-617 | Haychem (Bangladesh) Limited |
| | 29 | Monitor 20 EC | AP-618 | Chemolimpex Agro Limited |
| | 30 | Morter 48 EC | AP-620 | National AgriCare Bangladesh |
| | 31 | Surate 20 EC | AP-622 | Asia Trade International |
| | 32 | Cyren 15G | AP-632 | Shetu Corporation Limited |
| | 33 | Chemicide 20 EC | AP-655 | Agri Business International |
| | 34 | Marine 20 EC | AP-680 | Mosco Marketing Company |
| | 35 | Master 20 EC | AP-708 | East West Chemicals Limited |
| | 36 | Nokoban 15G | AP-759 | Nokon Limited |
| | 37 | Agphos 20 EC | AP-760 | Mamun Agro Products Limited |
| | 38 | Action 20 EC | AP-761 | MAP Agro Industries Limited |
| | 39 | Megaban 20 EC | AP-762 | SARK Bangladesh Limited |
| | 40 | Paraphos 20 EC | AP-763 | Parallel Corporation |
| | 41 | Sunfos 20 EC | AP-764 | Sun-Seed Pesticides |
| | 42 | Fossil 20 EC | AP-763 | Green View Bangladesh |
| | 43 | Wenphos 20 EC | AP-766 | Home Pest Control |
| | 44 | MB Chloro 20 EC | AP-823 | MB Agro Products Limited |
| | 45 | Littac 20 EC | AP-825 | M. Hossain Enterprise |
| | 46 | Expert 20 EC | AP-876 | Larsen Chemical Industries Limited |
| | 47 | Wenchloro 15G | AP-878 | Home Pest Control |
| Chlorpyrifos + Alpha Cypermethrin | | Ducord 17 EC | AP-793 | BASF Bangladesh Limited |
| Chlorpyrifos+methyl | 1 | Reldan 25 EC | AP-94 | Auto Equipment Limited |
| Cypermethrin | 1 | Cymbush 10 EC | AP-60 | Syngenta Bangladesh Limited |
| | 2 | Arrivo 10 EC | AP-140 | FMC International S.A. |
| | 3 | Basathrin 10 EC | AP-162 | BASF Bangladesh Limited |
| | 4 | Sunmerin 10 EC | AP-209 | McDonald Bangladesh (Pvt) Limited |
| | 5 | Agromethrin 10 EC | AP-210 | Shetu Pesticides Limited |
| | 6 | Peskil 10 EC | AP-211 | Edgro (Private) Limited |
| | 7 | Cypermar 10 EC | AP-221 | Alpha Agro Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 8 | Ralothrin 10 EC | AP-222 | Auto Equipment Limited |
| | 9 | Limper 10 EC | AP-247 | The Limit Agroproducts Limited |
| | 10 | Ustaad 10 EC | AP-248 | United Phosphorous (Bangladesh) Ltd |
| | 11 | Cypersun 10 EC | AP-309 | Servi Health |
| | 12 | Cythrine 10 EC | AP-310 | ACI Formulations Limited |
| | 13 | Ripcord 10 EC | AP-335 | BASF Bangladesh Limited |
| | 14 | Shincyper 10 EC | AP-418 | Petrochem (Bangladesh) Limited |
| | 15 | Mazic 10 EC | AP-437 | Reximco Insecticides Limited |
| | 16 | Fencord 10 EC | AP-438 | Atherton Imbros Company Limited |
| | 17 | Superthrin 10 EC | AP-474 | SAM Agro Chemical |
| | 18 | Sinothrin 10 EC | AP-505 | Global Agrovet Limited |
| | 19 | Cymkil 10 EC | AP-507 | Naafco Private Limited |
| | 20 | Cyperin 10 EC | AP-512 | Square Pharmaceuticals Limited |
| | 21 | Filcord 10 EC | AP-518 | Agritech |
| | 22 | Acord 10 EC | AP-521 | Agrocare Limited |
| | 23 | Sicorin 10 EC | AP-522 | SAMP Limited |
| | 24 | Cypercid 10 EC | AP-523 | Pharma & Farms |
| | 25 | Buster 10 EC | AP-564 | Ntional AgriCare Bangladesh |
| | 26 | Cyperkil 10 EC | AP-575 | Agri Business International |
| | 27 | Rise 10 EC | AP-630 | Eon Agro Industries Limited |
| | 28 | Pythrin 10 EC | AP-636 | Prime Agro Limited |
| | 29 | Caught 10 EC | AP-639 | ACI Formulations Limited |
| | 30 | Sarathrin 10 EC | AP-640 | Sara Chemicals Limited |
| | 31 | Chemomethrin 10 EC | AP-641 | Chemolimpex Agro Limited |
| | 32 | Cypered 10 EC | AP-643 | Naboti Corporation Limited |
| | 33 | Suncot 10 EC | AP-645 | Padma Agro Spayers Company |
| | 34 | Spark 10 EC | AP-676 | Spark Limited |
| | 35 | Parathrin 10 EC | AP-705 | Parallel Corporation |
| | 36 | Leader 10 EC | AP-721 | MAP Agro Industries Limited |
| | 37 | Cyper 10 EC | AP-723 | Mosco Marketing Company |
| | 38 | Cyking 10 EC | AP-731 | Green View Bangladesh Limited |
| | 39 | Durin 10 EC | AP-767 | M. Hossain Enterprise |
| | 40 | Amathrine 10 EC | AP-811 | Aranya Crop Care |
| | 41 | Haymethrin 10 EC | AP-871 | Haychem (Bangladesh) Limited |
| | 42 | Cymbaz 10 EC | AP-872 | Agro Business Support Limited |
| | 43 | Baimethrin | AP-879 | Bangladesh Agricultural Industries |
| | 44 | Simcord 10 EC | AP-881 | Agrimax Bangladesh Limited |
| Cyfluthrin | 1 | Baythroid 50 EC | AP-168 | Haychem (Bangladesh) Limited |
| Cadusafos | 1 | Rugby 10G | AP-484 | FMC International S.A. |
| Profenofos Q + Cypermethrin | 1 | Shobicron 425 EC | AP-322 | Syngenta Bangladesh Limited |
| Profenofos | 2 | Maple 50 EC | AP-722 | MAP Agro Industries Limited |
| Alpha Cypermethrin | 1 | Fastac 2 EC | AP-192 | BASF Bangladesh Limited |
| | 2 | Sico Alpha 2.5 EC | AP-647 | SAMP Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 3 | Axis 10 EC | AP-675 | Larsen Chemical Industires (Pvt) Ltd |
| Lambda-Cyhalothrin | 1 | Karate 2.5 EC | AP-263 | Syngenta Bangladesh Limited |
| | 2 | Fighter 2.5 EC | AP-502 | ACI Formulations Limited |
| | 3 | Reeva 2.5 EC | AP-520 | Auto Equipment Limited |
| | 4 | Message 2.5 EC | AP-638 | Alpha Agro Limited |
| | 5 | Jubas 2.5 EC | AP-874 | Intefa |
| Deltamethrin | 1 | Decis 2.5 EC | AP-317 | Bayer CropScience Limited |
| | 2 | Delmark 2.5 EC | AP-519 | Axil Life Sciences Limited |
| | 3 | Nokthion 2.5 EC | AP-644 | Nokon Limited |
| | 4 | Crackdown | AP-727 | Bayer CropScience Limited |
| | 5 | Wenkil 2.5 EC | AP-737 | Rahman Pesticide & Chemical Co. |
| | 6 | Limidelta 2.5 EC` | AP-776 | The Limit Agroproducts Limited |
| | 7 | Acithrin 2.5 EC | AP-880 | ACI Formulations Limited |
| | 8 | Major 2.5 EC | AP-893 | Eon Agro Industries Limited |
| | 9 | K-Obiol 2.5 WP | AP-902 | Bayer CropScience Limited |
| Diazinon | 1 | Dizinol 14G | AP-02 | Agrani Traders |
| | 2 | Diatone 10G | AP-130 | The Limit Agroproducts Limited |
| | 3 | Sabion 10G | AP-159 | McDonald Bangladesh (Pvt) Limited |
| | 4 | Sabion 60 EC | AP-160 | McDonald Bangladesh (Pvt) Limited |
| | 5 | Diazon 10G | AP-208 | Shetu Pesticides Limited |
| | 6 | Dizinol 60 EC | AP-237 | The Limit Agroproducts Limited |
| | 7 | Diazon 60 EC | AP-238 | Shetu Pesticides Limited |
| | 8 | Diazinon 10G | AP-281 | Nokon Limited |
| | 9 | Razdan 10G | AP-282 | ACI Formulations Limited |
| | 10 | Diazonyl T 60 EC | AP-283 | ACI Formulations Limited |
| | 11 | Diazinon 60 EC | AP-321 | Sea Trade Fertilizer Limited |
| | 12 | Dianon 10G | AP-332 | Shetu Marketing Company |
| | 13 | Diazinon 10GR | AP-385 | Krishi Kallyan Limited |
| | 14 | Shanon 10 G | AP-433 | Polymar Agro Industries Limited |
| | 15 | Amcozinon 10G | AP-461 | Atherton Imbros Company Limited |
| | 17 | Basudin 10GR | AP-532 | Syngenta Bangladesh Limited |
| | 18 | Ricon 60 EC | AP-533 | Syngenta Bangladesh Limited |
| | 19 | Diazinon 14G | AP-554 | Data Enterprises Limited |
| | 20 | Diazinon 60 EC | AP-557 | Data Enterprises Limited |
| | 21 | Diazinon 90 ULVC | AP-560 | Data Enterprises Limited |
| | 22 | Hayzinon 60 EC | AP-583 | Haychem (Bangladesh) Limited |
| | 23 | Amcozinon 60 EC | AP-589 | Atherton Imbros Company Limited |
| | 24 | Agrizinon 60 EC | AP-629 | Agri Business International |
| | 25 | Laidan 60 EC | AP-646 | Asia Trade International |
| | 26 | Baizinon 10G | AP-774 | Bangladesh Agricultural Industries |
| | 27 | Devizinon 14G | AP-775 | The Limit Agroproducts Limited |
| | 28 | Shelter 60 EC | AP-829 | Linux Pesticides (Pvt) Limited |
| Dimethoate | 1 | Rogor 40 L | AP-141 | ACI Formulations Limited |
| | 2 | Delathoate 40 EC | AP-152 | Corbel International Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 3 | Selathoate 40 EC | AP-212 | Shetu Pesticides Limited |
| | 4 | Dimegro 40 EC | AP-226 | Sea Trade Fertilizer Limited |
| | 5 | Sunagor 40 EC | AP-227 | Shetu Corporation Limited |
| | 6 | Tafgor 40 EC | AP-228 | Auto Equipment Limited |
| | 7 | Dimethion 40 EC | AP-246 | Shetu Marketing Company |
| | 8 | Biesterthoate 40 EC | AP-290 | Alpha Agro Limited |
| | 9 | Nugor 40 EC | AP-326 | United Phosphorous (Bangladesh) Ltd |
| | 10 | Novathoate 40 EC | AP-389 | Pestmark Chemicals Corporation |
| | 11 | Dimivest 40 EC | AP-390 | Harvest International |
| | 12 | Dimezyl 40 EC | AP-514 | Square Pharmaceuticals Limited |
| | 13 | Perfeckthion 40 EC | AP-549 | BASF Bangladesh Limited |
| | 14 | Haymethoate 40 EC | AP-571 | Haychem (Bangladesh) Limited |
| | 15 | Dimexion 40 EC | AP-572 | Agri Business International |
| | 16 | Startar 40 EC | AP-634 | National AgriCare Bangladesh |
| | 17 | Roxin 40 EC | AP-635 | Anika Enterprises |
| | 18 | Dynamic 40 EC | AP-658 | SAM Agro Chemical |
| | 19 | Shinthoate 40 EC | AP-888 | Omnihem Limited |
| Endosulfan | 1 | Thiodan 35 EC | AP-114 | Bayer CropScience Limited |
| Etofenprox | 1 | Trebon 10 EC | AP-161 | Data Enterprises Limited |
| Fenthion | 1 | Edfen 50 EC | AP-191 | Sea Trade Fertilizer Limited |
| | 2 | Pillartex 50 EC | AP-414 | Shetu Pesticides Limited |
| | 3 | Dragon 50 EC | AP-454 | Alpha Agro Limited |
| | 4 | Lebaycid 50 EC | AP-492 | Bayer CropScience Limited |
| Fenitrothion | 1 | Fenitox 50 EC | AP-04 | The Limit Agroproducts Limited |
| | 2 | Folithion 50 EC | AP-32 | Haychem (Bangladesh) Limited |
| | 3 | Sumithion 98 ULV | AP-106 | Shetu Corporation Limited |
| | 4 | Sumithion 3% Dust | AP-156 | Shetu Corporation Limited |
| | 5 | Edthion 50 EC | AP-196 | Sea Trade Fertilizer Limited |
| | 6 | Sovathion 50 EC | AP-240 | Shetu Pesticides Limited |
| | 7 | Emithion 50 EC | AP-261 | Shetu Marketing Company |
| | 8 | Lithion 50 EC | AP-348 | Agrocare Limited |
| | 9 | Fenitro 50 EC | AP-393 | MAP Agro Industries Limited |
| | 10 | Sumithion 50 EC | AP-540 | Shetu Agro Industries Limited |
| | 11 | Corfen 50 EC | AP-678 | Corbel Chemical International Limited |
| | 12 | Nokfen 50 EC | AP-901 | Bony Enterprise |
| Fenitrothion+ BPMC | 1 | Sumibas 75 EC | AP-255 | Shetu Corporation Limited |
| Fenvalerate | 1 | Milfen 20 EC | AP-249 | Shetu Pesticides Limited |
| | 2 | Sunvalerate 20 EC | AP-250 | McDonald Bangladesh (Pvt) Limited |
| | 3 | Fentox 20 EC | AP-314 | Auto Equipment Limited |
| | 4 | Fenfen 20 EC | AP-327 | Alpha Agro Limited |
| | 5 | Fencid 20 EC | AP-443 | Corbel International Limited |
| | 6 | Velafen 20 EC | AP-444 | SAM Agro Chemical |
| | 7 | Filtouch 20 EC | AP-459 | Naafco Private Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 8 | Sumicidin 20 EC | AP-541 | Shetu Corporation Limited |
| | 9 | Fendithion 20 EC | AP-574 | Agri Bunsiness International |
| | 10 | Amcofen 20 EC | AP-585 | Atherton Imbros Company Limited |
| | 11 | Zadu 20 EC | AP-587 | Reximco Insecticides Limited |
| | 12 | Profen 20 EC | AP-590 | Prime Agro Limited |
| | 13 | Sicofen 20 EC | AP-624 | Genetika |
| | 14 | Mighty 20 EC | AP-631 | ACB Agro Continent Bangladesh |
| | 15 | Sinofen 20 EC | AP-637 | Global Agrovet Limited |
| | 16 | Acmefen 20 EC | AP-642 | Chemolimpex Agro Limited |
| | 17 | Rajfen 20 EC | AP-707 | Padma Agro Sprayers Company |
| | 18 | Tiefen 20 EC | AP-724 | Mosco Marketing Company |
| | 19 | Devifen 20 EC | AP-740 | The Limit Agroproducts Limited |
| | 20 | Wenfen 20 EC | AP-741 | Home Pest Control |
| | 21 | Sunfen 20 EC | AP-742 | Naboti Corporation Limited |
| | 22 | Greenfen 20 EC | AP-882 | Green View Bangladesh |
| | 23 | Fensul 20 EC | AP-883 | Agrimax Bangladesh Limited |
| | 24 | Agafen 20 EC | AP-885 | Anika Enterprise |
| | 25 | Safen 20 EC | AP-886 | Sara Chemicals Limited |
| Esfenvalerate | 1 | Sumialpha 5 EC | AP-170 | Shetu Corporation Limited |
| Malathion | 1 | Fyfanon 57 EC | AP-10 | Shetu Agro Industries Limited |
| | 2 | Hilthion 57 EC | AP-37 | The Limit Agroproducts Limited |
| | 4 | Maladan 57 EC | AP-138 | Padma Oil Company Limited |
| | 5 | Malaton 57 EC | AP-153 | Corbel International Limited |
| | 6 | Syfanon 57 EC | AP-181 | Shetu Pesticides Limited |
| | 7 | Pesnon 57 EC | AP-189 | Sea Trade Fertilizer Limited |
| | 8 | Malamar 57 EC | AP-231 | Alpha Agro Limited |
| | 9 | Malataf 57 EC | AP-235 | Auto Equipment Limited |
| | 10 | Limithion 57 EC | AP-264 | ACI Formulations Limited |
| | 11 | Malatox 57 EC | AP-286 | Sea Trade Fertilizer Limited |
| | 12 | Malasun 57 EC | AP-287 | Servi Health |
| | 13 | Razthion 57 EC | AP-288 | ACI Formulations Limited |
| | 14 | Semtox 57 EC | AP-289 | Shetu Marketing Company |
| | 15 | Sumady 57 EC | AP-311 | McDonald Bangladesh (Pvt) Limited |
| | 16 | Palash 57 EC | AP-312 | Petrochem (Bangladesh) Limited |
| | 17 | Malason 57 EC | AP-313 | MAP Agro Industries Limited |
| | 18 | Ficom Malathion 57 EC | AP-329 | Alpha Agro Limited |
| | 19 | Malphos 57 EC | AP-330 | United Phosphorous (Bangladesh) Ltd |
| | 20 | Hyfanon 57 EC | AP-347 | Reximco Insecticides Limited |
| | 21 | Sicothion 57 EC | AP-535 | SAMP Limited |
| | 22 | Amcomala 57 EC | AP-677 | Atherton Imbros Company Limited |
| | 23 | Ashation 57 EC | AP-683 | Asia Trade International |
| | 24 | G.Thion 57 EC | AP-685 | Global Agrovet Limited |
| | 25 | Mapathion 57 EC | AP-688 | Agri Business International |
| | 26 | Topas 57 EC | AP-732 | M. Hossain Enterprise |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 27 | Redstar 57 EC | AP-733 | SAM Agro Chemical |
| | 28 | Sharmal 57 EC | AP-783 | Mamun Agro Products Limited |
| Isoprocarb/MIPC | 1 | Sopcin 75 WP | AP-285 | Shetu Pesticides Limited |
| | 2 | Mipcin 75 WP | AP-539 | Padma Oil Company Limited |
| Oxydematon methyl | 1 | Metasystox R 25 EC | AP-493 | Bayer CropScience Limited |
| Phenthoate | 1 | Cidial 50L | AP-124 | ACI Formulations Limited |
| | 2 | Cidial 5G | AP-139 | ACI Formulations Limited |
| | 3 | Kap 50 EC | AP-216 | Shetu Pesticides Limited |
| | 4 | Phaddy 50 EC | AP-306 | Auto Equipment Limited |
| | 5 | Edthoate 50 EC | AP-307 | Sea Trade Fertilizer Limited |
| | 6 | Amcosan 50 EC | AP-415 | Atherton Imbros Company Limited |
| | 7 | Grace 50 EC | AP-538 | Agrocare Limited |
| | 8 | Elsan 50 EC | AP-556 | Data Enterprises Limited |
| | 9 | Elsan 92 ULVC | AP-558 | Data Enterprises Limited |
| | 10 | Kiron 50 EC | AP-623 | Alpha Agro Limited |
| | 11 | Alert 50 EC | AP-648 | Bagnan Enterprises |
| | 12 | Ruby 50 EC | AP-827 | Naafco (Private) Limited |
| Propoxur | 1 | Acekro 20 EC | AP-318 | McDonald Bangladesh (Pvt) Limited |
| Permethrin | 1 | Pounce 1.5G | AP-419 | FMC International S.A. |
| Pymetrozine | 1 | Chess 25 WP | AP-365 | Syngenta Bangladesh Limited |
| Quinalphos | 1 | Kinalux 25 EC | AP-308 | United Phosphorous (Bangladesh) Ltd |
| | 2 | Corolux 25 EC | AP-391 | Corbel International Limited |
| | 3 | Debiquine 25 EC | AP-509 | The Limit Agroproducts Limited |
| | 4 | Sinolux 25 EC | AP-517 | Global Agrovet Limited |
| | 5 | Quilux 25 EC | AP-536 | Reximco Insecticides Limited |
| | 6 | Kanika 25 EC | AP-606 | SAM Agro Chemical |
| | 7 | Amcolux 25 EC | AP-656 | Atherton Imbros Company Limited |
| | 8 | Mimlux 25 EC | AP-788 | Mimpex Agrochemical Limited |
| | 9 | Bailux 25 EC | AP-789 | Bangladesh Agricultural Industries |
| | 10 | Dhanulux 25 EC | AP-835 | Agro Business Support Limited |
| | 11 | Agrilux 25 EC` | AP-892 | M. Hossain Enterprise Limited |
| | 12 | Wenquin 25 EC | AP-898 | Rahman Pesticide & Chemical |
| Trichlorfon | 1 | Dipterex 80 SP | AP-561 | Haychem (Bangladesh) Limited |
| | 2 | Dipterex SL 50 | AP-256 | Haychem (Bangladesh) Limited |
| | 3 | Cekufon 80 SP | AP-257 | Shetu Pesticides Limited |
| Fipronil | 1 | Regent 3GR | AP-497 | BASF Bangladesh Limited |
| | 2 | Regent 50 SC | AP-498 | BASF Bangladesh Limited |
| | 3 | Longent 3GR | AP-682 | Home Pest Control |
| | 4 | Goolee 3GR | AP-778 | ACI Formulations Limited |
| | 5 | Goolee 50 SC | AP-779 | ACI Formulations Limited |
| | 6 | Focus 50 SC | AP-828 | Auto Crop Care Limited |
| Imidaclorpid | 1 | Gaucho 70 WS | AP-366 | Haychem (Bangladesh) Limited |
| | 2 | Admire 200 SL | AP-486 | Bayer CropScience Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 3 | Imitaf 200 SL | AP-449 | Auto Equipment Limited |
| | 4 | Tiddo 200 SL | AP-468 | ACI Formulations Limited |
| | 5 | Empire 20 SL | AP-780 | Naboti Corporation Limited |
| | 6 | Bildor 20 SL | AP-781 | Corbel International Limited |
| | 7 | Power Sun 20 SL | AP-824 | Sun-Seed Pesticides |
| | 8 | Limida 17.8 SL | AP-832 | The Limit Agroproducts Limited |
| | 9 | Bidder 20 SL | AP-838 | Maitri Agro Industries |
| | 10 | Rally 20 SL | AP-877 | Agri Business International |
| Thiamethoxam | 1 | Actara 25 WG | AP-428 | Syngenta Bangladesh Limited |
| | 2 | Cruizer 70 WS | AP-429 | Syngenta Bangladesh Limited |
| Acetamipirid | 1 | Platinum 20 SP | AP-826 | ACI Formulations Limited |
| Emamectin Benzoate | 1 | Proclaim 5 SG | AP-868 | Syngenta Bangladesh Limited |
| Abernectin | 1 | Vertimec 1.8 EC | AP-890 | Syngenta Bangladesh Limited |
| | 2 | Abom 1.8 EC | AP-891 | Polymar Agro Industries Limited |
| Amitraz | 1 | Amatic 25 EC | AP-903 | Naboti Corporation Limited |
| Matrine | 1 | Baicao No.1 | AP-921 | Isthmus (Pvt) Limited |

## 5.2 List of registered fungicide

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Carbendazim | 1 | Bavistin DF | AP-176 | BASF Bangladesh Limited |
| | 2 | Knowin 50 WP | AP-241 | McDonald Bangladesh (Pvt.) Ltd. |
| | 3 | Shincar 50 WP | AP-355 | Omnichem Limited |
| | 4 | Aimcozim 50 WP | AP-375 | ACI Formulations Limited |
| | 5 | Agben 50%F | AP-439 | A-Intraco (Bangladesh) Limited |
| | 6 | Forastin 50 WP | AP-511 | Shetu Pesticides Limited |
| | 7 | Genuine 50 WP | AP-531 | SAM Agro Chemical |
| | 8 | Cindazim 50 WP | AP-627 | Shetu Corporation Limited |
| | 9 | Nayan 50 WP | AP-720 | Anika Enterprise |
| | 10 | Zimper 50 WP | AP-725 | Prime Agro Limited |
| | 11 | Agridazim 50 WP | AP-728 | Agri Business International |
| | 12 | Evazim 50 WP | AP-729 | E H & Agrovet Limited |
| | 13 | Vulcan 50 WP | AP-730 | Atherton Imbros Company Limited |
| | 14 | Corozim 50 WP | AP-751 | Corbel International Limited |
| | 15 | Edvistin 50 WP | AP-752 | Bony Enterprise |
| | 16 | Haydazim 50 WP | AP-753 | Haychem (Bangladesh) Limited |
| | 17 | Seadazim 50 WP | AP-754 | Sea Trade Fertilizer Limited |
| | 18 | Massive 50 WP | AP755 | Mosco Marketing Company |
| | 19 | Goldazim 500 SC | AP-756 | Square Pharmaceuticals Limited |
| | 20 | Carbozim 50 WP | AP-757 | Reximco Insecticides Limited |
| | 21 | Bendazim 50 WP | AP-758 | National AgriCare Bangladesh |
| | 22 | Ecozim 50 WP | AP-856 | East West Chemicals Limited |
| Carboxin+Thiram | 1 | Vitavax 200B | AP-559 | Pioneer Equipment & Chemical Co. |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Difenoconazole | 1 | Score 250 EC | AP-384 | Syngenta Bangladesh Limited |
| Edifenphos | 1 | Edifen 50 EC | AP-268 | Shetu Pesticides Limited |
| | 2 | Hinosan EC 50 | AP-491 | Bayer CropScience Limited |
| Copper oxychloride | 1 | Cupravit 50 WP | AP-489 | Bayer CropScience Limited |
| | 2 | Sunvit 50 WP | AP-527 | McDonald Bangladesh (Pvt.) Ltd. |
| | 3 | Sulcox 50 WP | AP-528 | Haychem (Bangladesh) Limited |
| | 4 | Oxivit 50 WP | AP-616 | SAM Agro Chemical |
| | 5 | Copper 50 WP | AP-703 | Reximco Insecticides Limited |
| | 6 | Blitox 50 WP | AP-704 | Auto Equipment Limited |
| | 7 | Haymoxy 50 WP | AP-715 | Haychem (Bangladesh) Limited |
| | 8 | Oxicob 50 WP | AP-791 | Asia Trade International |
| | 9 | Acmccop 50 WP | AP-875 | Chemolimpex Agro Limited |
| Iprodione | 1 | Rovral 50 WP | AP-143 | Bayer CropScience Limited |
| Mancozeb | 1 | Nemispore 80WP | AP-166 | ACI Formulations Limited |
| | 2 | Pencozeb 80 WP | AP-242 | Shetu Pesticides Limited |
| | 3 | Indofil M 45 | AP-272 | Auto Equipment Limited |
| | 4 | Edcozeb 80 WP | AP-273 | Sea Trade Fertilizer Limited |
| | 5 | Razland 80 WP | AP-351 | ACI Formulations Limited |
| | 6 | Suncozeb 80 WP | AP-352 | Shetu Corporation Limited |
| | 7 | Cozeb 80 WP | AP-448 | Alpha Agro Limited |
| | 8 | Golden M 45 | AP-464 | Atherton Imbros Company Limited |
| | 9 | McZidan 80 WP | AP-465 | McDonald Bangladesh (Pvt.) Ltd. |
| | 10 | Filthane M 45 | AP-504 | Agritech |
| | 11 | LM 45 | AP-526 | The Limit Agroproducts Limited |
| | 12 | Dithane M 45 | AP-546 | Bayer CropScience Limited |
| | | | AP-547 | |
| | 13 | Agrizeb 80 WP | AP-603 | Square Pharmaceuticals Limited |
| | 14 | Vondozeb 42 SC | AP-608 | Naafco Private Limited |
| | 15 | Haymancozeb 80 WP | AP-610 | Haychem (Bangladesh) Limited |
| | 16 | Shinmazeb 80 WP | AP-615 | Petrochem (Bangladesh) Limited |
| | 17 | Mosum 80 WP | AP-626 | Axil Life Sciences Limited |
| | 18 | Corozeb 80 WP | AP-711 | Corbel Chemical International Ltd. |
| | 19 | Flywin HT | AP-712 | Auto Equipment Limited |
| | 20 | Dencozeb 80 WP | AP-718 | Reximco Insecticides Limited |
| | 21 | Pharzeb 80 WP | AP-784 | Pharma & Farm |
| | 22 | Uthane 80 WP | AP-785 | United Phosphorus (Bangladesh) Ltd. |
| | 23 | Manner M-45 | AP-789 | SAMP Limited |
| | 24 | Mancovit 80 WP | AP-787 | Haychem (Bangladesh) Limited |
| | 25 | M-Power 80 WP | AP-809 | Maiti Agro Industries |
| | 26 | Baizeb 80 WP | AP-859 | Bangladesh Agricultural Industries |
| | 27 | Pestcozeb 80 WP | AP-861 | Home Pest Control |
| Mancozeb+ Canendazim | 1 | Companion | AP-664 | Auto Equipment Limited |
| Tridemorph | 1 | Calixin 75 EC | AP-550 | BASF Bangladesh Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Metiram complex | 1 | Polyram DF | AP-206 | BASF Bangladesh Limited |
| Propiconazole | 1 | Tilt 250 EC | AP-172 | Syngenta Bangladesh Limited |
| | 2 | Akonazol 250 EC | AP-467 | McDonald Bangladesh (Pvt) Ltd. |
| | 3 | Protaf 250 EC | AP-599 | Bagnan Enterprise |
| | 4 | Corozole 250 EC | AP-600 | Corbel Chemical Industries Limited |
| | 5 | Eva-Eilt 25 EC | AP-601 | E H & Agrovet Limited |
| | 6 | Filt 250 EC | AP-602 | Agrocare Limited |
| | 7 | Proud 25 EC | AP-609 | ACI Formulations Limited |
| | 8 | Essy 250 EC | AP-625 | Alpha Agro Limited |
| | 9 | Steel 250 EC | AP-666 | Sara Chemicals Limited |
| | 10 | Green Care 250 EC | AP-667 | Vegan Agro Limited |
| | 11 | Anti-Sika 250 EC | AP-709 | National AgriCare Bangladesh |
| | 12 | Sungold 25 EC | AP-710 | Sun-Seed Pesticides |
| | 13 | Proven 250 EC | AP-714 | SAMP Limited |
| | 14 | Propicon 250 EC | AP-719 | Shetu Pesticides Limited |
| | 15 | Mimglod 25 EC | AP-857 | Mimpex Agro Chemicals Limited |
| | 16 | Shadid 250 EC | AP-860 | Intefa |
| | 17 | Tide 250 EC | AP-862 | SARK Bangladesh Limited |
| | 18 | Royal 25 EC | AP-918 | Anika Enterprise |
| Propineb | 1 | Antracol 70 WP | AP-487 | Bayer CropScience Limited |
| Propineb+ Iprovalicarb | 1 | Melody Duo 66.8 WP | AP-501 | Bayer CropScience Limited |
| Benalaxyl+ Mancozeb | 1 | Galben M | AP-374 | ACI Limited |
| Metalaxyl+ Cymoxanil | 1 | Sunoxanil | AP-796 | McDonald Bangladesh (Pvt) Limited |
| Metalaxyl M+Mancozeb | 1 | Ridomil Gold MZ 68 WP | AP-377 | Syngenta Bangladesh Limited |
| Mancozeb + Metalaxyl | 2 | Sundomil 72 WP | AP-394 | Shetu Corporation Limited |
| | 3 | Zhe-Metalex 72 WP | AP-412 | Sea Trade Fertilizer Limited |
| | 4 | Vitamyl 72 MZ | AP-445 | Shetu Pesticides Limited |
| | 5 | Coromil MZ 72 WP | AP-446 | Corbel International Limited |
| | 6 | Metaril 72 WP | AP-447 | Auto Equipment Limited |
| | 7 | Unilux 72% WP | AP-452 | United Phosphorous (Bangladesh) Ltd |
| | 8 | Greenland 72 WP | AP-604 | Vegan Agro Limited |
| | 9 | Haymaxyl MZ 72 WP | AP-611 | Haychem (Bangladesh) Limited |
| | 10 | Nuben 72 WP | AP- 612 | ACI Formulations Limited |
| | 11 | Polyman 72 WP | AP-613 | Alpha Agro Limited |
| | 12 | Popular 72 WP | AP-614 | Global Agrovet Limited |
| | 13 | Baimyl 72 WP | AP-790 | Bangladesh Agricultural Industries |
| | 14 | Censor MZ 72WP | AP-795 | Naboti Corporation Limited |
| | 15 | Sunmil MZ 72 WP | AP-797 | Sun-Seed Pesticides |
| | 16 | Edmeta 72 WP | AP-798 | Nokon Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 17 | Metazeb 72 WP | AP-799 | Mamun Agro Products Limited |
| | 18 | Evamil 72 WP | AP-800 | E. H. Agrovet Limited |
| | 19 | Nazah 72 WP | AP-801 | Intefa |
| | 20 | Way 72 WP | AP-802 | Green View Bangladesh |
| | 21 | Maxzil 72 WP | AP-803 | Eon Agro Industries Limited |
| | 22 | Rancozeb | AP-804 | N. S. Group |
| | 23 | Amcomyl 72 WP | AP-808 | Atherton Imbros Company Limited |
| | 24 | Orion 72 WP | AP-863 | Maitri Agro Industries |
| | 25 | Metaplus 72 WP | AP-919 | Rahman Pesticide & Chemical |
| Thiophanet methyl+Thiram | 1 | Homai 80 WP | AP-179 | Data Enterprises Limited |
| Thiophanate-methyl | 1 | Topsin M 70 WP | AP-193 | Data Enterprises Limited |
| | 2 | Chemophane 70 WP | AP-251 | Chemsfil (Bangladesh) Limited |
| Dazomet | 1 | Basamid Granular | AP-205 | BASF Bangladesh Limited |
| Metalaxyl | 1 | Metataf 25 WP | AP-417 | Auto Equipment Limited |
| Dimethomorph+Mancozeb | 1 | Acrobat MZ | AP-353 | BASF Bangladesh Limited |
| Copper hydroxide | 1 | Champion 77 WP | AP-354 | Petrochem (Bangladesh) Limited |
| | 2 | Dolphin 77 WP | AP-716 | MAP Agro Industries Limited |
| | 3 | Hydroob 77 WP | AP-792 | Asia Trade International |
| Pyroquilon | 1 | Fongorene 50 WP | AP-203 | Syngenta Bangladesh Limited |
| Hexaconazol | 1 | Contaf 5 EC | AP-460 | Auto Equipment Limited |
| | 2 | Anvil 5 SC | AP-472 | ACI Limited |
| | 3 | Hayconazol 5 EC | AP-713 | Haychem (Bangladesh) Limited |
| | 4 | Force 5 EC | AP-717 | The Limit Agroproducts Limited |
| | 5 | Control 5 EC | AP-782 | SARK Bangladesh Limited |
| | 6 | Paragon 5 EC | AP-858 | Agro Continent Bangladesh |
| | 7 | Titan 5 EC | AP-895 | Larsen Chemical Industries Limited |
| | 8 | Megazole 5 EC | AP-917 | Mosco Marketing Company |
| Tebuconazole | 1 | Folicur EW 250 | AP-524 | Bayer CropScience Limited |
| Phenamidone+Mancozeb | 1 | Secure 600 WP | AP-628 | Bayer CropScience Limited |
| Isoprothiolane | 1 | Fuji One 40 EC | AP-665 | Auto Equipment Limited |
| Zineb | 1 | Indofil-Z-78 | AP-805 | Auto Equipment Limited |
| Quaternary Ammoniam | 1 | Timsen | AP-806 | Eon Agro Industries Limited |

## 5.3 List of registered herbicide

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Glyphosate | 1 | Roundup | AP-337 | Monsanto Bangladesh Limited |
| | 2 | Pillaround | AP-213 | Shetu Pesticides Limited |
| | 3 | Forwasate | AP-267 | Naafco (Private) Limited |
| | 4 | Comsate | AP-296 | Omnichem Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 5 | Biestercine | AP-297 | Alpha Agro Limited |
| | 6 | Edround 41 EC | AP-298 | Sea Trade Fertilizer Limited |
| | 7 | Ridweed RP | AP-319 | McDonald Bangladesh (Pvt) Limited |
| | 8 | Glycel | AP-333 | Auto Equipment Limited |
| | 9 | Kleenup 480 | AP-334 | Shetu Corporation Limited |
| | 10 | Asset | AP-364 | Agrodev United |
| | 11 | Linphosate 480SL | AP-399 | Petrochem (Bangladesh) Limited |
| Glyphosate Trimesium | 12 | Touchdown | AP-404 | Syngenta Bangladesh Limited |
| Glyphosate | 13 | Amcoround | AP-411 | Atherton Imbros Company Limited |
| | 14 | Pararound 41 EC | AP-591 | Parallel Corporation |
| | 15 | Sun-UP | AP-669 | ACI Formulations Limited |
| | 16 | Durdanta 480 SL | AP-701 | SAM Agro Chemical |
| | 17 | Touchdown HiTech 500SL | AP-873 | Syngenta Bangladesh Limited |
| | 18 | Limsate 41 SL | AP-894 | The Limi Agroproducts Limited |
| | 19 | Glyphar 41 SL | AP-896 | Pharma & Firm |
| | 20 | Roundphos 48 SL | AP-897 | Naboti Corporation Limited |
| | 21 | Eon-phosate 41 SL | AP-899 | Eon Agro Industries Limited |
| | 22 | Glyfocel 41 SL | AP-900 | Haychem (Bangladesh) Limited |
| 2,4-D | 1 | U 46 D Fluid | AP-110 | BASF Bangladesh Limited |
| | 2 | Kem Amin 58 SL | AP-482 | Hossain Enterprises C.C. Ltd |
| | 3 | Fielder | AP-494 | ACI Formulations Limited |
| | 4 | 2,4-D Amine | AP-545 | Bayer CropScience Limited |
| | 5 | Weedkill 480 SL | AP-702 | SAM Agro Chemical |
| Paraquat | 1 | Gramoxone | AP-90 | Syngenta Bangladesh Limited |
| | 2 | Pillaroxone | AP-320 | Shetu Pesticides Limited |
| | 3 | Paraxone | AP-495 | ACI Formulations Limited |
| Oxadiazon | 1 | Ronstar 25 EC | AP-177 | Bayer CropScience Limited |
| | 2 | Ronstar 25 EC | AP-362 | Bayer CropScience Limited |
| | 3 | Corostar 25 EC | AP-576 | Corbel Chemical International Ltd. |
| | 4 | Oxastar 25 EC | AP-578 | Shetu Pesticides Limited |
| | 5 | Longstar 25 EC | AP-584 | Sea Trade Edgro Limited |
| | 6 | Miracle 25 EC | AP-691 | Global Agrovet Limited |
| | 7 | Amcostar 25 EC | AP-695 | Atherton Imbros Company Limited |
| | 8 | Activar 25 EC | AP-698 | McDonald Bangladesh (Pvt) Limited |
| | 9 | Weeder 25 EC | AP-854 | Nationa AgriCare Bangladesh |
| Glufosinate-ammonium | 1 | Basta 15 SL | AP-265 | Bayer CropScience Limited |
| Anilofos | 1 | Arozin 30 EC | AP-383 | Bayer CropScience Limited |
| Butachlor | 1 | Golteer 5G | AP-363 | Auto Equipment Limited |
| | 2 | Machete 5G | AP-402 | Monsanto Bangladesh Limited |
| | 3 | Aimchlor 5G | AP-403 | ACI Formulations Limited |
| | 4 | Shinbuta 5G | AP-469 | Petrochem (Bangladesh) Limited |
| | 5 | Butabel 5G | AP-470 | Corbel International Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 6 | Cannon 5G | AP-471 | SAM Agro Chemical |
| | 7 | Vitachete 5G | AP-577 | Shetu Pesticides Limited |
| | 8 | Amcobuta 5G | AP-692 | Atherton Imbros Company Limited |
| | 9 | Butakill 5G | AP-696 | Sea Trade Fertilizer Limited |
| | 10 | Baibuta 5G | AP-841 | Bangladesh Agricultual Industries |
| | 11 | Betaplus 5G | AP-844 | Home Pest Control |
| | 12 | Fast Mix EW | AP-845 | Auto Equipment Limited |
| | 13 | Nuchlor 5G | AP-846 | ACI Formulations Limited |
| | 14 | Omnichlor 5G | AP-849 | Omnichem Limited |
| | 15 | Avant 5G | 850 | Eon Agro Industries Limited |
| Cinmethylin | 1 | Argold 10 EC | AP-409 | BASF Bangladesh Limited |
| Cinosulfurn | 1 | Setoff 20 WG | AP-361 | Syngenta Bangladesh Limited |
| Carfentrazone-ethyl | 1 | Aim 40 WG | AP-410 | FMC International S.A. |
| Pretilachlor | 1 | Rifit 500 EC | AP-408 | Syngenta Bangladesh Limited |
| | 2 | Saaf 500 EC | AP-690 | Global Agrovet Limited |
| | 3 | Longfit 500 EC | AP-693 | Home Pest Control |
| | 4 | Commit 500 EC | AP-694 | Bagnan Enterprises |
| | 5 | Superheat 500 EC | AP-697 | ACI Formulations Limited |
| | 6 | Clear 500 EC | AP-699 | Corbel Chemical International Ltd. |
| | 7 | Edchlor 500 EC | AP-842 | Nokon Limited |
| | 8 | Hunter 500 EC | AP-843 | Agrocare Limited |
| | 9 | Silah 500 EC | AP-847 | Intefa |
| | 10 | Richlor 500 EC | AP-848 | Aranya Crop Care Limited |
| | 11 | SARK KILL 500 EC | AP-851 | Sara Chemicals Limited |
| | 12 | Check 500 EC | AP-852 | East West Chemicals Limited |
| | 12 | Top 500 EC | AP-853 | Shetu Pesticides Limited |
| | 13 | Mimfit 500 EC | AP-855 | Mimpex Agro Chemicals Limited |
| Glyphosate+2,4-D | 1 | Bimaster 240/124AS | AP-496 | Shetu Agro Industries Limited |
| Pyazosulfuron-ethyl | 1 | Sirius 10 WP | AP-570 | Alpha Agro Limited |
| MCPA-500 | 1 | MCPA 500 | AP-573 | Shetu Corporation Limited |
| | 2 | Agroxone | AP-700 | Haychem (Bangladesh) Limited |
| Ethoxysulfuran | 1 | Sunrice 150 WG | AP-579 | Bayer CropScience Limited |
| Triosulfurn+Dicamba | 1 | Lintur 70 WG | AP-633 | Syngenta Bangladesh Limited |

## 5.4 List of registered miticide

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Bromopropylate | 1 | Nerot 500 EC | AP-398 | Hossain Enterprises C.C.Limited |
| | 2 | Neoron 500 EC | AP-551 | Syngenta Bangladesh Limited |
| Dicofol | 1 | Dicofol 18.5 EC | AP-359 | McDonald Bangladesh (Pvt) Ltd. |
| | 2 | Kelthane MF | AP-543 | Bayer CropScience Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Ethion | 1 | Sethion 46.5 EC | AP-295 | Shetu Pesticides Limited |
| | 2 | Ethion 46.5 EC | AP-542 | FMC International S.A. |
| | 3 | Bilshot M 46.5 EC | AP-586 | Pharma & Farm |
| | 4 | Ethiosul 46.5 EC | AP-777 | Hossain Enterprise C.C.Limited |
| Sulphur | 1 | Microthiol Special 80 WP | AP-252 | Shetu Pesticides Limited |
| | 2 | Limi Sulphur 80 WP | AP-292 | The Limit Agrorproducts Limited |
| | 3 | Sulphex 80 WP | AP-356 | Auto Equipment Limited |
| | 4 | Sulphotox 80 WP | AP-357 | ACI Formulations Limited |
| | 5 | Wettasul 80 WP | AP-358 | Alpha Agro Limited |
| | 6 | McSulphur 80 WP | AP-367 | McDonald Bangladesh (Pvt.) Limited |
| | 7 | Ronovit 80 WG | AP-388 | Bayer CropScience Limited |
| | 8 | Cosavet DF | AP-397 | Alpha Agro Limited |
| | 9 | Sulphur 80 WP | AP-392 | Reximco Insecticides Limited |
| | 10 | Sulfolac 80% WG | AP-413 | Haychem (Bangladesh) Limited |
| | 11 | Filvit 80 WG | AP-480 | Agritech |
| | 12 | Haysulf DF 80% | AP-481 | Haychem (Bangladesh) Limited |
| | 13 | Phytovit DF 80 | AP-510 | Axil Life Sciences Limited |
| | 14 | Vitasul 80 WP | AP-513 | Padma Agro Sprayers Company |
| | 15 | Prosulf 80% DF | AP-529 | Haychem (Bangladesh) Limited |
| | 16 | Kumulus DF | AP-548 | BASF Bangladesh Limited |
| | 17 | Thiovit 80 WG | AP-552 | Syngenta Bangladesh Limited |
| | 18 | Corovit 80 WG | AP-562 | Corbel Chemical Industries Limited |
| | 19 | Agrovet DF | AP-563 | Atherton Imbros Company Limited |
| | 20 | Gayvet 80 DF | AP-659 | Square Pharmaceuticals Limited |
| | 21 | Petsul 80 WP | AP-660 | Home Pest Control |
| | 22 | Sulvit 80 WP | AP-706 | Prime Ago Limited |
| | 23 | Sulfochem 80 WDG | AP-734 | Haychem (Bangladesh) Limited |
| | 24 | Multiplex 80 WP | AP-735 | Bangladesh Agricultural Industries |
| | 25 | Comet 80 WP | AP-736 | Global Agrovet Limited |
| | 26 | Mycosul 80% WDG | AP-744 | Mamun Agro Products Limited |
| | 27 | Supervit 80 DF | AP-745 | Larsen Chemical Industries Limited |
| | 28 | Insaf 80 WP | AP-746 | United Phosphorus (Bangladesh) Ltd |
| | 29 | Monovit 80 WP | AP-864 | Mimpex Agro Chemicals |
| | 30 | Aimcoflo 80 WG | AP-869 | ACI Formulations Limited |
| | 31 | Orovit 80 WG | AP-870 | Oroni International Limited |
| | 32 | Agrisulf 80 DF | AP-884 | Agrimix Bangladesh Limited |
| | 33 | Nanthion 80 DF | AP-887 | Hossain Enterprise C.C.Limited |
| | 34 | Edsulf 80 DF | AP-889 | Nokon Limited |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Propargite | 1 | Omite 57 EC | AP-184 | Shetu Corporation Limited |
| | 2 | Entimite 57 EC | AP-294 | Chemsfil (Bangladesh) Limited |
| | 3 | Sumite 57 EC | AP-360 | McDonald Bangladesh (Pvt) Limited |
| Fenpropathrin | 1 | Denitol 10 EC | AP-291 | Shetu Corporation Limited |
| Tetradifon | 1 | Tedion V 18 EC | AP-173 | Hossain Enterprise C.C. Limited |

## 5.5 List of registered rodenticides

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Bromadiolone | 1 | Lanirat | AP-182 | Novartis (Bangladesh) Limited |
| | 2 | Bromapoint | AP-271 | Shetu Pesticides Limited |
| | 3 | Retox | AP-430 | Auto Equipment Limited |
| Brodifacoum | 1 | Klerat | AP-183 | Syngenta Bangladesh Limited |
| Coumatetralyl | 1 | Recumin Tracking Powder | AP-35 | Haychem (Bangladesh) Limited |
| Diapesinon | 1 | Yasodiyan | AP-270 | Luna Enterprises |
| Zinc Phosphide | 1 | Zinc Phosphide | AP-17 | United Phosphorous (Bangladesh) Ltd |
| | 2 | Zinc Phosphide | AP-370 | Agrani Traders |
| | 3 | Sinphos | AP-458 | Panchi Corporation Ltd |
| | 4 | Zilfide 80% | AP-739 | Gourab Industries Limited |
| | 5 | Agri-Kill | AP-914 | Agri Business International |
| | 6 | Commando | AP-915 | Haychem (Bangladesh) Limited |
| | 7 | Ratil 80% | AP-916 | Mars International |
| Flocoumafen | 1 | Storm WBB 0.005% | AP-299 | BASF Bangladesh Limited |

## 5.6 List of registered stored grain pests' insecticides

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| Pirimiphos methyl | 1 | Silosan 50 EC | AP-553 | Syngenta Bangladesh Limited |
| | 2 | Super Guard 50 EC | AP-580 | ACI Limited |
| | 3 | Edmethyl 50 EC | AP-906 | Bony Enterprise |
| | 4 | Sirin 50 EC | AP-907 | New Look |
| | 5 | Primicare 50 EC | AP-912 | Agrocare Limited |
| Alumunium Phosphide | 1 | Phostoxine 57% | AP-122 | Brodway Chapman |
| | 2 | Celphos 57% | AP-125 | Exil Trading Company |
| | 3 | Agriphos 57% | AP-174 | Nokon Limited |
| | 4 | Alumphos 57% | AP-253 | McDonald Bangladesh (Pvt) Ltd. |
| | 5 | Quik-Fume 57% | AP-254 | Spark Limited |
| | 6 | Synfume 57% | AP-406 | Panchi Corporation Ltd |
| | 7 | Fumitox 56% | AP-530 | National AgriCare Bangladesh |

| Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|
| | 8 | Alphide 56% | AP-581 | New Look |
| | 9 | Alcor 56% | AP-661 | Corbel Chemical International Limited |
| | 10 | Gilphos 56% | AP-662 | Gouwrab Industries Limited |
| | 11 | Synphos 56% | AP-663 | Mars International |
| | 12 | Fumiphos 56% | AP-738 | Sun-Seed Pesticides |
| | 13 | Tinder 56% | AP-904 | Maitri Agro Industries |
| | 14 | Green Fune 56% | AP-905 | Green View Bangladesh |
| | 15 | Alphos 56% | AP-908 | Prime Agro Limited] |
| | 16 | AS Toxin 56% | AP-909 | Agrocare Limited |
| | 17 | Quick bun 56% | AP-910 | Anika Enterprise |
| | 18 | Sarfium 56% | AP-911 | SAR Trading |
| | 19 | Hayphos 56% | AP-913 | Haychem (Bangladesh) Ltd. |

## 5.7 List of registered public health pesticides

| Sl. No. | Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|---|
| 1 | S. Bioallethrin+ Permethrin | 1 | Mortein Liquid Insecticide | PHP-02 | Reckitt Benckiser (Bangladesh) Limited |
| 2 | Permethrin, Bio-allethrin | 1 | Black Cat P Aerosol | PHP-51 | Agro Mark |
| | Tetramethrin | | | | |
| 3 | Tetramethrin, Permethrin | 1 | Finistox Aerosol | PHP-39 | Standard Finis Oil Company |
| | Pipernyl Butoxide | | | | |
| 4 | Permethrin+ Tetramethrin | 1 | Globe Aerosol Insecticide | PHP-120 | Globe Insecticides Limited |
| 5 | S. Bioallethrin+ Permethrin | 1 | Sico Flying Insecticide | PHP-18 | Sajeeb Industrial Corporation |
| | | 2 | Flyban Non Gas spray | PHP-38 | Fly Ban Insecticide Limited |
| | | 3 | ACI Aerosol Insect Spray | PHP-08 | ACI Formulations Limited |
| | | 4 | Mortein Aerosol Insecticide | PHP-53 | Reckitt Benckiser (Bangladesh) Limited |
| 6 | S. Bioallethrin+ Permethrin | 1 | Knockout Liquid Insect Sprya | PHP-28 | Shetu Pesticides Limited |
| | Pipernyl Butoxide | 2 | Resigen 50 EC | PHP-194 | Bayer CropScience Limited |
| 7 | Pynamine Fort | 1 | Sun Flower Mosquito Mat | PHP-97 | Oram Limited |
| | | 2 | Alpha Mosquito Coil | PHP-176 | Alpha Agro Chemicals |
| 8 | Pynamine Fort + Gokilat | 1 | Safe Gourd | PHP-170 | Safeway Pest Control |
| 9 | Pynamine Fort + d-allethrin | 1 | Mortein Liquid Vaporiser | PHP-132 | Reckitt Benckiser (Bangladesh) Limited |

| Sl. No. | Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|---|
| 10 | Propoxour+ Tetramethrin | 1 | Nokon Aerosol | PHP-68 | Nokon Limited |
| | Piperanyl Butoxide | | ? | ? | ? |
| 11 | Fenitrothion | 1 | Sumigaurd 50 EC | PHP-25 | Shetu Corporation Limited |
| | | 2 | Limitox 50 EC | PHP-23 | The Limit Agrorpoducts Ltd. |
| | | 3 | Brute 50 EC | PHP-70 | Shetu Pesticides Limited |
| | | 4 | Fenitrokil | PHP-199 | Alfa Zeta Crop |
| 12 | Deltamethrin | 1 | IBIS Marvelous Insecticides Chalk | PHP-33 | Meghdut Business Centre |
| | | 2 | Good Night Chalk | PHP-130 | Godrej Sara Lee (Bangladesh) Limited |
| | | 3 | Delete 2.5 EC | PHP-162 | ACI Formulations Limited |
| | | 4 | Pali 1% SC | PHP-173 | J. B. Enterprises |
| | | 5 | Nobothrin 2.5 EC | PHP-174 | Nobin Traders |
| | | 6 | Limesis 2.8 EC | PHP-188 | The Limit Agroproducts Ltd. |
| | | 7 | Cislin 2.5 EC | PHP-192 | Bayer CropScience Limited |
| | | 8 | Crackdown | PHP-193 | Bayer CropScience Limited |
| 13 | Permethrin | 1 | Finis Insect Powder | PHP-59 | Standard Finis Oil Company |
| | | 2 | Coopex 10 EC | PHP-190 | Bayer CropScience Limited |
| | | 3 | Coopex 25 WP | PHP-191 | Bayer CropScience Limited |
| | | 4 | Peripel | PHP-195 | Bayer CropScience Limited |
| 14 | Tetramethrin | 1 | Duracide RS 15 | PHP-35 | The Limit Agroproducts Ltd. |
| 15 | Azamethiphos | 1 | Knockroach 1 RB | PHP-49 | Novartis (Bangladesh) Ltd. |
| 16 | Chlorpyriphos | 1 | McFus 20 EC | PHP-67 | McDoandl Bangladesh (Pvt) Limited |
| | | 2 | Lithafos 20 EC | PHP-96 | Shetu Pesticides Limited |
| | | 3 | Limban 20 EC | PHP-102 | The Limit Agroproducts Ltd. |
| | | 4 | Aciphos 20 EC | PHP-123 | ACI Limited |
| 17 | Pirimiphos methyl | 1 | Actellic 50 EC | PHP-10 | Syngenta (Bangladesh) Ltd. |
| | | 2 | Cleaner 50 EC | PHP-175 | ACI Formulations Limited |
| 18 | Temephos | 1 | Abate 50 EC | PHP-117 | BASF Bangladesh Limited |
| | | 2 | Abate 15 G | PHP-118 | BASF Bangladesh Limited |
| | | 3 | Limbate 50 EC | PHP-163 | The Limit Agroproducts Ltd. |
| | | 4 | Tenor 50 EC | PHP-161 | MAP Agro Industries Limited |
| | | 5 | Larkil 50 EC | PHP-164 | Axil Agro Chemicals Limited |
| | | 6 | Missile 50 EC | PHP-184 | ACI Formulations Limited |
| 19 | Diazinon | 1 | Neocidol 600 EC | PHP-19 | Novartis (Bangladesh) Ltd. |
| | | 2 | Diazinon 60 EC | PHP-47 | Data Enterprises Limited |
| 20 | Phenthoate | 1 | Noback 50L | PHP-22 | ACI Formulations Limited |
| | | 2 | Semcor 50 EC | PHP-69 | Shetu Pesticides Limited |
| 21 | Alpha Cypermethrin | 1 | Fendona 5 WP | PHP-29 | BASF Bangladesh Limited |
| | | 2 | Fendona 10 EC | PHP-24 | BASF Bangladesh Limited |
| | | 3 | Fendona 1.5 SC | PHP-84 | BASF Bangladesh Limited |
| 22 | Propoxour | 1 | Acekro 20 EC | PHP-65 | McDoandl Bangladesh (Pvt) Limited |

| Sl. No. | Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|---|
| 23 | Cypermenhrin | 1 | Atamethrin 10 EC | PHP-71 | Shetu Pesticides Limited |
| | | 2 | Demon 10 EC | PHP-36 | Syngenta (Bangladesh) Ltd. |
| | | 3 | Cyperhealth 10 EC | PHP-91 | Servi Health |
| | | 4 | Unimethrin 10 EC | PHP-82 | United Phosphorus (Bangladesh) Limited |
| | | 5 | Panchi 10 EC | PHP-182 | Boni Enterprise |
| | | 6 | Keeper 10 EC | PHP-168 | ACI Formulations Limited |
| | | 7 | Devicyper 10 EC | PHP-185 | The Limit Agroproducts Ltd. |
| 24 | Fenthion | 1 | Edfen 50 EC | PHP-40 | Sea Trade Fertilizer Limited |
| 25 | Malathion | 1 | Solution 57 EC | PHP-64 | Shetu Pesticides Limited |
| | | 2 | Limisashta 57 EC | PHP-63 | The Limit Agroproducts Ltd. |
| | | 3 | Arrow 57 EC | PHP-62 | Shetu Corporation Limited |
| | | 4 | Malahealth 57 EC | PHP-83 | Servi Health |
| 26 | Malathion + Permethrin | 1 | Parmakil RFU | PHP-200 | Safeway Pest Coltroll |
| | | 2 | Parmakil Concentrate | PHP-201 | Safeway Pest Coltroll |
| 27 | Lambda Cyhalothrin | 1 | Icon 10 WP | PHP-80 | Syngenta (Bangladesh) Ltd. |
| | | 2 | Icon 2.5 EC | PHP-81 | Syngenta (Bangladesh) Ltd. |
| | | 3 | Shooter 2.5 EC | PHP-140 | ACI Formulations Limited |
| 28 | d-allethrin (Pynamine fort) | 1 | Globe Mosquito Coil | PHP-06 | Globe Insecticides Limited |
| | | 2 | A R S Mosquito Coil | PHP-16 | Globe Insecticides Limited |
| | | 3 | Sunflower Mosquito Coil | PHP-07 | Oram Limited |
| | | 4 | Cock Brand Mosquito Coil | PHP-14 | Cock Brand Mosquito Company Ltd |
| | | 5 | Bok Mosquito Coil | PHP-34 | Lalmai Chemical Works |
| | | 6 | Polar Brand Mosquito Coil | PHP-42 | Shanta Chemical Company |
| | | 7 | Lizard Brand Mosquito Coil | PHP-43 | Shiyuli Chemical Works |
| | | 8 | Spider Brand Mosquito Coil | PHP-44 | Rina Chemical Works |
| | | 9 | AC-7 Brand Mosquito Coil | PHP-45 | Alif Chemical Company |
| | | 10 | Eagle Brand Mosquito Coil | PHP-55 | Quazi Enterprises Limited |
| | | 11 | Tiger Head Brand Mosquito Coil | PHP-58 | Rahim Uddin Bharasha & Company |
| | | 12 | ACI Mosquito Coil | PHP-73 | ACI Formulations Limited |
| | | 13 | Diamond Brand Mosquito Coil | PHP-74 | New Era Steel Mills Ltd |
| | | 14 | Tir Brand Mosquito Coil | PHP-76 | Haroon Chemical Works |
| | | 15 | Shield Mosquito Coil | PHP-125 | Regent Corporation Limited |

| Sl. No. | Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|---|
| | | 16 | Akash Pori Brand Mosquito Coil | PHP-107 | Yakub and Mahbub Chemical Works |
| | | 17 | ATN Brand Mosquito Coil | PHP-108 | ATN Chemical Industries |
| | | 18 | Quickknock Mosquito Coil | PHP-109 | Novartis (Bangladesh) Limited |
| | | 19 | Puma Brand Mosquito Coil | PHP-110 | R.R. Chemical Industries (Pvt) Limited |
| | | 20 | Jamuna Mosquito Coil | PHP-106 | S. R. Chemical Works |
| | | 21 | Tara Mosquito Coil | PHP-105 | Standard Finis Oil Company |
| | | 22 | Popular Brand Mosquito Coil | PHP-98 | Amin Manufacturing Company Limited |
| | | 23 | Blue Diamond Mosquito Coil | PHP-88 | Chalk Pencil & Chemical Works |
| | | 24 | Leader Mosquito Coil | PHP-134 | Oram Limited |
| | | 25 | Stop Brand Mosquito Coil | PHP-139 | Globe-Janakantha Shilpa Paribar Limited |
| | | 26 | Aroma Mosquito Coil | PHP-165 | Ruma Chemical Company |
| | | 27 | Family Super Mosquito Coil | PHP-166 | Joy Chemical Company |
| 29 | d-trans allethrin | 1 | Mortein King Extra Mosquito Coil | PHP-152 | Reckitt Benckiser (Bangladesh) Limited |
| | | 2 | Mortein King Power Mosquito Coil | PHP-153 | Reckitt Benckiser (Bangladesh) Limited |
| | | 3 | Super Action Brand Mosquito Coil | PHP-171 | Maladesh International (Pvt) Limited |
| | | 4 | Elephant King Plus Mosquito Coil | PHP-172 | Maladesh International (Pvt) Limited |
| | | 5 | Lion King Mosquito Coil | PHP-177 | Lancei Chemecomplex |
| | | 6 | Parot Mosquito Coil | PHP-178 | Chemolimpex Agro |
| | | 7 | Ninja Mosquito Coil | PHP-179 | Lunset Chemo Complex |
| | | 8 | Hygin Mosquito Coil | PHP-180 | Sanwar International Products Limited |
| | | 9 | Nokon Mosquito Coil | PHP-181 | Nokon Limited |
| | | 10 | Guard Brand Mosquito Coil | PHP-198 | Agro Business Support Limited |
| | | 11 | Good Knight Mosquito Coil | PHP-204 | Godrej Sara Lee (Bangladesh) Limited |
| | | 12 | ACI Queen Mosquito Coil | PHP-206 | ACI Formulations Limited |
| 30 | Allethrin | 1 | Globe Brand Mat | PHP-20 | EMK & MAT Manufacturing Company |
| | | 2 | Good Knight Aerosol | PHP-144 | Godrej Sara Lee (Bangladesh) Limited |

| Sl. No. | Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|---|
| 31 | Esbiothrin | 1 | Flyban Mosquito Coil | PHP-15 | Flyban Insecticide Limited |
| | | 2 | Night Queen Mosquito Coil | PHP-46 | Shetu Pesticides Limited |
| | | 3 | Finis Mosquito Coil | PHP-56 | Standard Finis Oil Company |
| | | 4 | Borak Brand Mosquito Coil | PHP-41 | Yakub and Mahbub Chemical Works |
| | | 5 | Minar Brand Mosquito Coil | PHP-75 | Nooor Chemical Company Works |
| | | 6 | Unique Mosquito Coil | PHP-90 | Unique Insecticides Limited |
| | | 7 | Net Mosquito Coil | PHP-94 | Servi Health |
| | | 8 | Good Night Mosquito Coil | PHP-87 | Lalmai Chemical Works |
| | | 9 | Magic Mosquito Coil | PHP-131 | Olympic Industries Limited |
| | | 10 | Good Night Fighrt Mosquito Coil | PHP-124 | Godrej Sara Lee (Bangladesh) Limited |
| | | 11 | Cobra Mosquito Coil | PHP-111 | HRC Products Limited |
| | | 12 | Good Kinght Jambu Mosquito Coil | PHP-142 | Godrej Sara Lee (Bangladesh) Limited |
| | | 13 | Topkill Aerosol Insecticides | PHP-169 | Bangladesh Traders Corporation Limited |
| 32 | S.bioallethrin+ permathrin+ | 1 | Resigen OS | PHP-196 | Bayer CropScience Limited |
| | piperanyl Butoxide | | | | |
| 33 | S. Bioallethrin and permathrin | 1 | Quick Knock Aerosol | PHP-100 | Novartis (Bangladesh) Limited |
| 34 | ETOC (Prallethrin) | 10 | Mortein King Mat | PHP-115 | Reckitt Benckiser (Bangladesh) Limited |
| | | 2 | Comfort Brand Mosquito Coil | PHP-116 | Continental Commercial Company |
| | | 3 | Finis Mat | PHP-127 | Standard Finis Oil Company |
| | | 4 | ACI Mosquito Vaporiser | PHP-133 | ACI Formulations Limited |
| | | 5 | Relax Mosquito Coil | PHP-136 | ACI Formulations Limited |
| | | 6 | Good Knight Super Mat | PHP-141 | Godrej Sara Lee (Bangladesh) Limited |
| | | 7 | Good Knigh Expert Liquid Vaporiser | PHP-143 | Godrej Sara Lee (Bangladesh) Limited |
| | | 8 | Relax Mosquito Mat | PHP-145 | ACI Formulations Limited |
| 35 | Transfluthrin | 1 | Baygon Mosquito Coil | PHP-112 | Haychem (Bangladesh) Limited |
| 36 | Propoxur & Cyfluthrin | 1 | Baygon Aerosol Spray | PHP-113 | Haychem (Bangladesh) Limited |
| 37 | Neo Pynamine & Sumithrin | 1 | Quick Kill Fogging Fluid | PHP-119 | Safe Way Pest Control |

| Sl. No. | Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|---|
| 38 | ETOC & Sumithrin (d-Phenothin) | 1 | Novasol | PHP-121 | Novartis (Bangladesh) Limited |
| | | 2 | Xpel Aerosol | PHP-146 | Square Pharmaceuticals Limited |
| | | 3 | Eagle Aerosol | PHP-150 | Quazi Enterprises Limited |
| | | 4 | New Finis Tox Aerosol | PHP-160 | Standard Finis Oil Company |
| 39 | ETOC & Sumithrin | 1 | New ACI Aerosol Insect Spray | PHP-122 | ACI Formulations Limited |
| 40 | Gokilaht -S(d,d-T-Cypernothrin) & ETOC | 1 | Shield Aerosol | PHP-126 | Regent Corporation Limited |
| 41 | Bio-allethrin & Bioresmethrin | 1 | Mortein Seek and Kill Aerosol | PHP-129 | Reckitt Benckiser (Bangladesh) Limited |
| 42 | Tetramathrin+ Permethrin+Prallethrin | 1 | Tepsy Liquid Spray | PHP-135 | Gourab Industries Limited |
| | | 2 | Limit Liquid Insecticide | PHP-205 | The Limit Agroproducts Limited |
| 43 | Permethrin, Tetramethrin,Es bioallethrin | 1 | ACI Liquid Insecticide | PHP-186 | ACI Limited |
| 44 | ETOC (Prallethrin) | 1 | Xpel Mosquito Coil | PHP-147 | Square Pharmaceuticals Ltd. |
| 45 | d-allethrin | 1 | Stop Brand Mosquito Mat | PHP-138 | Globe-Janakantha Shilpa Paribar Limited |
| | | 2 | Surma Brand Mosquito Coil | PHP-148 | Khadiza Chemical Works |
| | | 3 | Fighter King Mosquito Coil | PHP-149 | Supti Chemical Company |
| | | 4 | Corbel Brand Mosquito Coil | PHP-151 | Corbel International Limited |
| | | 5 | SAM Proud Mosquito Coil | PHP-154 | SAM Agro Chemical |
| | | 6 | Mayakul Brand Mosquito Coil | PHP-155 | Belal Welcome Company |
| | | 7 | Zebra Brand Mosquito Coil | PHP-156 | Bikrampur Chemical Works |
| | | 8 | Dragon Mosquito Coil | PHP-157 | Quazi Enterprises Limited |
| | | 9 | Mia Brabd Mosquito Coil | PHP-158 | Mia Industries |
| | | 10 | Tara King Mosquito Coil | PHP-159 | Standard Finis Oil Company |
| | | 11 | ACI King Mosquito Coil | PHP-187 | ACI Formulations Limited |
| | | 12 | Tiger King Mosquito Coil | PHP-189 | Green Bangladesh |
| | | 13 | Eagle Super Mosquito Coil | PHP-202 | Quazi Enterprises Limited |
| | | 14 | Supreme Mosquito Coik | PHP-203 | Shahid Chemial Co. |
| 46 | d-Teramethrin + permethrin | 1 | Stop Brand Aerosol Insecticide | PHP-167 | Globe-Janakantha Shilpa Paribar Limited |

| Sl. No. | Name of Active Ingredient | Sl. No. | Trade Name of Products | Registration Number | Name of Registration Holder/Company |
|---|---|---|---|---|---|
| 47 | Metofluthrin | 1 | ACI Mosquito Coil Super Plus | PHP-183 | ACI Formulations Limited |
| 48 | Sumione/Metofluthrin | 1 | Rainbow Mosquito Coil | PHP-197 | Quazi Enterprises Limited |
| 49 | 2% hydramethylnon | 1 | Clean Bait Powder | PHP-207 | Nazrul Enterprise |

# 6. Banned chemical pesticides in Bangladesh

## 6.1 List of registration cancelled pesticides

The list provided below is for the pesticides of which registrations have been cancelled by Department of Agricultural Extension (DAE). They are not banned but their registrations are cancelled since the concerned companies failed to abide by the pesticide rules.

| Sl. No. | Name of Pesticide | Registration No. | Name of Company |
|---|---|---|---|
| 1 | Diazinon 14 G | AP-08 | Shetu Corporation Ltd. |
| 2 | Bizguard 2 P | AP-09 | Ciba-Geigy (Bangladesh) Ltd. |
| 3 | Roxion 40 EC | AP-l1 | International Services (Bangladesh) Ltd. |
| 4 | Dankavapon 100 | AP-13 | Shetu Corporation Ltd. |
| 5 | Damfin 2 P | AP-19 | Ciba-Geigy (Bangladesh )Ltd. |
| 6 | Diazinon 90 L | AP-20 | Ciba-Geigy ( Bangladesh )Ltd. |
| 7 | Damfin 950 EC | AP-25 | Ciba -Geigy ( Bangladesh)Ltd. |
| 8 | Dichlorvos | AP-27 | Bayer (Bangladesh) Ltd. |
| 9 | Cureterr 3 G | AP-30 | Bayer (Bangladesh) Ltd. |
| 10 | 2,4-D Na Salf | AP-34 | Bayer (Bangladesh) Ltd. |
| 11 | Folithion UL VC 98 | AP-36 | Bayer (Bangladesh) Ltd. |
| 12 | Methybron | AP-38 | Excell Trading Co. |
| 13 | Heptachlor 40 WP | AP-39 | Krishi Banijya Prothistan |
| 14 | Chlordane 40 WP | AP-40 | Krishi Banijya Prothistan |
| 15 | Aerovap 100 EC | AP-41 | Liza Enterprise Ltd |
| 16 | Aerodriel 20 EC | AP-42 | Liza Enterprise Ltd. |
| 17 | Aeromal 57% EC | AP-44 | Liza Enterprise Ltd. |
| 18 | Padan lO G | AP-52 | Data Enterprise Ltd. |
| 19 | Fenitrothion 98 | AP-53 | Farm Chemical Corporation Ltd. |
| 20 | Carbin 85 WP | AP-54 | Farm Chemical Corporation Ltd. |
| 21 | Diama157 EC | AP-55 | Farm Chemical Corporation Ltd. |
| 22 | Detia Gas EXT | AP-56 | Farm Chemical Corporation Ltd. |
| 23 | Dichlorvos 100 | AP-57 | Farm Chemical Corporation Ltd. |
| 24 | Methyl Bromide 98 | AP-58 | Farm Chemical Corporation Ltd. |
| 25 | Malathion 57 EC | AP-68 | BPI Ltd. |
| 26 | Cureterr 3 G | AP-69 | Bayer (Bangladesh .) Ltd. |
| 27 | Dieldrin20 EC | AP-73 | Shell Company of Bangladesh. Ltd. |
| 28 | Bidrin 24 WSC | AP-74 | Shell Company of Bangladesh Ltd. |
| 29 | Malathion 57 EC | AP-78 | Burn1a Eastern Ltd. |

| Sl. No. | Name of Pesticide | Registration No. | Name of Company |
|---|---|---|---|
| 30 | Vapona | AP-79 | Shell Company of Bangladesh. |
| 31 | Bidrin 85 WSC | AP-80 | Shell Company of Bangladesh. |
| 32 | Dieldrin 50 WP | AP-82 | Shell Company of Bangladesh. |
| 33 | Dieldrin 40 WP | AP-83 | Shell Company of Bangladesh. |
| 34 | Furadan 3 G | AP-85 | FMC International S.A. |
| 35 | Actellic 2% Dust | AP-99 | Bangladesh manufacturers Ltd |
| 36 | Quickphos | AP-I02 | Agrani Traders |
| 37 | Torque 550g/1 | AP-115 | lntemationel Servic Bangladesh Ltd. |
| 38 | Ridan 3 G | AP-131 | Rupali Sangstha Ltd. |
| 39 | BKzne 14 G | AP-135 | B.K.Traders Ltd. |
| 40 | Aerocypermethrin | AP-137 | Liza Enterprise Ltd. |
| 41 | Karmex | AP-145 | BEXIMCO Agrochemicals Ltd. |
| 42 | Carbaryl 85 WP | AP-147 | Shetu Corporation Ltd. |
| 43 | Agridhan 3 G | AP-154 | Shetu Pesticide Ltd |
| 44 | Tecto 2% Dust | AP-157 | Alco Phamla Ltd. |
| 45 | Manex II | AP-163 | Shetu Corporation Ltd. |
| 46 | Phytox MZ-80 | AP-I64 | Liza Enterprise Ltd. |
| 47 | Uniflow TM Sulphur | AP-167 | Shetu Corporation Ltd. |
| 48 | Fenkil20 EC | AP-169 | Agrani Traders |
| 49 | Sunfuran 3 G | AP-171 | Shetu Corporation Ltd. |
| 50 | Hekthion 57 EC | AP-l78 | Farm Chemical Corp. Ltd. |
| 51 | Poligor 40 EC | AP-180 | Farm Chemical Corp. Ltd. |
| 52 | Melbromid 98 | AP-185 | Horizon Trade Ltd. |
| 53 | Mebrom | AP-186 | Bengal Wings Trade Ltd. |
| 54 | Agrine 85 WP. | AP-187 | Edgro(Pvt) Ltd. |
| 55 | Drawizon 60 EC | AP-190 | Keeco Pesticides Ltd. |
| 56 | Gastoxin | AP-195 | Bright Corporation |
| 57 | Cekumethrin 10 EC | AP-219 | Premier Traders |
| 58 | Cythrin | AP-220 | Bari & Company Ltd. |
| 59 | Cekuthoate 40 EC | AP-225 | Premier Traders |
| 60 | Arifos 20 EC | AP-229 | Bari & Company Ltd. |
| 61 | Malathion 57 EC | AP-230 | Sabrina Trading Corporation. |
| 62 | Card an 5 G | AP-234 | Bari & Co. Ltd. |
| 63 | Diazinon 14 G | AP-236 | Liza Enterprise Ltd. |
| 64 | Rizinon 60 EC | AP-239 | Bari & Co. Ltd. |
| 65 | Zincphosphide | AP-258 | Liza Enterprise Ltd. |
| 66 | Davison Glyphosate | AP-266 | Shetu Pesticides Ltd. |
| 67 | Morestan 25 WP | AP-269 | BEXIMCO Agrochemical Ltd. |
| 68 | Manzate 200 | AP-301 | Auto Equipment Ltd. |
| 69 | Dimecron 100 SL | AP-22 &276 | Novartis(Bangladesh) Ltd. |
| 70 | Pillarcron 100 SL | AP-148 | Shetu Pesticides Ltd. |
| 71 | Benicron 100 WSC | AP-06 | Sabrina Trading Corporation. |

| Sl. No. | Name of Pesticide | Registration No. | Name of Company |
|---|---|---|---|
| 72 | DDVP 100 W/v | AP-03 | ACI Formulations Ltd. |
| 73 | ChemoDDVP | AP-245 | Chemsfil Bangladesh Ltd |
| 74 | DDVP 100 EC | AP-151 | Mcdonald Bangladesh .(Pvt)Ltd |
| 75 | Nogos 100 EC | AP-26 & 274 | Novartis (BD) Ltd. |
| 76 | Phosvit 100 EC | AP-46 | Data Enterprises Ltd. |
| 77 | Daman 100 EC | AP-325 | Petrochem (B) Ltd. |
| 78 | Azodrin 40 WSC | AP-336 | BASF Bangladesh Ltd. |
| 79 | Nuvacron 40 SL | AP-18 & 275 | Novartis (Bangladesh) Ltd. |
| 80 | Megaphos 40 SL | AP-175 | Mcdonald Bangladesh (Pvt.) Ltd |
| 81 | Phoskil 40 SL | AP-339 | United Phophorous (Bangladesh) Ltd. |
| 82 | Kadette 40 WSC | AP-284 | BISCa Pesticides & Chemical Corporation |
| 83 | Monophos 40 WSC | AP-328 | Alpha Agro Limited. |
| 84 | Monodrin 40 WSC | AP-07 | Sabrina Trading Corporation |
| 85 | Corophos 40 SL | AP-342 | Corbel international Ltd. |
| 86 | Luphos 40 SL | AP-388 | ACI Formulations Ltd. |
| 87 | Amcodrin 40 SL | AP-340 | Atherton Imbros CO.Ltd. |
| 88 | Vitacron 40 SL | AP-341 | Shetu Marketing Co. |
| 89 | Monotaf 40 WSC | AP-331 | Auto Equipment Ltd. |
| 90 | Tamaron 40 SL | AP-188 | Haychem(B) Ltd. |
| 91 | Polythion 50 EC | AP-32 | Haychem(B) Ltd. |
| 92 | Macuprex 65% | AP-65 | Bayer Crop Science |
| 93 | Zithiol 57 EC | AP-126 | Rohn Polenk Bangladesh |
| 94 | Delapon Na-85 | AP-66 | Rohn Polenk Bangladesh |
| 95 | Enthio 25 EC | AP-64 | Rohn Polenk Bangladesh |
| 96 | Zolone 35 EC | AP-67 | Rohn Polenk Bangladesh |
| 97 | Rentokill CC Type 75% | AP-22 1 | Getco Limited |
| 98 | Paramound CC Type | AP-300 | B.D. Associate and Company |
| 99 | Darsbun 20 EC | PHP-5 | Auto Equipment Ltd |
| 100 | Darsbun 20 EC | PHP-85 | Auto Equipment Ltd |
| 101 | Diazinon 60 EC | AP-23 | Syngenta Bangladesh Ltd |
| 102 | Mortin King Mosquito Coil | PHP-54 | Reckit and Benckiser |
| 103 | Mortin Mosquito Coil | PHP-I0l | Reckit and Benckiser |

## 6.2 Banned persistent organic pollutants (POPs) pesticides in Bangladesh

The term "Persistent Organic Pollutants" or POPs is used to describe a class of toxic chemical substances that can harm human health and environment. POPs are long lasting toxic substances that are produced and released into the environment by human activity. Some POPs are produced for use as pesticides; some are for use as industrial chemicals; and some are produced as unwanted byproducts of certain chemical and/or combustion processes.

The Stockholm Convention has identified 12 substances as POPs, they are -Aldrin, Chlordane, DDT, Dieldrin, Dioxins, Furans, Endrin, Heptachlor, Hexachlorobenzene, Mirex, Toxaphene and Polychlorinated biphenyls (PCBs). POPs are chemical substances having the properties:

- Produced and mobilized into the environment as a result of human activity, i.e. they are anthropogenic.
- Potential to cause harm to human health and/or to the environment, i.e. do adverse effects.
- Long life in the environment and not easily or quickly broken down when they are in air, in water, in soil, in sediments and/or in biota, i.e. they are persistent in environment.
- Become concentrated in the environment to levels of concern under circumstances where species accumulate POPs by eating smaller POPs contaminated organisms, i.e. undergo bioaccumulation.
- Travel long distances in the environment (through air, water or migratory species), and accumulate at locations that are distant from the sources of release.

Out of 12 POPs, nine are pesticides used on agricultural crops and/or for public health vector control. Of them mirex and toxaphene were never imported or used in Bangladesh. By the late 1970s, all except heptachlor and DDT of the 7 POP pesticides had been either banned or subjected to severe use restrictions in Bangladesh. By 1998 all POPs pesticides had been banned in Bangladesh. However, a survey study on the stock-piles was conducted by ESDO (2005), results of that study are described below:

### 6.2.1 POPs pesticides stockpiles

Stocks of Dieldrin 18/20 EC (7150 Lbs) and Heptachlor 40 WP (977 Lbs) were reported in the stock books at the following stores/ godowns: Thana Store, Chhagalnaiya, Feni; Plant Protection (PP) Store, Rajshahi; Thana Store, Kashba, Comilla; Adamdighi Thana Store, Bogra; Santahar PP Store, Naogaon; PP Store, Barisal; PP Store, Jessore; PP Store, Khulna; and Thana Store, Bheramara, Kustia. However, an inspection of these sites did not reveal any stock except 2,700 Lbs Dieldrin found in stock at Santahar PP Store, Naogaon. At PP Store, Jessore, 150 Lbs of Dieldrin 20 EC has been reported in leakage loss and at PP Store, Barisal only some remnants and 10 empty drums of Heptachlor 40 WP were found. Other than these, no stocks were found. Authorities claim that the other stocks may have been either destroyed or buried. Also there are reports of 13,668 Kg of obsolete pesticides lying in Department of Agricultural Extension (DAE) at their different offices/stores. The records reveal that at present there is no stock of obsolete POP pesticides at any level of DAE. But there are many containers and remnants of unidentified pesticides and there is a possibility that some of these could be of POP pesticides. These are located at Dhaka, Chittagong, Rajshahi, Khulna, and Barisal. In addition, empty packaging material for old pesticides could still be available. Also the empty godowns in different locations of the POPs pesticides and their surroundings would still be contaminated.

### 6.2.2 DDT stockpiles

DDT was the only pesticide produced in Bangladesh by the Bangladesh Chemical Industries Corporation (BCIC) established DDT Plant at Barabkubndu in Sitakundu of Chittagong in 1966. In 1982, this Plant was renamed as Chittagong Chemical Complex (CCC). The production of DDT by CCC was officially stopped on 1 December 1991 but practically production was discontinued after 1992. During this period (1966 to 1992) DDT plant/ CCC produced a total of 7706 MT of DDT Technical, of which 7604.49 MT was formulated into 12003.17 MT of 75% DDT. Out of its total 75% DDT formulations, 11,793.27 MT was sold to Health Directorate for Malaria eradication program.

Surprisingly, DDT, the most commonly used POPs pesticide in Bangladesh particularly in public health was never registered. There is 101.69 MT of DDT technical in stock in the country. In

addition, 32.037 MT of Microcell/ Wassalom raw material of DDT production are in stock and stored in the godown. Another 209.90 MT of 75% DDT formulation was left in stock, which was distributed, to Department of Health Services (DoHS). As per the records, a total of 12.789 MT of DDT 75WP are still available as stocks in district reserve stores/ upazila project offices of Malaria Vector Borne Disease Control, DoHS. From these stocks, the required amount of DDT is supplied to Malaria and Kalazar prone areas for their use against vector. The table below shows the location of these stores and the quantity in stock at each of the location.

| Sl. No. | District | Location of Stock of DDT | Quantity in Kg |
|---|---|---|---|
| 1 | Rajshahi | Godagari Upazila Health project | 2979 |
| 2 | Madaripur | Shibchar Upazila Health project | 1751 |
| 3 | Barisal | Gouranadi Upazila Health project | 1428 |
| 4 | Pirojpur | Bhandaria Upazila Health project | 240 |
| 5 | Noakhali | Chatkhil Upazila Health project | 170 |
| 6 | Rangamati | District Reserve Store | 300 |
| 7 | Chittagong | Hathazari Upazila Health project | 475 |
| 8 | Kurigram | District Reserve Store | 5406 |
| 9 | Kurigram | Bhurungamari Upazila Health project | 40 |
| TOTAL | | | 12,789 |

In 1983/84 under ADB loan, 500 MT of DDT was imported but due to substandard quality the entire stock was unaccepted by DoHS and thereafter remained unused at the Medical Service Department (MSD) godowns at Chittagong. Upon inspection, 482.90 MT in 182,000 boxes held in 4 MSD godown were found. Cumulatively, 495.69 MT of DDT exist in the stores/ godowns as stock in different parts of the country. This includes DDT Technical 101.69 MT, DDT 75% WP (local) 12.789 MT, DDT 75 WP (imported) 482.90 MT, DDT 5 Kg and another 32.03 MT Microcell/ Walssom raw material for DDT production. All these locations are a potential hotspot and the conditions in which these stocks are stored need to be examined. If not properly stored, these are a serious threat to those inhabiting in the vicinity as well as to the environment. The BCIC Chemical Complex, site of DDT plant at Barbakund, Chittagong itself stands as a hotspot. The years of production would have been responsible for contaminating the site as well as the surroundings. There is also 32 MT of microcell (Wassalom DDT raw material) stored in this abandoned plant. Good evidences are there that human exposure to specific POPs or classes of POPs pesticides may cause following injuries:

- Cancers and tumors at multiple sites;
- Neurobehavioral impairment including learning disorders, reduced performance on standard tests and changes in temperament;
- Immune system weaker;
- Reproductive deficits and sex-linked disorders;
- Shortened period of location in nursing mothers;
- Diseases such as endometriosis (a painful, chronic gynecological disorder in which uterine tissues are affected), increased incidence of diabetes and others.

## 7. Measures adopted for pesticide safety and information on the evaluation of the pesticides risk.

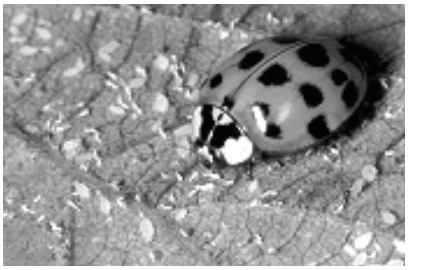
Some options are described here to combat negative consequences of inappropriate use or misuse or overuse of pesticides by stakeholders. Though some of the problems might not be the same but many may be common and could be shared between SAARC countries.

## 7.1 Implementation of IPM programs

IPM activities so far have covered only very few insect pests and diseases of only few crops and have not been adopted by common farmers. More pests and crops should be brought under research program to develop sustainable and cost competitive components for integration. Both old and new technologies should be disseminated to all stakeholders as quickly as possible. Bio-control agents e.g., predators, parasitoids etc. (Fig. 3) are the naturally occurring valuable components of IPM. In many cases, artificial mass rearing and release of such agents are inevitable to boost IPM to a success. In Bangladesh, IPM lab with adequate mass rearing facilities is almost in nonexistence. These facilities should immediately be developed and information between SAARC countries can be shared to make IPM a successful program in this region.



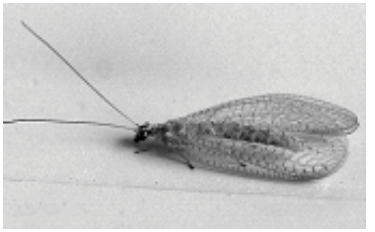
**Syrphid Fly**



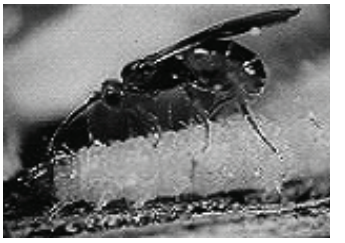
**Lady Bird beetle**



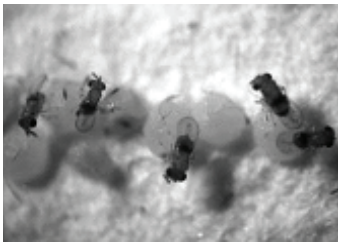
**Spider**



**Green Lacewing**



**Bracon hebetor**



**Tricogramma Sp**



**Praying Mantid**

*Fig. 3. Some common predators and parasitoids available in Bangladesh.*

## 7.2 Prevention of marketing of low AI containing pesticides

It is evident that low AI containing pesticides are being sold across Bangladesh. So necessary steps should be taken to prevent that wrong doing. Pesticides quality become poor because of mixing active ingredient either impure or in quantity lower than that showed in label and/or products packed/repacked and/or stored improperly. For preventing such malpractice, regular monitoring of the purity of pesticides should be done through the establishment of adequate number of analytical laboratories across the country, which the country still lacks. Prevention of adulteration and marketing of low AI containing product might be a milestone in reducing or minimizing cost of crop production.

Rahman (1996) suspected that marketing or use of adulterated or low AI containing pesticide is a common practice in Bangladesh, though there was no data base information. However, Pesticide Analytical Laboratory (PAL) of BARI collected several brands of Carbofuran, Carbaryl, Carbosulfan, Malathion, Diazinon, Quinalphos, Dimethoate, Cypermethrin and Chlorpyrifos from pesticide traders of Dhaka, Jessore, Rangpur, Bogra, Rajshahi and Gazipur during 2005-06 and 2006-07. Analytical results are presented in the Table 13.

**Table 13. Purities of some marketed brands of pesticides**

| Name of Active Ingredient | Total number of brands tested during | | Rank of Purity | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 2005-2006 | | | 2006-2007 | | |
| | 2005-06 | 2006-07 | 90-100% | 70-90% | <70% | 90-100% | 70-90% | <70% |
| Carbofuran | 9 | 6 | 3 | 5 | 1 | 3 | 2 | 1 |
| Carbaryl | 2 | - | - | - | 2 | - | - | - |
| Carbosulfan | 3 | - | 1 | 2 | - | - | - | - |
| Malathion | 8 | 14 | 6 | 1 | 1 | 6 | 4 | 4 |
| Diazinon | 9 | 9 | 1 | 3 | 5 | - | - | 9 |
| Quinalphos | 3 | 9 | - | - | 3 | 7 | 1 | 1 |
| Dimethoate | 3 | 5 | - | - | 3 | 1 | 1 | 3 |
| Cypermethrin | 4 | 11 | 3 | - | 1 | 11 | - | - |
| Chlropyrifos | 7 | 6 | 5 | 2 | - | 1 | 2 | 3 |
| Denitrothion | - | 3 | - | - | - | 2 | 1 | - |
| Acephate | - | 4 | - | - | - | - | 1 | 3 |
| Total | 48 | 67 | 19 | 13 | 16 | 31 | 12 | 24 |

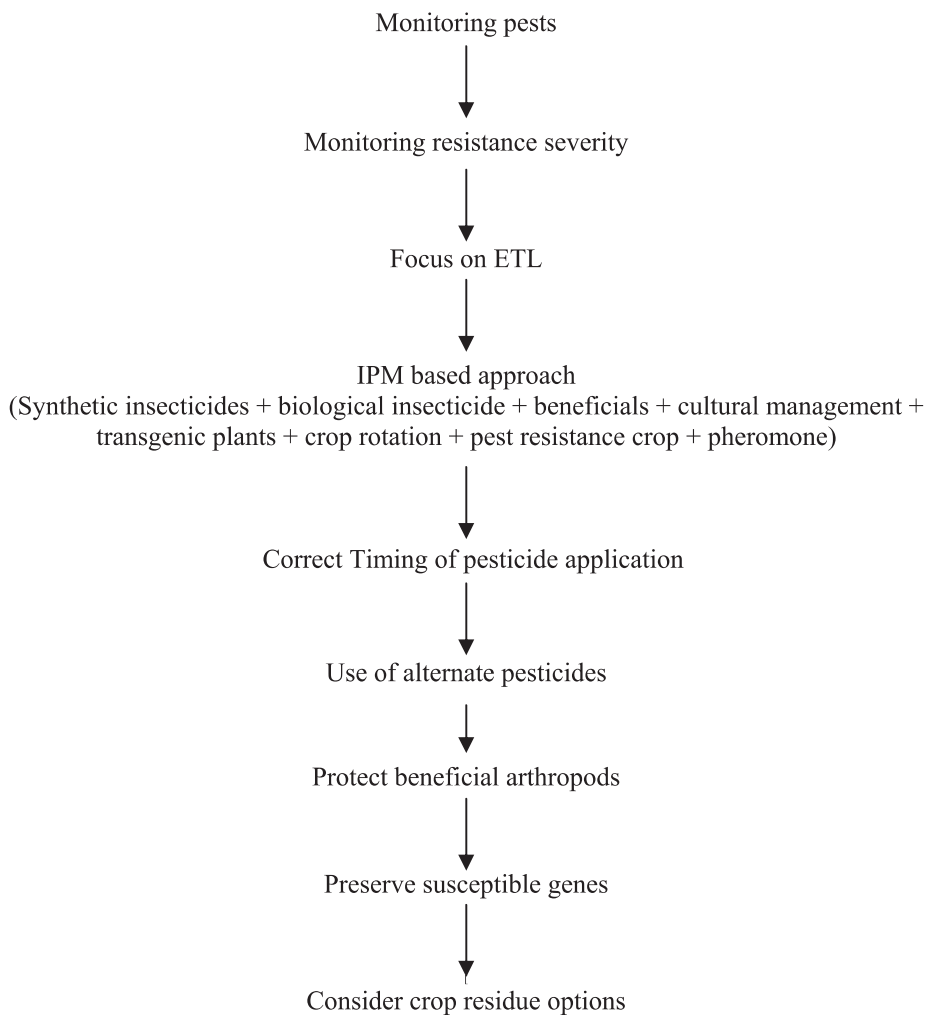
Out of 48 brands belonging to 9 chemical groups, only 19 had 90-100% purity, 13 had 70-90% purity and 16 had <70% purity during 2005-2006. Of 67 brands, 31 had >90% purity while 12 had 70-90% and 24 had<70% purity during 2006-2007. Existence of impure pesticides in the market and also their use by the farmers is the potential threat for crop production. Legislative drive is required to ensure the marketing of pure pesticides.

## 7.3 Resistance monitoring and management

Pesticide resistance is a consequence of basic evolutionary process. Resistance usually develops by genetic mutation and selection. Types of mutation include: a change in processes the pest that make the pesticide harmless, a change in the place where the pesticide enters the pest so it can not enter or a change in the behaviors of the pest so that it avoids the pesticides. If the same pesticide is applied again and again, there will be more resistant pests. As resistance is documented in Bangladesh, there should have been some programs to combat resistance. The occurrence and distribution of resistance population has to be documented. Resistance severity is also need to be quantified. This should be done though appropriate resistance monitoring program.

Once resistance is quantified, then resistance management would be the next issue. In modern agriculture insecticide resistance management (IRM) is considered as a part of IPM.

**The following diagram shows the necessary steps to IRM**



General pesticide use is no longer the answer of pest control. Pests have developed resistance to many pesticides, and the industry may not have enough resources to continually develop and supply the market with new products precisely when needed to replace old ones. Farmers with resistance problem do not have enough time to wait for new chemistry. It is imperative that the effectiveness of available pesticides be conserved by farmers though adoption of IRM.

## 7.4 Residue detection and monitoring

There are over 45 generic chemicals (Active ingredient) of pesticides registered in Bangladesh and they are being used for the management of insect pests, mites, weeds and plant pathogens. It is well known that any inappropriate use of pesticides could cause residue problems. In Bangladesh, as pesticide usage is documented inappropriate, therefore, residue becoming a major food safety concern of consumers and government. To minimize the health risk to human and environment from exposure to pesticides, samples of vegetable, fruits, processed food items, fish, meat etc. from different sources (direct from market and also from farmers field) should be collected and analysed in regular basis, which would provide clear indication of presence or absence of residue at/or above MRL. This issue has yet not been properly taken care of.

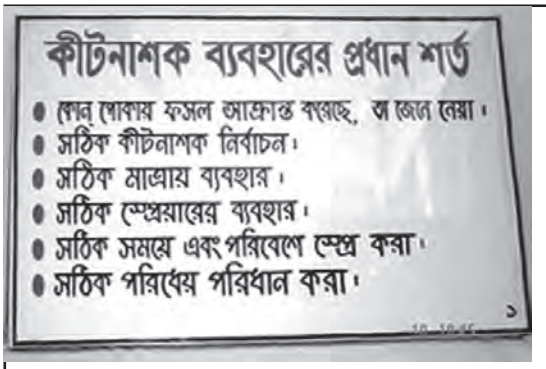
## 7.5 Strengthening of pesticide analytical and residue research

As pesticides containing low AI are being sold/ used in Bangladesh, samples of marketed brands across the country should be examined regulalrly for verifying their purity. To do such job, at least 7-8 analytical labs should be established in different regions under PPW/DAE. Thus sales of quality pesticides may be assured. At present Department of Agricultural Extension (DAE) has product analysis laboratory through which product analytical works are done for the purpose of pesticide registration. But frequent samplings from market points are needed to monitor quality, which is at present beyond the capacity of DAE. Bangladesh Agricultural Research Institute (BARI) has a well equipped pesticide analytical laboratory dedicated to conducting research on pesticides residues. This laboratory may develop database on residues and degradation rates of different pesticides in different crops and ecosystems to serve as a basis of fixing-up pre-harvest interval (PHI) and maximum residue limits.

## 7.6 Training on the safe use and handling of pesticides

There is one on-going program at BARI under ministry of agriculture on the safe use and handling of pesticides. So far 2205 stakeholders (farmers, extension personnel, NGO workers etc.) in 63 batches were trained. Similar program is also run by BCPA. However, more training and awareness building programs for framers using visual aid as shown below should be organized nation wide. This program could also be shared between SAARC countries.

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কীটনাশক ব্যবহারের প্রধান শর্ত
কোন্ পোকায় ফসল আক্রান্ত করেছে, তা জেনে নেয়া।
সঠিক কীটনাশক নির্বাচন।
সঠিক মাত্রায় ব্যবহার।
সঠিক স্প্রেয়ারের ব্যবহার।
সঠিক সময়ে এবং পরিবেশে স্প্রে করা।
সঠিক পরিধেয় পরিধান করা।
১


কীটনাশক ব্যবহারের আগে করণীয়
ফসলে আক্রমণের মাত্রা জেনে নিন।
ফসল হতে ২-১০ দিন গাছ বা ফল আক্রান্ত হলে স্প্রে করুন।
কীটনাশকের লেবেল ভাল করে পড়ুন।
নিজে পড়তে না পারলে অন্যের সাহায্য নিন।
লেবেলের নির্দেশাবলী মেনে চলুন।
২


স্প্রে মেশিনটি ভাল আছে কি?
ত্রুটিযুক্ত নজল দিয়ে স্প্রে করবেন না।
মাদু বা বাঁশের পিচকারী দিয়ে স্প্রে করবেন না।
সঠিক যন্ত্রের মাধ্যমে কীটনাশক ব্যবহার না করলে পোকা দমন করা যাবে না।
৩


কিভাবে কীটনাশক পানিতে মেশাবেন?
কীটনাশকের লেবেল পড়েছেন কি?
স্প্রে মেশিনে পরিমান মত পরিস্কার পানি ভরিয়ে নিন।
লেবেলে উল্লেখিত পরিমানের তরল বা গুড়া কীটনাশক স্প্রে মেশিনে ঢেলে নিন।
সকল কীটনাশক পানিতে দ্রবনীয় বিধায় কাঠি দিয়ে নাড়া দেওয়ার প্রয়োজন নাই।
৪


স্প্রে করার পূর্বে করণীয়?
গায়ে ফুল হাতা জামা বা শার্ট পরুন।
হাতে দস্তানা ও চোখে চশমা ব্যবহার করুন।
মুখে মুখোশ পরিধান করুন অথবা গামছা বেঁধে নিন।
মাথায় টুপি ব্যবহার করুন।
পায়ে গামবুট বা জুতা ব্যবহার করুন।
৫


স্প্রে করার সঠিক সময়?
সকাল ৯টা থেকে ১১টা অথবা বিকাল ৩টা থেকে ৫টা।
বাতাসের অনুকূলে স্প্রে করুন।
প্রখর রোদে কীটনাশক স্প্রে করবেন না।
তীব্র বাতাস, বৃষ্টি এবং কুয়াশার সময় স্প্রে করবেন না।
৬


স্প্রে করার সময় করণীয়?
দ্রুত হাটবেন না, স্বাভাবিক গতিতে হেঁটে স্প্রে করুন।
গাছ কেপী বা কম ভিজাবেন না।
গাছ এমনভাবে ভিজাবেন যেন পানির ফোটা পাতা গড়িয়ে না পরে।
পোকা বা মাকড় যদি পাতার নীচে বাস করে তাহলে স্প্রে নজেলের পাতার নীচে ধরে স্প্রে করতে হবে।
৭


স্প্রে করার সময় করণীয়?
দানাদার কীটনাশকের বেলায় সমান ভাবে সারাক্ষেতে ছিটিয়ে দিবেন।
কীটনাশক স্প্রে করার সময় পানাহার ও ধুমপান থেকে বিরত থাকুন।
৮






















(Posters regarding awareness prior to pesticide application in Bengali language)

## 8. Resistant pest species, resurgence and secondary pest outbreak

When pesticides are used, even in a well managed condition, they pose threat as they are poisonous to all forms of living beings. If pesticides are applied in inappropriate way the consequences are huge, enormous and irreversible.

### 8.1 Pest resurgence and secondary pest outbreak

Pest resurgence is the likely outcome of the sole reliance on pesticide. Pest resurgence occurs when the pest and its complex of natural enemies are killed by pesticides. Any segment of the natural enemy population that survives after application often starves since the controlled pest population is too low to provide an adequate food source. Although the pest population initially declines from pesticide mortality, without the stabilizing effect of natural enemies it is able to rebound, often to higher levels than were present before the pesticide.

Secondary pest outbreaks are also primarily the result of the pesticide application caused destruction of the natural enemies that normally keeps the minor or potential pest under economic injury levels.

In Bangladesh, several minor insect pest species are known to become major pests due to over-use of pesticides. The species are *Spodoptera* in mustard; Jassid in brinjal and cotton; mite in panikachu; mealybug in papya; whitefly in guava; and BPH in rice (Fig. 4a, 4b, 4c, 4d & 4e).

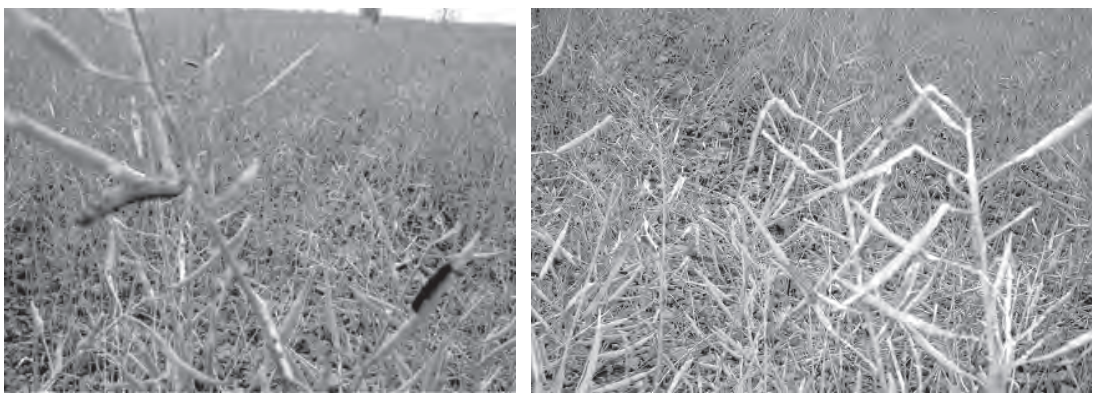


*Fig. 4a. Spodoptera larvae in mustard*

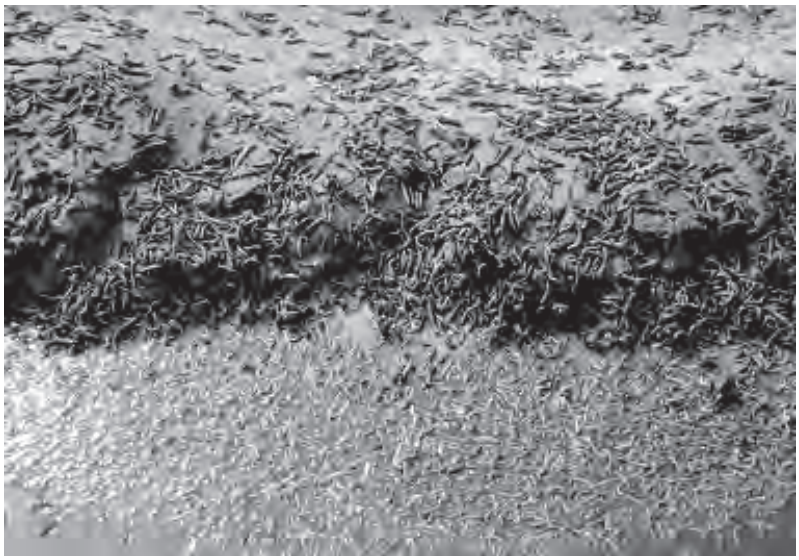


*Fig. 4b. Spodoptera larvae in a mass*



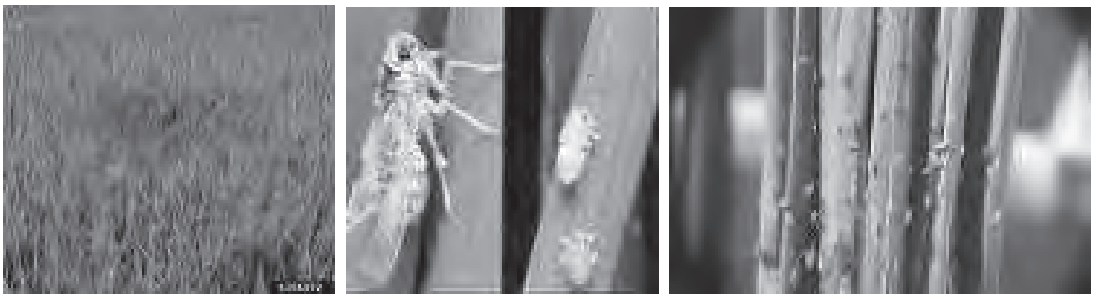




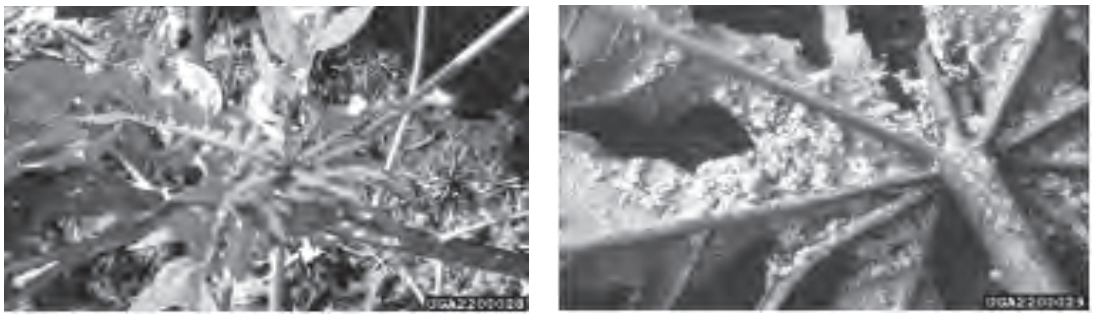
*Fig. 4c. Jassid in brinjal and cotton*



*Fig. 4d. Mite in panikachu*



**BPH in Rice**



**Mealybug in Papaya**



**Whitefly in Guava**

*Fig. 4e. Minor insect pest species, which have become major pests*

## 8.2 Pesticide resistance

Pests may evolve to become resistance to pesticides. Many pests will initially be very susceptible to pesticides, but some with slight variations in their genetic makeup become resistant and therefore, survive to reproduce. Through natural selection, the pests may eventually become very resistant to the pesticide.

In Bangladesh very little research has so far been done in this regard. Entomology Division of BARI has conducted several trials during 2000-2002 for the documentation of insecticide resistance in brinjal shoot and fruit borer (BSFB). Table 14 shows the intensity of insecticide resistance in different strains of BSFB. The results revealed that the strain/ population receiving the higher frequency of insecticide application developed the higher degree of resistance. The results also indicate the occurrence of cross/multiple resistance in BSFB throughout the country.

**Table 14. Intensity of insecticide resistance in different strains/populations of BSFB**

| Strain/ Population | Percentage of resistance obtained for | | | | | |
|---|---|---|---|---|---|---|
| | Marshal 20 EC | Cymbush 10 EC | Dimecron 100 SCW | Diazinon 60 EC | Malataf 57 EC | Nogos 100 EC |
| Joydebpur | 26.00 | 44.00 | 26.25 | 14.25 | 21.30 | - 3.00 |
| Rangpur | - 6.00 | 3.25 | 4.55 | 12.70 | 24.70 | 1.00 |
| Jessore | 43.00 | 57.05 | 49.95 | 50.05 | 40.90 | 61.85 |
| Comilla | 22.00 | 44.25 | 25.05 | 15.95 | 17.10 | 21.80 |
| Dhaka | 12.80 | 59.25 | 8.55 | 14.25 | 54.10 | - 4.60 |
| Jamalpur | - 1.75 | 27.75 | 10.55 | 22.25 | 19.10 | 2.65 |
| Tangail | 10.00 | 31.25 | 2.25 | 8.75 | 25.00 | 10.70 |
| Khagrachari | - 10.00 | 8.65 | 12.25 | 11.75 | 1.20 | - 10.17 |

Percentage of resistance calculated from the observed mortality of laboratory reared larvae of BSFB at Discriminating Concentration (DC).

Pest resistance to a pesticide is commonly managed through pesticide rotation, which involves alternating among pesticide classes with different modes of action to delay the onset of or mitigate existing pest resistance. Tank mixing of pesticides is the combination of two or more pesticides with different modes of action in order to improve individual pesticide application results and delay the onset of or mitigate existing pest resistance.

# 9. Pesticide misuse (Environmental and health effects)

Although absolute information on the use pattern of pesticides at farmers level are difficult to provide, there are several related studies, which are presented here that obviously would provide some idea.

## 9.1 Pesticide usage pattern in rice

In a study by Hasanuzzoha (2004), 350 farmers (50/each location) of Rangpur, Bogra, Rajshahi, Jessore, Khulna, Comilla & Mymensingh were interviewed. According to farmers' opinion, stem borer, brown plant hopper, green leafhoper, rice hispa, case worm, leaf roller, rice bug, grass hopper

and thrips attacked rice. A total of 17 different insecticides were used in rice. Of 7 locations, the highest number of insecticides (17) was used in Jessore followed by Bogra (13) and Rajshahi (12). The lowest number was used in Comilla (10). Mean frequencies of insecticide application on Boro and Aman rice in different locations are presented in the Table 15. Both in Aman and Boro, the highest mean frequency of insecticide application was found in Jessore (13 and12) and the lowest in Rangpur (4 and 3).

**Table 15. Frequency of insecticide application in Boro and Aman rice by the farmers of seven locations during 2000**

| Location | Frequency of application | |
|---|---|---|
| | Boro | Aman |
| Rangpur | 4(2-12) | 3(1-10) |
| Bogra | 5(3-14) | 5(2-12) |
| Rajshahi | 4(2-10) | 5(3-12) |
| Jessore | 13(6-22) | 12(5-18) |
| Khulna | 5(2-11) | 4(3-12) |
| Comilla | 7(5-16) | 6(3-18) |
| Mymensingh | 8(6-16) | 5(3-14) |

Numbers in parentheses indicate the range of frequency of pesticide application. Source: Hasanuzzoha (2004).

Compared to vegetables, frequency of pesticide application in rice was found to be much lower. The reported highest mean frequencies were 99 for brinjal, 33 for bean, 18 for cabbage, 12 for bitter gourd and 5 for cauliflower.

## 9.2 Pesticide usage pattern in vegetables

Around twelve hundred (1200) farmers of 8 districts (i.e.; Gazipur, Dhaka, Comilla, Tangail, Rangpur, Bogra, Jessore and Jamalpur) were interviewed by Entomology Division, BARI during 1997-98. According to vegetable farmers shoot and fruit borer and epilachna beetle of brinjal; diamond – backmoth, prodenia caterpillar, cutworm of cabbage; prodenia caterillar and cutworm of cauliflower; pod borer and aphid of bean; fruit fly of bitter gourd and pod borer of string bean were the key pests.

A total of 71 different brands of insecticides belonging to 18 different AIs were used in vegetables and a maximum of 32 different brands belonging to 10 AIs in a single (bean) crop in a season. The highest recorded frequencies were in Jessore, 99 times in brinjal followed by 38 times in bean (Table 16).

It was also found that many farmers sprayed insecticides everyday or every alternate day, even twice a day in brinjal at jessore, at 1-2 days interval in bean and string bean in Comilla, every alternate day in cauliflower and cabbage in Tangail, at 2 days interval in bean at Gazipur and okra at Rangpur. Ahmed (2001) reported that 6-30% farmers of seven of ten locations of Jessore sprayed insecticides in brinjal in similar fashion.

**Table 16. Mean frequency of insecticide application of different vegetables by the farmers of eight different districts of Bangladesh during 1996-98 cropping season**

| Location | Frequency of insecticide application on vegetable crops | | | | | |
|---|---|---|---|---|---|---|
| | Brinjal | Cauliflower | Cabbage | Bean | Bitter gourd | String bean |
| Jamalpur | 4(2-16) | 3(2-25) | 2(2-20) | 1(2-15) | 1(2-6) | - |
| Dhaka | 5(1-90) | 1(1-20) | 1(2-25) | 15(2-120) | 1(1-20) | 1(3-20) |
| Rangpur | 8(2-30) | 4(1-15) | 3(1-70) | 1(1-25) | 3(2-60) | 1(4-12) |
| Gazipur | 6(2-29) | 3(1-12) | 2(1-12) | 3(2-20) | 4(4-20) | 2(6-12) |
| Tangail | 4(1-30) | 2(1-12) | 2(1-12) | 2(1-30) | 1(1-15) | - |
| Comilla | 7(3-20) | 4(2-20) | 3(2-20) | 7(2-26) | 3(3-16) | 1(2-28) |
| Jessore | 99(30-300) | 5(2-45) | 18(8-90) | 33(12-100) | 12(5-60) | - |
| Bogra | 4(2-15) | 1(1-3) | 1(2-5) | 2(2-10) | 1(2-7) | - |

*Numbers in parentheses indicate the range of insecticide application*

**Table 17. Marketing of vegetables after insecticide application by the farmers of eight districts of Bangladesh during 1996-98 cropping season**

| Location | Days after insecticide application on vegetable crops | | | | | |
|---|---|---|---|---|---|---|
| | Brinjal | Cauliflower | Cabbage | Bean | Bitter gourd | String bean |
| Jamalpur | 0-3(17) | 0-3(12) | 0-5(5) | 2-5(3) | 1-5(5) | - |
| | 4-7(33) | 7-10(18) | 7-10(18) | 7-15(3) | 7-10(3) | - |
| | 8-12(14) | 12-15(20) | 12-15(14) | - | - | - |
| | 15-20(14) | 20-25(16) | >15(8) | - | - | - |
| | >20(3) | >25(3) | - | - | - | - |
| Dhaka | 1-5(25) | 2-5(12) | 3-5(7) | 2-5(33) | 2-5(16) | - |
| | 6-10(32) | 7-10(9) | 7-10(6) | 6-7(16) | 6-8(50) | - |
| | 12-15(2) | 15-30(3) | 12-15(2) | >7(1) | >10(2) | - |
| | - | >30(1) | >15(9) | - | - | - |
| Rangpur | 1-3(20) | 1-5(27) | 1-15(13) | 1-5(9) | 1-5(18) | - |
| | 4-6(26) | 6-10(28) | 6-10(19) | 6-10(15) | 6-10(13) | - |
| | 7-10(32) | 11-15(2) | 11-15(9) | >10(2) | >10(1) | - |
| | >10(7) | >15(2) | >15(5) | - | - | - |
| Gazipur | 1-5(35) | 4-7(30) | 2-5(24) | 2-5(30) | 2-5(36) | 3-5(11) |
| | 7-10(25) | 10-15(17) | 7-10(7) | 7-10(17) | 6-10(5) | - |
| | 12-15(2) | 20-25(7) | >10(9) | >10(4) | - | - |
| | - | >25(1) | - | - | - | - |

| Location | Days after insecticide application on vegetable crops | | | | | |
|---|---|---|---|---|---|---|
| | **Brinjal** | **Cauliflower** | **Cabbage** | **Bean** | **Bitter gourd** | **String bean** |
| Tangail | 1-5(20) | 3-7(28) | 2-5(5) | 1-5(17) | 1-5(8) | - |
| | 6-7(51) | 8-10(16) | 7-10(37) | 6-10(20) | 7-10(5) | - |
| | 8-10(14) | 15-20(16) | 12-15(14) | 12-15(8) | - | - |
| | >10(2) | >20(8) | >15(9) | - | - | - |
| Comilla | 1-3(28) | 1-5(20) | 1-5(32) | 1-3(40) | 2-5(31) | 1-3(2) |
| | 4-7(22) | 6-10(25) | 6-10(21) | 4-7(16) | 6-10(17) | >3(1) |
| | 8-11(13) | 11-15(7) | >10(1) | 15-16(12) | - | - |
| | - | >15(3) | - | - | - | - |
| Jessore | 0-2(76) | 1-3(15) | 0-2(29) | 1-2(29) | 1-3(30) | - |
| | 3-5(15) | 4-7(4) | 3-5(29) | 3-5(38) | 7-10(9) | - |
| | 7-8(3) | 15-30(5) | 6-10(12) | 6-10(8) | 12-15(2) | - |
| | - | >30(3) | >10(5) | - | - | - |
| Bogra | 2-5(47) | 7-10(4) | 7-10(6) | 2-5(19) | 5-7(3) | - |
| | 6-8(28) | 15-20(7) | 15-20(3) | 7-10(30) | 10(1) | - |
| | >8(3) | 1-5(35) | >20(2) | - | - | - |

Number in parentheses indicates the percentages of sampled farmers sold vegetables after spray.

(Since a single farmer marketed vegetables in different DAS, values in parentheses can not be considered as cumulative %).

Survey results also revealed that a considerable number of farmers marketed their harvested vegetables in the same day of spraying (Table 17). Majority of the sampled farmers marketed vegetables after 1-3 days.

Repeated use or overuse of insecticides in vegetables led to assume that the applied insecticides might not render sufficient field control. Possibly due to impurity, lower dose, inappropriate selection and timing of spray and development of resistance. Development of resistance is suspected to be the likely outcome of misuse and overuse of insecticides (Tabashnik et al. 1987, Forrester 1990, Phillips et al. 1990). Vegetable farmers marketed their products without bothering Pre Harvest Interval (PHI) as indicated by survey results, which poses threat to consumers for intoxication.

## 9.3 Hotspots of pesticide usage

A study was made by Meisner (2004) to identify the hotspots of pesticide usage in Bangladesh. He surveyed Bogra, Chapainawabganj, Rajshahi, Rangpur, Chittagong, Comilla, Jessore, Kishergonj, Munshiganj, Narsingdhi and Mymensingh (Fig. 5).

Accoerding to the survey results, pesticide use is on the rise in Bangladesh. In 1994-95, Dhaka, Rajshahi, Rangpur, Comilla, Rangamati and Barisal had relatively higher use of pesticdes than others while in 1999-2000 that has intensified further excepting Rangamati. Pesticides are divided into 4 major hazard groups by WHO: Category Ia and Ib (extremely hazardous); Category II (moderately hazardous); Category III (slightly hazardous) and Category U (least hazardous or unlikely to present

acute hazard under normal use). Survey results revealed that 19% of the sampled farmers had used class Ia or Ib (Table 18) and their use was concentrated in the districts of Rangpur, Rajshahi, Jessore and Dhaka.




*Fig. 5. Map of Bangladesh highlighting the surveyed districts.*

**Table 18. Frequency of pesticide application by WHO classification**

| Classifacation | By farmers application frequency (%) | By farmers application dose or load (%) |
|---|---|---|
| Class Ia and Ib | 19.12 | 05.71 |
| Class II | 58.58 | 41.51 |
| Class III | 07.50 | 15.01 |
| Class U | 14.80 | 37.70 |

*Source : Meisner (2004)*

It is reported that Heptachlor, Endrin and DDT are still in use in the districts of Comilla, Chittagonj, Dhaka, Rajshahi and Mymensingh.

## 9.4 Method of pesticide application

As per international standard, pesticides should be applied following I) right dose; II) right time of spray; III) right sprayer; IV) right weather and V) right protective measure. Pesticide applicators should use protective clothing (Fig. 6).

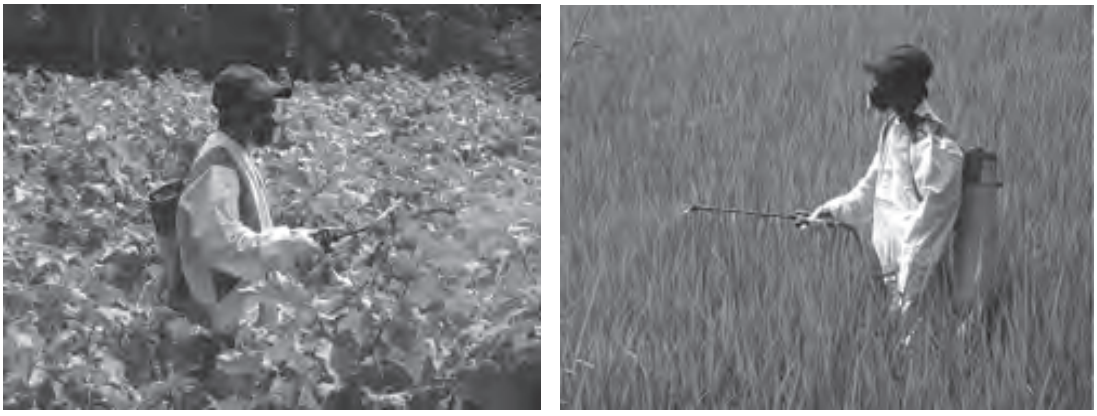
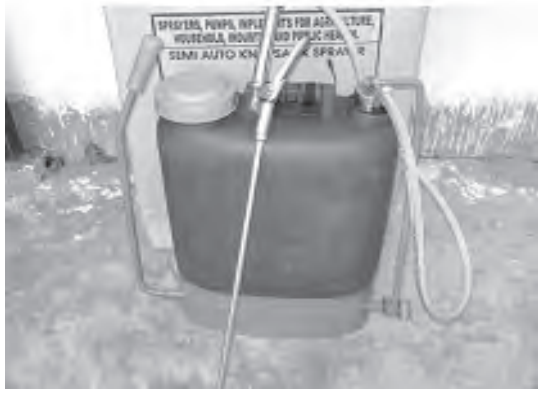


*Fig. 6. An ideal clothing for pesticide applicator*

Traditionally the following sprayers are used by Bangladeshi farmers (Fig. 7). In many areas like Chittagonj, Pitchkari (Fig. 8) is still used while Broom (Fig. 9) is used in Rangpur.



**Knapsack Sprayer**



**Foot Pump Sprayer**



**Hand Sprayer**



**Power Sprayer**

*Fig. 7. Traditionally used sprayers.*



*Fig. 8. Pitchkari*

Under an on-going project (2005-2010), Entomology Division of BARI has conducted a nation-wide training-discussion program across the country involving 2100 farmers of Dhaka, Comilla, Chittagong, Cox's bazar, Norshingdi, Kishergonj, Jamalpur, Tangail, Sherpur, Gaibandha, Rangpur, Kurigram, Nilphamari, Dinajpur, Rajshahi, Chapainawabgonj, and Jessore. It is reported that <5% farmers follow standard procedure of pesticide application. Majority of the farmers use inappropriate procedures either using faulty sprayer (>50%) or wrong pesticide selection (>40%). In-terms of protective clothing, a negligible (<10%) portion use mask or a piece of cloth covering mouth and nose (Fig. 10). Health risk of pesticide applicator in Bangladesh is enormous because of their ignorance and callousness (Fig.11).



*Fig. 9. Broom*



*Fig. 10. Farmer covers his mouth and nose with mask or a piece of cloth.*



*Fig. 11. Careless spray-man, smoking and spraying.*

## 10. Pesticide residue on food, water, soil and environment

Pesticide being toxic can become a potential hazard to the manufacturers, the user, the public at large and the environment. Pesticide can produce negative impacts, both social and private (Antle and Pingali, 1994). Extensive deliberate use of pesticides has resulted in contamination of our vital supplies, air, water and food. The risk to humans may be short term as well as long term depending on the persistence of the pesticide and the exposure period. Pesticide residue in food has become a consumers' safety issue and the consumers have the right to know how much pesticide get incorporated in the food they eat. The detection, identification and quantification of pesticide in the food are becoming the public interest. But very little references are available on the presence of pesticides in vegetables and food in Bangladesh (Khatoon *et. al.*, 2004).

Several supervised trials were conducted by Pesticide Analytical Laboratory (PAL) for the determination of the rate of degradation of Diazinon, Carbosulfan, Quinalfos and Carbofuran residues in brinjal, string bean and sugarcane. Analytical results are presented in the Tables 19-21. As indicated by the Table 19, Diazinon residues were present in brinjal samples up to 6 days after spray (DAS). Up to 4-DAS, the residue levels were above MRL. Almost similar results were found for Carbosulfan (Table 20) and Quinalphos Table (21).

**Table 19. Quantity of residue of Diazinon (Rison 60EC) estimated from brinjal**

| Days after spraying | Application rate (ml/L) | Sample weight (g) | Total volume prepared (ml) | Injected volume (µl) | Concentration obtained in final volume (ppm) | Residue of Rison left (ppm) |
|---|---|---|---|---|---|---|
| 0 | 2 | 20 | 5 | 2 | 8.914 | 2.228 |
| 1 | 2 | 20 | 5 | 2 | 7.559 | 1.889 |
| 2 | 2 | 20 | 5 | 2 | 6.700 | 1.675 |
| 3 | 2 | 20 | 5 | 2 | 3.047 | 0.761 |
| 4 | 2 | 20 | 5 | 2 | 1.746 | 0.436 |
| 5 | 2 | 20 | 5 | 2 | 1.585 | 0.396 |
| 6 | 2 | 20 | 5 | 2 | 1.191 | 0.297 |

FAO/WHO Codex Alimentarius Commission Recommended
MRL of Diazinon : 0.5 ppm; ADI of Diazinon : 0.002 ppm

**Table-20. Quantity of residue of Carbosulfan (Sunsulfan 20EC) estimated from Brinjal**

| Days after spraying | Application rate (ml/L) | Sample weight (g) | Total volume prepared (ml) | Injected volume (µl) | Concentration obtained in final volume (ppm) | Residue of Sunsulfan left (mg/kg) |
|---|---|---|---|---|---|---|
| 0 | 2 | 20 | 5 | 2 | 3.529 | 0.882 |
| 1 | 2 | 20 | 5 | 2 | 3.197 | 0.799 |
| 2 | 2 | 20 | 5 | 2 | 2.557 | 0.639 |
| 3 | 2 | 20 | 5 | 2 | 1.195 | 0.299 |
| 4 | 2 | 20 | 5 | 2 | 0.417 | 0.104 |
| 5 | 2 | 20 | 5 | 2 | 0.333 | 0.083 |
| 6 | 2 | 20 | 5 | 2 | 0.311 | 0.078 |
| 7 | 2 | 20 | 5 | 2 | 0.305 | 0.076 |

FAO/WHO Codex Alimentarius Commission Recommended
MRL of Carbosulfan : 0.2 mg/kg crop; ADI of Carbosulfan : 0.002mg/kg body weight

**Table 21. Quantity of residue of Quinalphos (Kinalux 25 EC) estimated from yard long bean**

| Days after spraying | Application rate (ml/L) | Sample weight (g) | Total volume prepared (ml) | Injected volume (µl) | Concentration obtained in final volume (ppm) | Residue of Kinalux left (mg/kg) |
|---|---|---|---|---|---|---|
| 0 | 2 | 20 | 5 | 2 | 2.713 | 0.678 |
| 1 | 2 | 20 | 5 | 2 | 2.209 | 0.552 |
| 2 | 2 | 20 | 5 | 2 | 1.679 | 0.419 |
| 3 | 2 | 20 | 5 | 2 | 1.224 | 0.306 |
| 4 | 2 | 20 | 5 | 2 | 0.856 | 0.214 |
| 5 | 2 | 20 | 5 | 2 | 0.657 | 0.164 |
| 6 | 2 | 20 | 5 | 2 | 0.349 | 0.087 |

FAO/WHO Codex Alimentarius Commission Recommended
MRL of Kinalux : 0.2 mg/kg crop; ADI of Kinalux : 0.002mg/kg body weight

In a collaborative research conducted by BARI and BSRI (Bangladesh Sugarcane Research Institute) during 2006-2007, Carbofuran residue was found to be present in soil up to 60-DAA (Days After Application). Of 60- DAA, Carbofuran was above MRL up to 15-DAA (Table 22). Up to 7-DAA, Carbofuran existed in soil >4 times of MRL. In plant samples, Carbofuran residues were also found up to 60-DAA but their level went below ADI within 3-DAA (Table 23).

**Table 22. Quantity of residue of carbofuran (Furadan 3g) estimated from soil and plant samples**

| Sample Type | Detected quantity of carboruran residue (PPm) after days of application | | | | | |
|---|---|---|---|---|---|---|
| | 0 DAA | 3 DAA | 7 DAA | 15 DAA | 30 DAA | 60 DAA |
| Soil | 25.00 | 3.33 | 2.12 | 0.600 | 0.040 | 0.020 |
| Plant Sample | 0.004 | 0.08 | 0.04 | 0.015 | 0.003 | 0.002 |

In another study, attempt was made to detect and quantify the left over residue of six commonly used pesticides Cypermethrin, Diazinon, Quinalphos, Fenitrothion and Malathion in hyacinth bean, brinjal, cauliflower, bitter gourd and yard long bean samples collected from farmers field and market of different regions like Comilla, Dhaka, Jamalpur, Jossore, Gazipur, Khagrachari, Rajshahi, Rangpur and Tangail for the comparison between the detected residue level with maximum residue limit (MRL) set by FAO. Results are shown in Tables 23-28. Among the nineteen analyzed hyacinth bean samples, only four samples of different locations contained single residue of different pesticides except Diazinon (Table 23). Twenty three brinjal samples were collected and analyzed of which seven samples had the residue of different pesticides except Fenitrothion and Malathion. Cypermethrin is the frequent one which was found in five samples (Table 24). Among the fourteen cauliflower samples, three contained Cypermethrin residue and in another three samples residue of Quinalphos was detected (Table 25). Four samples of bitter gourd and two samples of yard long bean were analyzed and no left over residue was found in those samples (Table 26 & 27). Besides these, some soil, water, yard long bean, brinjal and bitter gourd samples were collected from Maloncho, Dhamrai, Dhaka and were analyzed. Of these, one sample of soil, one of brinjal and one sample of yard long bean contained Cypermethrin residue (Table 28).

**Table 23: Quantity of residue of different insecticides estimated from Hyacinth bean samples collected from different regions of Bangladesh**

| Sample ID | | Quantity of detected residue (ppm) | | | | |
|---|---|---|---|---|---|---|
| **Location** | **Sample code** | **Cypermethrin** | **Diazinon** | **Quinalphos** | **Fenitrothion** | **Malathion** |
| Comilla | CBE1 | - | - | - | - | - |
| | CBE2 | - | - | - | - | - |
| | CBE3 | - | - | - | - | - |
| | CBE4 | - | - | - | - | - |
| Dhaka | DBE1 | 0.20 | - | - | - | - |
| | DBE2 | - | - | - | - | - |
| Jamalpur | JBE1 | - | - | - | - | - |
| | JBE2 | - | - | - | - | - |
| Jessore | JBE1 | - | - | - | - | - |
| | JBE2 | - | - | - | - | - |
| | JBE3 | - | - | - | - | - |
| Khagrachari | KBE | - | - | - | - | - |
| Rajshahi | RBE1 | - | - | - | - | - |
| | RBE2 | - | - | - | 0.030 | - |
| Rangpur | RBE1 | - | - | - | - | 0.315 |
| | RBE2 | - | - | - | - | - |
| | RBE3 | - | - | 0.055 | - | |
| Tangail | TBE1 | - | - | - | - | - |
| | TBE2 | - | - | - | - | - |

**Table 24: Quantity of residue of different insecticides estimated from Brinjal samples collected from different regions of Bangladesh**

| Sample ID | | Quantity of detected residue (ppm) | | | | |
|---|---|---|---|---|---|---|
| **Location** | **Sample code** | **Cypermethrin** | **Diazinon** | **Quinalphos** | **Fenitrothion** | **Malathion** |
| Comilla | CB1 | - | - | - | - | - |
| | CB2 | - | - | 0.069 | - | - |
| | CB3 | 0.343 | - | - | - | - |
| Dhaka | DB1 | - | 0.024 | - | - | - |
| | DB2 | - | - | - | - | - |
| | DB3 | - | - | - | - | - |
| Jamalpur | JB1 | 0.130 | - | - | - | - |
| | JB2 | - | - | - | - | - |
| Jessore | JB1 | - | - | - | - | - |
| | JB2 | - | - | - | - | - |
| | JB3 | - | - | - | - | - |
| | JB4 | 0.047 | - | 0.061 | - | - |
| Gazipur | GB1 | - | - | - | - | - |
| | GB2 | - | - | - | - | - |
| Khagrachari | KB1 | - | - | - | - | - |
| | KB2 | - | - | - | - | - |
| | KB3 | - | - | - | - | - |
| Rajshahi | RB | - | - | - | - | - |
| Rangpur | RB1 | - | - | - | - | - |
| | RB2 | 0.165 | - | - | - | - |
| | RB3 | 0.111 | - | - | - | - |
| Tangail | TB1 | - | - | - | - | - |
| | TB2 | - | - | - | - | - |

**Table 25: Quantity of residue of different insecticides estimated from Cauliflower samples collected from different regions of Bangladesh**

| Sample ID | | Quantity of detected residue (ppm) | | | | |
|---|---|---|---|---|---|---|
| Location | Sample code | Cyperme thrin | Diazinon | Quinalphos | Fenitrothion | Malathion |
| Comilla | CC1 | - | - | 0.050 | - | - |
| | CC2 | 0.407 | - | - | - | - |
| Dhaka | DC | - | - | - | - | - |
| Jamalpur | JC | 0.226 | - | - | - | - |
| Jessore | JC1 | - | - | 0.029 | - | - |
| | JC2 | - | - | - | - | - |
| | JC3 | - | - | - | - | - |
| Khagrachari | KC1 | - | - | - | - | - |
| | KC2 | - | - | - | - | - |
| Rajshahi | RC1 | - | - | - | - | - |
| | RC2 | - | - | - | - | - |
| Rangpur | RC1 | 0.025 | - | - | - | - |
| | RC2 | - | - | - | - | - |
| Tangail | TC | - | - | 0.028 | - | - |

**Table 26: Quantity of residue of different insecticides estimated from Bitter gourd samples collected from different regions of Bangladesh**

| Sample ID | | Quantity of detected residue (ppm) | | | | |
|---|---|---|---|---|---|---|
| Location | Sample code | Cyperme thrin | Diazinon | Quinalphos | Fenitrothion | Malathion |
| Rangpur | RBG | - | - | - | - | - |
| Gazipur | GBG1 | - | - | - | - | - |
| | GBG2 | - | - | - | - | - |
| Khagrachari | KBG | - | - | - | - | - |

**Table 27: Quantity of residue of different insecticides estimated from Yard long bean samples collected from different regions of Bangladesh**

| Sample ID | | Quantity of detected residue (ppm) | | | | |
|---|---|---|---|---|---|---|
| Location | Sample code | Cypermet hrin | Diazinon | Quinal phos | Fenitrothion | Malathion |
| Gazipur | GLB | - | - | - | - | - |
| Khagrachari | KLB | - | - | - | - | - |

**Table 28: Quantity of residue of different insecticides estimated from Soil, Water, Yard long bean, Brinjal and Bitter gourd samples collected from Maloncho, Dhamrai, Dhaka**

| Sample ID | Sample code | Quantity of detected residue (ppm) | | | | | |
|---|---|---|---|---|---|---|---|
| | | Cyperme thrin | Diazinon | Quinalphos | Fenitrothion | Malathion | DDT |
| Soil | DS1 | 0.043 | - | - | - | - | - |
| | DS2 | - | - | - | - | - | - |
| | DS3 | - | - | - | - | - | - |
| Water | DW | - | - | - | - | - | - |
| Yard long bean | DYLB | 0.071 | - | - | - | - | - |
| Brinjal | DB1 | - | - | - | - | - | - |
| | DB2 | - | - | - | - | - | - |
| | DB3 | 0.237 | - | - | - | - | - |
| Bitter gourd | DBG | - | - | - | - | - | - |

A total of 149 commercial samples of fish (Rui, Katla, Shrimp, White fish, Fin fish, Guchi & Others) were collected from Department of Fisheries of Dhaka, Khulna and Chittagonj. Of 149, 71 samples had insecticide residue (Table 29). From Dhaka, seven samples were analyzed, among them 3 had insecticide residue. The range of detected carbofuran residue was 0.29-1.13 ppm, Diazinon residue was 1.38 ppm, Carbaryl residue was 0.35 ppm and

**Table 29: Analytical results of pesticide residue in different fish samples collected from Dhaka, Khulna and Chittagonj region**

| Area of collection | Category of sample | No. of sample | No. of sample having pesticide residue. | Name of detected pesticide | Level of residue (ppm) | ADI (mg/Kg body weight) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Carbofuran, Carbaryl & Chlorpyrifos | Diazinon | Fenvalerate & DDT | Heptachlor |
| Dhaka | Rui | 3 | 1 | Carbofuran | 0.38 | 0.01 | 0.002 | 0.02 | 0.0001 |
| | | | | Diazinon | 1.38 | | | | |
| | | | | Carbaryl | 0.35 | | | | |
| | Katla | 1 | - | - | - | | | | |
| | Others | 3 | 2 | Carbofuran | 0.29-1.13 | | | | |
| | | | | Fenvalerate | 0.009 | | | | |
| **Total** | | **7** | **3** | | | | | | |
| Khulna | Shrimp | 43 | 34 | Carbofuran | 0.08-1.25 | | | | |
| | | | | Diazinon | 0.02-3.49 | | | | |
| | | | | Carbaryl | 0.06 | | | | |
| | | | | DDT | 0.05-0.10 | | | | |

| Area of collection | Category of sample | No. of sample | No. of sample having pesticide residue. | Name of detected pesticide | Level of residue (ppm) | ADI (mg/Kg body weight) | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Carbofuran, Carbaryl & Chlorpyrifos | Diazinon | Fenvalerate & DDT | Heptachlor |
| Khulna | Factory product | 22 | 09 | Carbofuran | 0.03-0.62 | | | | |
| | | | | Diazinon | 0.25-3.32 | | | | |
| | | | | Carbaryl | 0.03 | | | | |
| | | | | DDT | 0.04-0.12 | | | | |
| | White fish | 8 | 01 | DDT | 0.05 | | | | |
| | Fin fish | 09 | 01 | DDT | 0.07 | | | | |
| **Total** | | **82** | **45** | | | | | | |
| Chitta-gong | Shrimp | 30 | 11 | Carbofuran | 0.17-0.89 | | | | |
| | | | | Diazinon | 0.03-2.75 | | | | |
| | | | | Fenvalerate | 0.01-0.03 | | | | |
| | | | | Chlorpyrifos | 0.005 | | | | |
| | | | | DDT | 0.13 | | | | |
| | Guchi | 4 | - | - | - | | | | |
| | Others | 26 | 12 | DDT | 0.06-0.52 | | | | |
| | | | | Heptachlor | 0.19-1.15 | | | | |
| **Total** | | 60 | 23 | | | | | | |
| **Grand Total** | | **149** | **71** | | | | | | |

Fenvalerate residue was 0.009 ppm. In Khulna, out of 82 samples 45 contained insecticide residue. The range of detected Carbofuran residue was 0.03-1.25 ppm, Diazinon residue was 0.02-3.49 ppm, Carbaryl residue was 0.03-0.06 ppm and DDT was 0.04-0.12 ppm. In Chittagong, out of 60 samples 23 had insecticide residue. The range of detected Carbofuran residue was 0.17-0.89 ppm, Diazinon residue was 0.03-2.75 ppm, Fenvalerate residue was 0.01-0.03 ppm, Chlorpyrifos residue was 0.005 ppm, Heptachlor residue was 0.19-1.15 ppm and DDT was 0.06-0.52 ppm.

## 11. Past experience and present status of IPM in Bangladesh

### 11.1 Background and progress

Integrated Pest Management (IPM) is a broad ecological approach to control pests using various pest control tactics in a compatible manner. In the contemporary usage, IPM is not limited to dealing with pesticides and pest management, in fact, IPM is holistic approaches to crop production based on sound ecological understanding and in this sense IPM could even be termed as an ICM (Integrated Crop Management). IPM aims at empowering the farmers so that they become able to grow a healthy crop, and increase the farm output and income on a sustainable basis while improving the environment and community health. Until recently, insecticides were the major means of insect control in all crops including vegetables in Bangladesh but to avoid the sole reliance, the IPM activity in Bangladesh was initiated in 1981 through the FAO inter-country IPM project in rice in South and South East Asia, which subsequently expanded through other projects like ADB funded DAE – CAD

(Department of Agricultural Extension – Command Area Development) in 1997 – 2000, FAO – EC-CDB Regional Cotton IPM program in 1999 in 1999, CARE Bangladesh INTERFISH (Integrated Rice and Fish) program in 1993 and the NOPEST (New Options in Pest Management) program in 1995, DANIDA - DAE – SPPS (Strengthening Plant Protection Services) project phase 1 in 1997 – 2002, DANIDA funded AID-Comilla (Association for Integrated Development) project in 1999 – 2001. All these projects mostly concentrated on rice IPM. These projects have developed IPM technologies for rice insect pests and undertaken programs for their dissemination through T & V system and then lastly by establishing the Farmers Field Schools (FFSs) across the country. The process is still ongoing for enhancing the adoption by general farmers. Subsequently efforts were undertaken to develop vegetable IPM through the Vegetable IPM-ICP project in 1996 -1999, UNDP/FAO -DAE IPM project in 1996 - 2001, DANIDA - DAE – SPPS (Strengthening Plant Protection Services) project phase 2 in 2002 to 2006, and USAID - IPMCRSP (IPM Collaborative Research and Supportive Program) in 1993 – 1998 – to date. The IPM activities have created significant awareness in the country and have made significant impact in reducing the use of pesticides by the IPM trained farmers. But the IPM tactics so far tested under these projects have covered only very few insect pests of only few vegetables and have not been adopted as a common practice by the general farmers. Meanwhile Bangladesh Government has adopted the national IPM policy to strengthen the program.

## 11.2 The national IPM policy

According to IPM Policy of Bangladesh, the term IPM includes elements contributing to an effective, safe, sustainable and economically sound crop protection system. It is not limited to pest management system alone.

Clearly, IPM conserves the natural resources such as the soil, flora and fauna and ensures reliability and stability of agricultural production. Ecological and economic sustainability of agricultural production is the long- term goal of IPM. In fact effective IPM-

- Increases self- reliance of farmers by promoting locally developed and adapted crop ma management practices;
- Improves the field conditions for beneficial insects and generate extra income as well as nutritious food for the farmers;
- Promotes community activities and the formation of farmer groups (e.g. IPM clubs) and facilitates empowerment of both female and male farmers;
- Reduces the risks to farmers, general public and the environment; these include the risks of crop loss and all risks related to the use of pesticides;
- Brings enormous savings by reducing the use of farm chemicals;
- Reduces use of pesticides at the national level;
- Improves the field condition for beneficial insects and generate extra income as well as nutritious food for the farmers and
- Promotes community activities and the formation of farmers group and facilitates empowerment of both female and male farmers.

### 11.2.1 Objective of the IPM policy

The objective of the IPM policy is:

- To enable farmers to grow healthy crops in an increased manner and thereby increase their income on a sustainable basis while improving the environment and community health.

  To achieve the above mentioned objective, IPM policy will pursue the following strategies:

  - To expand IPM on a sustainable basis by establishing a national IPM program and
  - To facilitate co-ordination of all IPM activities in Bangladesh.

## 11.3 IPM of rice

Integrated Pest Management for rice is being implemented through three projects in Bangladesh, INTERFISH, NOPEST and GOLDA, and are supported by DFID and the EU. They involve farmers attending farmer field schools (schools without walls) during a whole rice season. They meet each week to learn a new set of agro-ecological principles, concepts and terms relating to rice, pest and predator management. This is an adult-education approach to increasing food production. Some 6000 farmer field schools have been completed, with about 150,000 farmers adopting more sustainable rice production. The programs also emphasize fish cultivation in paddy, and vegetable cultivation on rice field dikes. Fish can only be raised if pesticides are not used.

Farmers have benefited in several ways: most have reduced or stopped using pesticides with no loss of rice yield, so reducing the costs of production; they raise fish in the rice fields which provide a new source of protein and income; and vegetables are grown on paddy field dikes. Some are mow experimenting with shrimps and taro in rice fields. As a result, the 150,000 participating households are now food secure throughout the year.

Rice yields have improved by 5-7% (3.9to4.2t/ha for irrigated and 2.7-2.9t/ha for rain-fed rice), and costs of production have fallen owing to reduced use of pesticides. Some 80% of farmer field school participants no longer use pesticides. The fish-vegetable systems have been shown to produce synergistic benefits: additional income from fish is $156/ ha, from vegetables on dikes $23/ha, but fish and vegetables together bring an additional $250/ha. This can buy 2000 kg rice-enough to feed 6-7 people.

IPM packages involving use of pesticides based on Economic Threshold have been developed by BRRI.

## 11.4 IPM of eggplant

At least fifteen insect pests and one mite pest attack eggplant. Among them, eggplant shoot and fruit borer (ESFB), leafhopper and epilachna beetle cause serious damage to the crop. However, none of the insect pests build up populations equally in every season and in all growing regions. The incidence and infestation of insect pests predominate in summer season. Very successful IPM package including the use of sex pheromone, mechanical control and field sanitation has been developed for managing the ESFB.

## 11.5 IPM of cucurbits

Cucurbits form the largest group of vegetables including sweet gourd, bitter gourd, ribbed gourd, sponge gourd, teasel gourd, white gourd, ash gourd and cucumber as the major ones. The insect pests that infest all cucurbits are almost common. However, their infestation intensity may vary to some extent in different cucurbits. Among all, Fruit fly is the severe pest common to all cucurbits.

The other major insect pests of cucurbits are Epilachna beetle and Pumpkin beetle. Successful IPM pacakges have been developed for managing these pests.

### 11.6 IPM of country bean

Country bean, *Dolichos lablab* is a popular vegetable grown in winter season and some varieties (IPSA 1 and 2) grown in summer also. Several insect pests infest country bean but the bean pod borer only cause severe damage. The other major insect pests are bean aphids, red mites and thrips. Successful IPM package has been developed for managing bean pod borer and other pests.

### 11.7 IPM of cabbage and cauliflower

Cabbage and cauliflower are grown in winter. The crops are infested by a number of insect pests, which include cutworm, tobacco caterpillar and diamondback moth as the major insect pests. The research is underway for developing more effective IPM package against these pests.

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## 13. Appendix

### (a) Legal documents

# THE PESTICIDES ORDINANCE, 1971

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# THE PESTICIDES ORDINANCE, 1971

ORDINANCE NO. II OF 1971

[25th *January*,1971]

## An Ordinance to regulate the import, manufacture, formulation, sale, distribution and use of pesticides♣

WHEREAS it is expedient to regulate the import, manufacture, formulation, sale, distribution and use of pesticides and for matters ancillary thereto;

[1][*** ]

NOW, THEREFORE, in pursuance of the proclamation of the 25th day of March, 1969, read with the Provisional Constitution Order, and in exercise of all powers enabling him in that behalf, the president is pleased to make and promulgate the following ordinance:-

## CHAPTER I

## INTRODUCTORY

Short title, Extent and Commencement

1. (1) This Ordinance may be called the [2][*** ] Pesticides Ordinance 1971,

(2) It extends to the whole of Bangladesh.

(3) It shall come into force at once.

Application of Other laws not barred

2. The provisions of this Ordinance shall be in addition to, and not in derogation of, the provisions of the Poisons Act, 1919, and any other law for the time being in force.

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♣ Throughout this Ordinance, the words "Bangladesh", "Government" and" Taka" were substituted for the words "Pakistan", "Central Government" and "rupees" respectively by section 2 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980).

[1] The second paragraph was omitted by section 3 of the Agriculture Pesticides (Amendment) Act, 1980(Act No V of 1980).

[2] The word "Agricultural" was omitted by section 2 of the Agricultural Pesticides (Amendment) Ordinance, 1983 (Ordinance No. XXV of 1983).

3. In this Ordinance, unless there is anything repugnant in the subject for context the expression- Definitions

(a) "adulterated" when used with reference to a pesticide, means any pesticide the strength or purity of which falls below the professed standard or quality which is expressed on its label or under which it is sold or a pesticide any valuable ingredient of which has been wholly or partially extracted;

(b) "advertise" means to make known by publication or distributing of any advertisement, circular or other notice;

(c) "brand" means the trade name applied by an importer manufacturer, formulator or vendor to the goods imported, manufactured or sold by him;

(d) "Committee" means the [1][***] pesticide Technical Advisory Committee constituted under this ordinance;

(e) "formulation" means the process by which a pesticide is converted, by mixing with other substances into a form in which it is ready to be used;

(f) "fungi" means all rusts, smuts mildews, moulds, yeasts and similar forms of plant life prescribed in this behalf and includes bacteria affecting plant life;

(g) "Government Analyst" means a Government Analyst appointed under this Ordinance;

(h) "guarantee" means the statement indicating the strength, effectiveness and other qualities of a brand of a pesticide which an importer, manufacturer, formulator vendor or person holding stock for sale of a brand of a pesticide is required to submit under the rules at the time of applying for the registration of the brand;

(i) "Inspector" means an Inspector appointed under this ordinance;

(j) "ingredient" means any material used in making a pesticide;

[1] The word "Agriculture' was omitted by section 3 of the Agriculture pesticides (Amendment) Ordinance, 1983 (Ordinance No. XXV of 1983).

(k) "insect" means any of the small invertebrate animals commonly known as insects and includes such forms of animal life as may be prescribed;

(l) "label" means the written, printed or graphic matter on, or attached to, a pesticide or the immediate container thereof, and the outside container or wrapper of the retail package, if any, of the pesticide;

(m) "package" includes every container;

(n) "pesticide", means any substance or mixture of substances used or represented as a means for preventing, destroying, repelling, mitigating or controlling, directly or indirectly, any insect, fungus bacterial organism, nematodes, virus, weed, rodent, or other plant or animal pest; but does not include a substance which is a 'drug' within the meaning of the Drugs Act, 1940;

(o) "prescribed" means prescribed by rules made under this Ordinance;

(p) "registration number" means a specific number assigned by the Government to each registered brand of pesticide;

(q) "rules" means rules made under this Ordinance; and

(r) "weed" means any plant which grows where not wanted.

## CHAPTER II

## IMPORT, MANUFACTURE, FORMULATION, [1][REPACKING,] SALE, DISTRIBUTION AND USE OF PESTICIDES

Pesticide to be registered

4. No person shall import, manufacture, formulate, [2][repack,] sell, hold in stock for sale or in any manner advertise any brand of pesticide which has not been registered in the manner hereinafter provided.

---

[1] The word and comma "REPACKING," were inserted by section 4 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980).

[2] The word and comma "repack," were inserted by section 5 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980).

Application for registration of pesticide

5. (1) Any person intending to import, manufacture, formulate, [1][repack,] sell, offer for sale, hold in stock for sale or advertise any brand of a pesticide may apply to the Government for the registration of the brand under such name as he may indicate in the application.

(2) An application under sub-section (1) shall be in such form, be accompanied by such fee and contain such statements and information as may be prescribed.

(3) Where the person making an application under sub-section (1) is not domiciled in Bangladesh, the application shall, besides such person, be signed by his agent or representative in Bangladesh.

(4) Upon the receipt of an application under sub-section (1), the Government may register a brand of a pesticide by the name indicated in the application, if it is satisfied that –

(a) the brand is not such as would tend to deceive or mislead the purchaser with respect to the guarantee relating to the pesticide or its ingredients or the method of its preparation; or

(b) the guarantee relating to the pesticide or its ingredients is not the same as that of another registered brand or is not so similar thereto as to be likely to deceive; or

(c) it is effective for the purpose for which it is sold or represented to be effective; or

(d) it is not generally detrimental or injurious to vegetation, except weeds , or to human or animal health , even when applied according to directions.

(5) When it registers a brand of a pesticide on the application of any person, the government shall grant to him a certificate of registration in such form as may be prescribed.

[1] The word and comma “repack” were inserted by section 6 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980).

Period for which registration shall be effective

6. The registration of a brand of a pesticide shall be effective from the date of its registration until the thirtieth day of June of the third year following the year of registration.

Cancellation of registration

**7.** If, at any time after the registration of the brand of a pesticide, the Government is of opinion that the registration has been secured in violation of any of the provisions of this Ordinance or the rules or that the pesticide is ineffective against pests or hazardous to vegetation, other than weeds, or to human or animal life, the Government may, after giving to the person on whose application it had been registered an opportunity of being heard, cancel the registration.

Renewal of registration

8. (1) The Government may, on the application of the importer , manufacturer, formulator, [1][re-packer,] vendor or stock-holder of a registered brand of a pesticide in the guarantee or ingredients of which no change has taken place since the date of its registration, renew the registration of the brand for a further period of three years.

(2) An application under sub-section (1) shall be in such form and be accompanied by such fee as may be prescribed and shall be made before the expiration of the period for which the registration of the brand to which it relates is effective.

Requirement of licence

[2][8A. (1) Any person may, after obtaining a license granted by the licensing authority, import, manufacture, formulate, repack, sell, offer for sale, hold in stock for sale, involve in pest control operation on commercial basis or advertise in any manner any brand of registered pesticide.

(2) Any person intending to import, manufacture, formulate, repack, sell, offer for sale, hold in stock for sale, involve in pest control operation on commercial basis or advertise any brand of registered pesticide may apply for a licence to the licensing authority.

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[1] The word and comma “re-packer,” were inserted by section 7 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No V of 180).

[2] Section 8A was inserted by section 8 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980).

(3) An application under sub-section (2) shall be in such form, be accompanied by such fee and contain such statement and information as may by prescribed.

(4) A licence granted under this section shall be in such form and subject to such conditions as may be prescribed.

(5) A licence granted under this section shall, unless suspended or cancelled under sub-section (6), remain valid for a period of two years from the date of issue of the licence and may, on payment of such fees as may be prescribed, be renewed for a like term.

(6) The licensing authority shall have power to suspend or cancel the licence:

Provided that no licence shall be suspended or cancelled without giving the licensee an opportunity of showing cause and of being heard person.

(7) Any licensee aggrieved by an order of the licensing authority under sub-section (6) may, within sixty days from the date of the order and on payment of such fee as may be prescribed prefer an appeal to the Government whose decision in the matter shall be final.

(8) In this section, the expression "licensing authority" shall mean such authority as may be prescribed].

Importation may be prohibited

**9.** If any pesticide imported into Bangladesh is found to be adulterated or incorrectly or misleadingly tagged, labelled or named, or if its sale in any way contravenes any of the provisions of this Ordinance, the Government may, by notification in the *official Gazette*, prohibit the further import of the pesticide into Bangladesh.

Labelling of packages

**10.** No person shall sell or offer or expose for sale, or advertise or hold in stock for sale any pesticide unless each package containing the pesticide, and every tag or label durably attached thereto, is branded or marked in printed characters in such form and in such manner as may be prescribed.

Power to fix maximum price of pesticides, etc.

[1][10A.(1) The Government may, by notification in the *official Gazette*, fix-

(a) the maximum price at which any pesticide specified in the notification may be sold;

(b) the maximum rate of commission that may be allowed to a wholesaler or retailer for distributing or sale of pesticide.

(2) The Government may, for the purpose of sub-section (1), require a licensee to furnish such information as may be necessary.]

Storage and use of pesticides

11. No person shall store or use any pesticide save in accordance with rules made under this ordnance.

## CHAPTER III

## THE [2][***] PESTICIDE TECHNICAL ADVISORY COMMITTEE, ETC.

The agriculture pesticide Technical Advisory Committee

12. (1) As soon as may be after the commencement of this Ordinance, the Government shall constitute a committee, to be called the [3][* * *] Pesticide Technical Advisory Committee, to advise the Government on technical matters arising out of the administration of this Ordinance and to perform any other functions assigned to it by or under this Ordinance.

(2) The Committee shall consist of a Chairman and such number of Vice-Chairmen and other members, being officers of the [4][Government and] persons representing trade and industry engaged in pesticide business, as the Government may appoint:

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[1] Section 10 A was inserted by section 9 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980).

[2] The word "AGRICULTURE" was omitted by section 4 of the Agricultural Pesticides (Amendment) Ordinance, 1983 (Ordinance No. XXV of 1983)

[3] The word "Agriculture" was omitted by section 5 of the Agricultural Pesticides (Amendment) Ordinance, 1983 (Ordinance No. XXV of 1983).

[4] The words "Government and" were substituted for the words "Central government or a Provincial Government or" by section 10 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980 ).

[1][***]

(3) The names of the Chairman, the Vice-Chairmen and the other members of the committee shall be published in the *official Gazette*.

(4) The Government shall appoint one of the members of the committee, being an officer of [2][the] Government, to be the Secretary of the Committee for the period for which he is such a member.

(5) The non-official members of the committee shall hold office for a term of three years and shall be eligible for re-appointment.

(6) A member if the committee may, at any time, resign his office by writing under his hand addressed to the Chairman; but the seat of such member shall not be deemed to have fallen vacant unless the resignation has been accepted by the Chairman with the previous approval of the Government.

(7) A person appointed to fill a vacancy created by the registration or death of a member shall hold office for the residue of the term of his predecessor.

(8) The functions of the committee may be exercised notwithstanding any vacancy in the membership thereof.

(9) The committee shall have the power to regulate with the prior approval of the Government the procedure for the conduct of its business.

(10) The committee may appoint sub-committees consisting of specialists for the consideration of particular matters for such periods, not exceeding three years, as it may consider necessary.

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[1] The proviso was omitted by section 10 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980).

[2] The word “the” was substituted for the word “that” by section 10 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 180).

Pesticide Laboratory

13. (1) As soon as may be after the commencement of this Ordinance, the government shall set up a Pesticide Laboratory suitably equipped to carry out the functions entrusted to it by or under this Ordinance.

(2) The functions of the Pesticide Laboratory and the mode of submission of samples for analysis or test to the Laboratory shall be such as may be prescribed.

(3) The secrecy of the formulae of brands of pesticides, samples of which are submitted to the Pesticide Laboratory for analysis or test, shall be duly safeguarded in the manner prescribed.

Government analyst

14. The Government may, by notification in the *official Gazette*, appoint as many persons as it deems fit to be Government Analysts for pesticides and, where it appoints more than one person to be Government Analysts, shall specify in the notification the local limits within which each one of them shall perform the functions of Government analyst.

Inspectors

15. The [1][Government] may, by notification in the *official Gazette*, appoint from amongst the officers of the [2][Government] employed for work relating to plant protection such number as it deems fit to be Inspectors within such local limits as may be specified in the notification.

Powers of Inspectors

16. An inspector may, within the local limits for which he is appointed, enter upon any premises where pesticides are kept or stored, whether in containers or in bulk, by or on behalf of the owner, including premises belonging to a bailee, such as a railway, a shipping company or any other carrier, and may take samples there from for examination. No compensation shall be payable for a reasonable quantity taken as a sample.

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[1] The word "Government" was substituted for the words "Central Government or a Provincial Government" by section 11 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980).

[2] The word "Government" was substituted for the words "Central Government or a Provincial Government" by section 11 of the Agricultural Pesticides (Amendment) Act, 1980 (Act No. V of 1980).

Procedure of Inspectors

17. (1) Where an Inspector takes a sample of a pesticide for the purpose of test or analysis under section 16, he shall intimate such purpose in writing in the prescribed form to the person from whose possession he takes it and, it the presence of such person (unless he wilfully absents himself), shall divide the sample into three portions and effectively seal and suitably mark the same permit such person to add his own seal and mark to all or any of the portions so sealed and marked:

Provided that, where the pesticide is made up in containers of small volume, instead of dividing a sample as aforesaid, the Inspector may, and if the pesticide be such that it is likely to deteriorate or be otherwise damaged by exposure shall, take three of the said containers after suitably marking the same and, where necessary, sealing them.

(2) The Inspector shall restore one portion of a sample so divided or one container, as the case may be, to the person from whom he takes it, and shall retain the remainder and dispose of the same as follows:-

(i) he shall forthwith send one portion or container to the Government analyst for test for analysis; and

(ii) he shall send the second portion or container to the Government.

Report of Government Analyst

18. (1) The Government Analyst to whom a sample of any pesticide has been forwarded by an Inspector under sub-section (2) of section 17 shall deliver to the Inspector, in triplicate in the prescribed form, a signed report of the result of the test or analysis conducted by him.

(2) The Inspector shall deliver one copy of the report received by him to the person from whose possession the sample was taken and shall send one copy to the Government.

(3) Any document purporting to be a report signed by the Government Analyst of an analysis conducted by him under this Chapter shall be conclusive evidence of the particulars stated therein unless the person to whom the report has been delivered under sub-section (2) disputes the correctness of the analysis conducted by the Government Analyst and, within thirty days of the delivery of the report to him, places before the Government evidence which in his opinion controverts the correctness of such analysis.

(4) Where the evidence placed before the Government under sub-section (3) is such as would in its opinion justify a further investigation, it may cause a second part of the same sample to be analysed at the Pesticide Laboratory.

(5) After the sample forwarded to it by the Government has been analysed by the Pesticide Laboratory, the Laboratory shall record the result of the analysis in a certificate of analysis and forward the certificate to the Government.

(6) A certificate of analysis prepared by the Pesticide Laboratory shall be conclusive evidence of the facts stated therein.

Publication of results of test and analysis

19. The Government may publish in such manner as it may deem fit the result of the test and analysis of a pesticide made by a Government Analyst or the Pesticide Laboratory under section 18 together with such other Information relating thereto, if any, as it may consider necessary.

Purchaser of pesticide may have it tested or analysed

20. (1) Any person who has purchased a pesticide may apply to a Government Analyst to conduct a test of analysis of the pesticide.

(2) An application under sub-section (1) shall be made in such form and manner and be accompanied by such fee as may be prescribed.

(3) The Government analyst to whom an application is made in accordance with sub-section (2) shall conduct the test or analysis and issue to the applicant a report signed by him of the test or analysis.

## CHAPTER IV

## MISCELANEOUS

Offences and penalties

21. Any person who-

(a) sells, offers or exposes for sale, holds in stock for sale or advertises a registered brand of a pesticide which is not of the nature, substance or quality which it is represented to be by the brand or mark on the package containing it or, as the case may be, on to tag or label attached thereto; or

(b) falsely represents a pesticide in an advertisement;

or

(c) contravenes any of the provisions of this Ordinance or the rules for the contravention of which no other penalty is provided in this Ordinance,

shall be punishable, for the first offence, with fine which may extend to one thousand Taka and for every subsequent offence with fine which shall not be less than two thousand Taka or more than three thousand Taka and in default of payment of any such fine with imprisonment for a term which may extend to one year.

Manufacturer's warranty to dealers

22. Whoever gives false warranty to a dealer or purchaser in respect of a pesticide, that it complies in all respect with the provisions of this Ordinance shall, unless he proves that when he gave the warranty he had good reason to believe the same to be true, be punishable with fine which may extend to one thousand Taka.

Unlawful use of registration number, lowering of pesticidal value or hindering to Inspector from performing his duty

23. Any person who-

(a) unlawfully uses any registration number assigned or as if it had been assigned under this Ordinance, or

(b) wilfully alters the composition of a pesticide by mixing any other substance therewith after the said pesticide has been placed on the market by the manufacturer, importer or vendor, or

(c) wilfully obstructs, hinders, resists, or in any way opposes any Inspector in performing his duties under this Ordinance,

shall be punishable with fine which shall not be less than two thousand and five hundred Taka or more than five thousand Taka or with imprisonment for a term which shall not be less than one year or more than two years.

Entry and seizure

24. (1) If an Inspector has reason to believe that an offence punishable under this ordinance or the rules made there under has been, is being or is about to be committed at any time or place, he may enter and search such place and seize any pesticide, article or thing to which the offence relates found therein.

(2) Any pesticide, article or thing seized under sub-section (1) shall be disposed of in accordance with the decision of the Court before which the offender is prosecuted for a contravention of any of the provisions of this Ordinance or the rules.

Power of Court to order forfeiture

25. If any person is convicted of an offence punishable under this Ordinance committed by him in respect of any pesticide, article or thing, the Court convicting him may further direct that the pesticide, article or thing shall be forfeited to the Government.

Cognizance of offences, etc.

26. (1) No court inferior to that of a Magistrate of the first class shall try an offence punishable under this Ordinance.

(2) Notwithstanding anything contained in section 32 of the code of Criminal procedure, 1898, it shall be lawful for any Magistrate of the first class of pass any sentence authorised by this Ordinance even if such sentence exceeds his powers under the said section 32.

Power to try offences summarily

27. Any Magistrate of the first class or any bench of Magistrates invested with the powers of a Magistrate of the first class empowered for the time being to try in a summary way the offences specified in sub-section (1) of section 260 of the code of Criminal procedure, 1898, may, on application in this behalf being made by the prosecution, try in accordance with the previsions contained in sections 262 to 265 of that Code, any offence 0unishable under section 21.

Indemnity

28. No suit, prosecution or other legal proceeding shall lie against any person for anything which is in good faith done or intended to be done under this Ordinance or the rules.

Power to make rules

29. (1) The Government may, in consolation with the [1][* * *] Pesticide Technical Advisory Committee and after previous publication in the *official Gazette*, make rules for carrying the provisions of this Ordinance into effect.

[1] The word “Agriculture” was omitted by section 6 of the Agriculture pesticides (Amendment) Ordinance, 1983 (Ordinance No. XXV of 1983)

(2) In particular and without prejudice to the generality of the foregoing power, such rules may provide all or any of the following matters, namely:-

(a) the nomenclature of every form of plant and animal life that shall be deemed to be insects, fungi or other plant or animal pests;

(b) the form in which an application for the registration of a brand of a pesticide or for the renewal of registration shall be made, the information that shall be furnished therewith and the fee that shall accompany it;

(c) the procedure for the grant of certificates of registration of brands of pesticides and renewal of such registration and the form of such certificates;

(d) the language of the tags or label to be attached to the containers and packages containing pesticides and the character and location of the printing to be marked on such tags, labels and containers;

[1][(dd) the form in which an application for licence or for its renewal shall be made, the information that shall be furnished therewith and the fee that shall accompany it; and the fee for preferring an appeal against an order of suspension or cancellation of licence;]

(e) The functions of the Pesticides Laboratory and the procedures to be followed by it in the performance of such functions, including-

i. safeguarding of the secrecy of the formulae of any brands of pesticides disclosed to it;

ii. collection of samples of pesticides for test or analysis; and

iii. the form in which its reports of tests or analysis shall be written;

(f) the methods of analysis to be followed and the limits of variability to be allowed, by the Government Analyst as between the information marked on the container or on a label attached thereto or supplied to the purchaser when sold in bulk, and the results of the analysis;

[1] Clause (dd) was inserted by section 12 of the Agriculture Pesticides (Amendment) Act, 1980 (Act No. V of 1980)

(g) the qualifications and duties of the Government Analysts;

(h) the form in which an intimation of the purpose for which a sample is taken by an Inspector shall be given by him to the instruments to be employed, and the quantities to be taken, by an Inspector while taking samples for test or analysis and the manner in which they should be preserved and sent to the Government Analyst and the Government;

(i) the form in which an application shall be made by the purchaser of a pesticide to a Government Analyst for test or analysis of the pesticide, the manner in which a purchaser may send a pesticide for test or analysis to the Government Analyst, the information that shall be furnished with such application and the fee that shall accompany it;

(j) the pesticides that are generally detrimental or injurious to vegetation, domestic animals or public health even when used according to directions;

(k) the pesticides that are to be labeled "Poison" and their antidotes;

(l) the requirements for the safe storage of pesticides;

(m) the quantities of different brands of pesticides which a person may hold in stock at any one time and the premises in which, and the conditions subject to which, he may hold them in stock;

(n) the precautions for the protection of workers against risk of poisoning by pesticides arising from their working-

(i) in connection with the use of such pesticides

[1][***]; or

(ii) on land on which such pesticides are being or have been used [2][***];

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[1] The words "in agriculture" were omitted by section 6 of the Agricultural Pesticides (Amendment) Ordinance, 1983 (Ordinance, No. XXV of 1983).

[2] The words "in agriculture" were omitted by section 6 of the Agricultural Pesticides (Amendment) ordinance, 1983 (Ordinance, No. XXV of 1983).

(o) the restrictions or conditions as to the purposes for which, the circumstances in which, or the methods or [1][equipments for application] by which, a pesticides may be used;

(p) the restrictions or conditions involving a general prevention or limitation of the use of any pesticide [2][***];

(q) the provision, and keeping available and in good order, of facilities for washing and cleaning and of other things needed for protecting persons, clothing, equipment and appliances from contamination with pesticides or for removing sources of contamination therefrom ;

(r) the observance of precautions against poisoning by pesticides including the use of things provided in pursuance of the rules, and abstentions from eating drinking and smoking in circumstances involving risk of poisoning by pesticides;

(s) intervals between, or limitations of, periods of exposure to risk of poisoning by pesticides;

(t) the observance of special precautions in the case of persons who, by reason of their state of health, age, or, other circumstances, are subject to particular risk of poisoning by pesticides or of injury therefrom, or imposing, in case of persons so subject, prohibitions or restrictions on employment of workers;

(u) the measures for detecting and investigating cases in which poisoning by pesticides has occurred;

(v) the provisions of effective facilities for prevention of poisoning by pesticides and first aid treatment; and

(w) the provision of instruction and training in the use of things provided in pursuance of the rules and in the observance of precautions against poisoning by pesticides.

30. *[Delegation of powers.- omitted by section 13 of the agricultural Pesticides (Amendment) act, No. V of 1980).]*

[1] The words “equipments for application” were substituted for the word “means” by section 12 of the Agriculture Pesticides (Amendment) act, 1980 (Act No. v of 1980).

[2] The words “in agriculture” were omitted by section 6 of the agricultural pesticides (Amendment) ordinance, 1983 (ordinance No. XXV of 1983).

## (b) Key persons engaged/involved in pesticide related research

| Sl. No. | Name of person | Designation/ Area of specialization/ Contact details |
|---|---|---|
| 01 | Dr. Md. Mahbubar Rahman | Professor, Dept. of Entomology, BSMRAU, Gazipur, Bangladesh. |
| 02 | Dr. Kamal Humayun Kabir | Director, Tuber Crop Research Centre<br>(Former CSO & Head of Entomology Division), Bangladesh Agricultural Research Institute (BARI), Gazipur, Bangladesh. |
| 03 | Md. Arifur Rahman | Senior Scientific Officer, Pesticide Analytical Laboratory (PAL), Entomology Division, BARI, Gazipur, Bangladesh. |
| 04 | Md. Sultan Ahmed | Senior Scientific Officer, PAL, Entomology Division, BARI, Gazipur, Bangladesh. |
| 05 | Mohammad Dalower Hossain Prodhan | Scientific Officer, PAL, Entomology Division, BARI, Gazipur, Bangladesh. |
| 06 | Md. Wahiduzzaman Akon | Scientific Officer, PAL, Entomology Division, BARI, Gazipur, Bangladesh. |

# Part - II

## Pesticide Information of Bhutan

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## 1. Introduction

Bhutan is a land-locked country located in the eastern part of Hindu Kush Himalayan region, with a total land area of 38,394 sq. km. It shares borders with the China (Tibet) to north and with India in the south, east and west. There are 20 independent administrative regions (Dzongkhag) and these Dzongkhags are further divided into 205 geogs (block)

Most part of the country is mountainous and the elevation rises from 160 meter in the south to over 7000 meters in the north. The large variation in elevation gives rise to a wide range of climatic conditions: from hot and humid subtropical in the low lying south, to tundra with perpetual snow and ice conditions in the great Himalayan zone in the north. This is further modified by latitude, rainfall, slope gradient, and exposure to sun light and wind, to give each valley a unique set of weather conditions and cropping pattern with prevalence of varied pests, diseases and weeds spectrum. The climate is dominated by the monsoon with a dry winter and wet summer. Rainfall pattern, in particular, can differ within relatively short distances due to rain shadow effects and influenced by topography and elevation.

The total area under agriculture is 31, 4632 hectares. Paddy is the main crop cultivated in wetland, while dry land is used to grow a variety of crops including maize, wheat, barley, buckwheat, millet, and vegetables. Shifting cultivation has decreased considerably during the last few years and is gradually giving way to dry land cultivation as required by the Land Act of Bhutan 2007.

Since the inception of development activities in Bhutan in early 1960's, plant protection service has been one of the major focuses for development in agriculture sub-sector. During the earlier days, there was no formal plant protection institution and the plant protection service was synonymous with use of pesticides. Accordingly, pesticides were distributed free regardless of whether they were actually required, or used in pest control activities. In 1984, realizing the weakness and gaps in plant protection services, the Royal Government of Bhutan sought the assistance of European Union to assist in the development of sound plant protection services in Bhutan. The European Union funded the project "Strengthening Plant protection Services in Bhutan" with assistance in development of diagnostic and storage infrastructures; procurement, distribution of pesticides and equipment, and rationalization of pesticides use, development of pest and disease database, development of manpower capacities, and improvement of plant protection service delivery. The plant protection services project continued until 1992, and from 1993 to 2000 the project focus was shifted to the development of Integrated Pest Management and phasing out of toxic pesticides use.

The Integrated Pest Management project (1993-2000) implemented management of pest and diseases through use of biological, cultural and use of crop resistance, and promoted the use of pesticides as last resort or as one of the control options when other management method fails to control pests and diseases. Although pesticides, especially herbicides, have been used in major crops like potato, apple, rice and citrus, geog extension agents, farmers, growers and commission agents are least educated and aware of hazards of pesticides. The National Plant Protection Center, responsible for management of pesticides including procurement and distribution, and training, is hampered from implementing activities related to safe handling and use of pesticides mainly due to resource and capacity constraints.

## 2. Brief history of pesticides use and trend in pesticides use

The quantity of herbicides, insecticides, fungicides, acaricides, rodenticides and other chemicals imported into Bhutan for crop pest management since 1986 is given in Table 1.

**Table 1: Import of Pesticides for Pest Management since 1986 (MT)***

| Year | Herbicides | Insecticides | Fungicides | TSO/Sandovit | Acaricides | Rodenticides | Total |
|---|---|---|---|---|---|---|---|
| 86/87 | 2.00 | 16.30 | 6.25 | 0.46 | 0.04 | 0.30 | **25.35** |
| 87/88 | 0.00 | 59.90 | 4.30 | 1.00 | 0.00 | 0.10 | **65.30** |
| 88/89 | 0.00 | 45.35 | 3.75 | 0.00 | 0.00 | 0.00 | **49.10** |
| 89/90 | 30.00 | 23.60 | 3.10 | 4.10 | 0.10 | 0.05 | **60.95** |
| 90/91 | 50.00 | 28.64 | 5.37 | 11.08 | 0.00 | 0.16 | **95.25** |
| 91/92 | 60.10 | 19.10 | 3.62 | 0.20 | 0.10 | 0.19 | **83.31** |
| 92/93 | 60.00 | 13.83 | 1.30 | 1.43 | 0.00 | 0.06 | **76.62** |
| 93/94 | 88.05 | 6.44 | 0.92 | 0.53 | 0.04 | 0.21 | **96.18** |
| 94/95 | 83.42 | 7.58 | 0.77 | 6.75 | 0.01 | 0.06 | **98.59** |
| 95/96 | 93.24 | 1.88 | 2.06 | 7.69 | 0.01 | 0.00 | **104.88** |
| 96/97 | 90.73 | 10.88 | 0.24 | 10.49 | 0.05 | 0.39 | **112.77** |
| 97/98 | 117.04 | 3.49 | 1.20 | 1.40 | 0.00 | 0.00 | **123.13** |
| 98/99 | 121.25 | 3.07 | 0.95 | 9.10 | 0.00 | 0.04 | **134.41** |
| 99/00 | 137.42 | 2.75 | 1.29 | 5.80 | 0.01 | 0.04 | **147.30** |
| 00/01 | 170.36 | 4.06 | 1.66 | 8.00 | 0.00 | 0.00 | **184.08** |
| 01/02 | 195.83 | 2.78 | 1.71 | 8.50 | 0.03 | 0.03 | **208.88** |
| 02/03 | 219.69 | 4.85 | 1.93 | 9.34 | 0.02 | 0.06 | **235.89** |
| 03/04 | 252.72 | 13.07 | 2.87 | 10.05 | 0.01 | 0.06 | **278.79** |
| 04/05 | 265.43 | 2.55 | 2.52 | 10.56 | 0.00 | 0.04 | **281.09** |
| 05/06 | 255.83 | 3.04 | 2.41 | 10.73 | 0.02 | 0.04 | **272.07** |
| 06/07 | 267.87 | 4.13 | 4.10 | 10.05 | 0.00 | 0.04 | **286.19** |
| 07/08 | 1.185 | 4.30 | 2.36 | 8.20 | 0.008 | 0.034 | **16.04** |
| 08/09 | 2.70 | 3.90 | 2.60 | 8.00 | 0.001 | 0.051 | **17.30** |
| 09/10 | 3.00 | 4.80 | 3.42 | 8.60 | 0.00 | 0.049 | **19.90** |

*Source: NPPC, MoA*

The import of pesticides by the Food Corporation of Bhutan, Livestock division, and Ministry of Health for the control of storage and livestock pests and vectors of human diseases, respectively, during 2004-05 to 2008-09 is shown in the Table 2.

**Table 2: Import of Pesticides for control of Storage and Livestock pests and Vectors of Human diseases**

| Organization | Pesticides | 04-05 (Kg/Lit) | 05-06 (Kg/Lit) | 06-07 (Kg/Lit) | 07-08 (Kg/Lit) | 08-09 (Kg/Lit) | Total (Kg/Lit) |
|---|---|---|---|---|---|---|---|
| Food Corporation of Bhutan | 1. Aluminium phosphide | 50 | 40 | 40 | 40 | 40 | 210 |
| | 2. Deltamethrin 2.5% WP | 100 | 80 | 80 | 60 | 80 | 400 |
| | 3.Bromadilone 0.005% RB | 40 | 50 | 40 | 40 | 30 | 200 |
| Livestock division | 1.Deltamethrin 1.25% EC | 2788 | 3886 | 3496 | 3163 | 2775 | 13333 |
| | 2. Cypermethrin | 1110 | 1141 | 387 | 490 | 750 | 3878 |
| Department of Public Health, MoH | 1. Cyfluthrin 0.050% EW | 1611 | 1338 | 1477 | 710 | 965 | 6101 |
| | 2. Deltamethrin 0.05% WP | 907 | 1297 | 2287 | - | - | 4491 |
| | 3. Cyfluthrin 10% WP | - | - | - | 2000 | 550 | 2550 |

** Source: NPPC, MoA and DOPH, MoH*

The "Pesticide Free for All" policy introduced by the Government since the beginning of planned development in 1960's continued until early 1980's. This policy has attracted farmers for repeated application of pesticides, regardless of whether they are needed. The orchard growers exploited and utilized maximum advantage of the scheme. Farmer's practice of pesticide applications on various crops under "Pesticide Free for All" scheme is given in the Table 3:

**Table 3: Number of pesticide applications on major crops**

| Crop | No. of pesticide sprays* |
|---|---|
| **Field crops** | |
| Potato | 4-5 |
| Maize | 3-4 |
| Rice | 1-2 |
| Chilli | 1-2 |
| Vegetables | 1-2 |
| Citrus | 1-2 |
| Apple | 3-4 |

**Source:MoA*

## 2.1 Pesticides use trend

### 2.1.1 Overall trend in pesticide consumption for Pest Management since 1986

As a result of various initiatives of the Government such as introduction of cash and carry system, phasing out of toxic pesticides of WHO class 1a and 1b, and education for awareness about adverse effects of pesticides, the consumption of insecticides has decreased while there is a gradual decrease in fungicides consumption. However, there is an upward trend in use of herbicides due to *Butachlor* application for rice weed control and *Metribuzin* in potato weed control and haulm destruction. Further, the increasing trend in herbicides use has been attributed to shortage and high cost of labor for weeding operation.

## 2.2 Withdrawal of subsidy on pesticides

Withdrawal of subsidy on pesticides since 1990 in a phased manner is another important policy decision taken by the government to prevent commercial orchard owners and farmers from misusing and overusing of pesticides. This had a positive impact on all sections of farmers and they have been very careful in placing demand for pesticides.

The details of withdrawal of subsidy on pesticides in a phased manner are given in the Table 4:

**Table 4: Withdrawal of subsidy**

| Year | % Withdrawal of subsidy* |
|---|---|
| 1990-91 | 15 |
| 1991-92 | 30 |
| 1992-93 | 45 |
| 1993-94 | 60 |
| 1994-95 | 80 |
| 1995 onwards | 100 (complete withdrawal) |

*Source: IPMDP (2000): Progress Report-14, Integrated Pest Management Development Project (ALA/92/12), NPPC, MoA*

### 2.3 Pesticide entry points

Besides NPPC, as the nodal agency for import of pesticides for plant protection, the Livestock division, Food Corporation of Bhutan, and Health Ministry also import pesticides independently for livestock and storage pests/vector control programs. However, some quantity of both approved and unapproved chemical pesticides silently enter into Bhutan through illegal trade along the Indo-Bhutan border and there is no legal enforcement machinery deployed, at present, to check it under the Pesticides Act.

## 3. Brief information about the country in relation to major crops, crop losses due to insect pests and disease attack

Wide varieties of crops are grown in Bhutan, ranging from tropical crops like papaya, mango, banana to temperate crops such as apple, cherries, various nuts etc. The national plant protection center (NPPC) has made efforts to identify and document insect pests, diseases and weeds that affect most of the field and horticultural crops grown in Bhutan.

**Table 5: Major insect pests, diseases and weeds of major crops grown in Bhutan**

| *Major crops* | *Insect pests* | *Diseases* | *Common weeds* |
|---|---|---|---|
| Rice | Stem borer, gall midge, leaf folder | Blast, Brown spot, Sheath rot | *Potomegaton (Shochum), Ageratum Galinsoga, Fogopyrum Chenopodium, Fumario parviflor* |
| Potato | Tuber moth, aphids Red ants | Late blight, Viruses Bacterial wilt | *Thianthema portulacastrum, Dactyloctenium aegypticum Cyperus spp. Digitaria spp Ageratum conizoids and others* |
| Maize | Stem borer, Cut worm | Grey leaf spot, *Turcicum* blight | Do |
| Vegetables/ Chillies | Cut worm, Diamond back moth, Aphids, Fruit borer, thrips, mites | Wilt/Blight, Root rots viruses | Do |
| Apple | Beetles/Weevils, Mites, Borers | Scab, PLF, Rust | Do |
| Citrus | Trunk borer, Psyllids Fruit fly | Greening, Powdery mildew, Scab, Root rots | Do |

The experimental crop loss study has not been done. The loss figures are mostly based on farmers and researchers estimate. The combined pre and post harvest losses due to insect pests range from 10-30%, to diseases about 15-25%, and to weeds about 10-15%.

## 4. List and description of authorities, agencies and research institutes related to pesticides along with their short activity lists

***1. National Plant Protection Center (NPPC)***

*Activities:*

- Act as a nodal agency to streamline pesticide management in Bhutan.
- Responsible for procurement, distribution, and monitoring of pesticides.

- Train extension agents, farmers, growers on safe use and handling of pesticides.
- Develop linkages with external agencies concerning pesticides, and attend relevant seminars, workshops and conferences on pesticides.
- Oversee proper storage of pesticides, collect and dispose off obsolete or unused pesticides.
- Provide technical advices on types of pesticides to be used depending on the types of pests and diseases.
- Conduct field trials to assess the efficacy of pesticides.

***2. Bhutan Food and Agriculture Regulatory Authority (BAFRA)***

*Activities:*

- Implement Pesticides Act 2000
- Monitor illegal transaction of pesticides along borders

***3. Research and Development Centers (RDC's)***

*Activities:*

- Advise farmers, growers and extension agents on use and safety aspects of pesticides.
- Provide technical advices on types of pesticides to be used depending on pests and diseases.
- Conduct field trials to assess the efficacy of pesticides.
- Oversee management of regional pesticides stores and ensure availability of pesticides in the region.

***4. Dzongkhag and Geog Agriculture offices***

*Activities:*

- Collect pesticides indent and forward the list of pesticides to the NPPC for procurement and distribution.
- Advise farmers and growers to use pesticides safely and store them properly.
- Ensure that pesticides are not misused in the villages.
- Inform NPPC of any poisoning cases from pesticides.

## 5. Regulatory framework on pesticides use

The Pesticide Act of Bhutan 2000 was approved by the Parliament in 2000 with the major objectives:

- to ensure IPM is pursued, limiting the use of pesticides as last resort;
- to ensure that only appropriate types and quality pesticides are introduced into Bhutan;
- to ensure that pesticides are effective when used as recommended;
- to minimize deleterious effects of pesticides to human health and the environment consequent to the application of pesticides.

However, in the absence of Pesticides Rules the Government was unable to enforce the provisions of the Pesticide Act **(see Appendix 2).**

## 6. List of pesticides used in Bhutan

The pesticides listed in the Table 6 are recommended for use on various field and horticulture crops. The farmers use them only when there is serious pest or disease problem. Knowing the adverse effects of these pesticides on human health and mountain ecosystem, the Government, after a thorough review, discontinued the use of 10 highly toxic pesticides and severely restricted over 11 more pesticides, namely, Chlordane, Carbofuran, DDT, Dieldrin, Endrin, Heptachlor, Dicofol and others ( Refer Table 7 for details)

**Table 6: List of recommended pesticides and other chemicals for crop pest control***

| Pesticides | Crops | Pests (insects, fungus, bacteria, weeds) |
|---|---|---|
| Chlorpyrifos 20 EC | Paddy, Bean, Mustard, Brinjal, Cabbage, Onion, Apple, Citrus | Leaf roller, Gall midge, Stem borer, Pod borer, Cut worm, Aphid, root grub, Shoot & fruit borer, Diamond back moth, Leaf hopper, citrus psyllid and aphid. |
| Cypermethrin 10 EC | Cabbage, Brinjal, Wheat, | Diamond back moth, Fruit & shoot borer, shoot fly. |
| Dimethoate 30 EC | Maize, Paddy, Mustard, Brinjal, Cabbage, Cauliflower, Onion, Potato, Tomato, Chillies, citrus | Stem borer, shoot fly, hopper, Aphid, Saw fly, Ash weevil, Spotted leaf beetle, Jassid, Leaf caterpillar, Spider mite, Painted bug, Thrips, White fly, Psyllid |
| Captan 50 WP | Apples, Potato, Tomato. | Scab, Flyspeck, Bitter rot, Early blight, Late blight. |
| Tricyclazole 75 WP | Paddy | Blast (panicle & leaf foliar spray)<br>Blast (seed treatment) |
| Mancozeb 75 WP | Maize, Paddy, Potato, Tomato, Chillies, Beans, Onion, Cauliflower, Apple, Walnut. | Leaf blight, Early blight, Late blight, Damping off, Fruit rot, Anthracnose, Leaf spot, Collar rot, Scab, sooty blotch, Black rot, Downy leaf spot. |
| Carbendazim 50 WP | Rice, Wheat, Barley, Maize, Cucurbits, chillies, Brinjal, Apple, Walnut. | Blast, sheath blight, Loose smut, Brown spot, Powdery mildew, Anthracnose, Damping off, Leaf spot, Fruit rot, Scab, Downy leaf spot. |
| Tridimorph 80 EC | Citrus, Apple | Powdery mildew, |
| Glyphosate 41 EC | | General weeds control |
| Metribuzin 70 WP | Potato | *Chenopodium, Parthenium hysterio, Fumario, Parviflor, album, Phalaris minor, Thianthema, Potulacastrum, Dactyloctenium, aegypticum, Gynandropsis, Potulaca Oleracea, Digera arvensis, Ageratum conyzoides, Eleusine indica, Sataria glauca, Cyperus escu, Eragrostis spp Digitaria spp.* |
| Zinc phosphide 80w/w | Orchard, Field crops and home use | Rats |
| Protein Hydrolysate | Citrus | Fruit fly |
| Sandovit (Dhanuvit) | | Mix with all fungicides, insecticides and herbicides to obtain homogenous mixture. |
| Tree spray oil | Apple | Scales and Mites |

**Source: NPPC, MoA*

## 6.1 Quality control of pesticides

At present NPPC is not equipped with the facilities to undertake analysis of pesticides for quality parameters. Till such facilities are established at NPPC, samples of pesticides identified for procurement are obtained from the possible suppliers and thereafter get tested in reputed laboratories in India or in other neighboring countries prior to placing supply orders with them.

### 6.2 Registration of pesticide products and manufacturers

Bhutan does not manufacture pesticides or bio-pesticides. Pesticides available and used in Bhutan are imported mostly from India. The National Plant Protection Center (NPPC) relies on quality assurance from suppliers and manufacturers in India. The NPPC also enlists the manufacturers of pesticides in India and ensures that pesticides are supplied only from listed companies. Upon identification of pesticides for use in Bhutan, the Bhutanese suppliers launch application to the Bhutan Food and Agriculture Regulatory Authority (BAFRA) for formal registration as "Supplier of pesticides in Bhutan". BAFRA will register pesticides and suppliers, based on technical information given by the NPPC. As soon as the Pesticides Rules are notified under the Pesticides Act 2000, the identified manufacturers of pesticides and bio pesticides as well as new product manufacturers in India and other countries should be advised to fulfill the legal requirements under the provisions of Pesticide Act and the Rules framed thereunder.

## 7. List of different banned chemical pesticides

**Table 7: List of pesticides discontinued and severely restricted for use in Bhutan**

| Sl. No. | Pesticides | @Banned (B)/ Severely restricted (SR) | Remarks (WHO toxicity class) |
|---|---|---|---|
| 1 | Aldicarb | B | Ia |
| 2 | Aldrin | B | O |
| | Aluminium phosphide | B | |
| | BHC | B | Ia |
| | Captafol | B | Ia |
| | Ekalux | B | II |
| | Aggallol | B | |
| | Methyl parathion | B | Ia |
| | Red lead | B | |
| | Thimet | B | |
| | DDT | SR | II |
| | Nuvan | SR | |
| | Cabofuran | SR | Ib |
| | Dieldrin | SR | O |
| | Chlordane | SR | II |
| | Heptachlor | SR | O |
| | EDB | SR | |
| | Rogar | SR | |
| | Mercury ompound | SR | |
| | Dicofol (Dicofol+DDT) | SR | III |
| | Endrin | SR | O |

*Source: National Profile for Chemical Management for Bhutan (Final draft Report, 2008), NEC*

# 8. Measures adopted for pesticides safety and information on the evaluation of the pesticides risk

## 8.1 Disposal of obsolete pesticides stocks

The National Plant Protection Center (NPPC) in collaboration with the National Environment Commission, and funded by the Swiss Development Corporation (SDC), successfully disposed off about 70 MT of obsolete pesticides, which were lying scattered in different locations in the Dzongkhags The quantity of obsolete pesticides, which were disposed off with the financial support of Swiss Government are given in the Table 8 below:

**Table 8: Disposal of Obsolete pesticides Stocks***

| Pesticides | Quantity (MT) | Source | Remarks |
|---|---|---|---|
| Insecticides | 30 | MoA | 17 MT of Carbofuran returned to manufacturer in Kolkata |
| Fungicides | 13 | MoA | |
| Herbicides | 23 | MoA | 22 MT of Herbit rice herbicide were reused |
| Medical Waste | 4.6 | MoH | |

**Source: IPMDP (1999). Progress Report-12, Integrated Pest Management Development Project, NPPC, MoA.*

The National Plant Protection center trained all extension agents from all 205 geogs on safe and efficient use, and calibration of pesticides equipment. The extension agents in turn pass information on safe use of pesticides to farmers and growers, and other stakeholders. However, pesticides storage conditions and use of protective clothing and equipment remain poor and requires improvement.

# 9. List of pest outbreaks and their management options

**Table 9: List of pest outbreaks and their management options**

| Pest and disease outbreaks | When and Where | Severity (loss) | Management options |
|---|---|---|---|
| Rice blast disease | In 1995/96 seasons in all rice areas, severe in high altitude on traditional land races | Complete loss of crop in high altitude | • Resistant variety<br>• Destruction of infected stubble<br>• Fungicide spray in the nursery<br>• Frequent surveillance |
| Maize blight | In 2006 in all maize areas | Severe loss (some field 100% infected) | • Fungicide (tilt) spray<br>• Resistant variety |
| HLB (ex-greening) | Since 1997 in most citrus growing areas | Severe infection in some orchard, especially at Phuntshopelri and Sonagasa, Punakha, and Baikunza at Bongo geog | • Uproot and destroy infected trees<br>• Control vector (Psyllid insect with insecticide)<br>• Frequent surveillance for both disease and vector |
| Army worm | After every 5-8 years interval in rice nursery and maize field | ?? | • Insecticide spray<br>• Flooding with water<br>• Manual picking and killing |
| Late blight | During wet spring and occurs in all potato fields | Complete loss in some years | • Fungicide (Mancozeb) spray |

| Pest and disease outbreaks | When and Where | Severity (loss) | Management options |
|---|---|---|---|
| Chili blight | In mid 1990's and in most chili growing areas whenever rainfall is high | Severe under high rain fall and in flat areas | • Improve water drainage<br>• Plant chili in raised bed<br>• Treat seed with fungicide<br>• Crop rotation<br>• Spray fungicide |
| Cardamom wilt, blight and ginger Rhizome Rot | Since late 1990's | Total loss of crops | ***No management option available in Bhutan*** |

## 10. List of resistant pest species developed along with scientific evidence and the description of the institutions where the research works have been done

*Information not available*

## 11. Available information on pesticides misuse, about environmental and health effects of different pesticides under local conditions and possible remedial options (if any) account of farmers practices in relation to health of their own and consumer health

Most farmers and some growers do not follow the directions given on the labels of the containers or the leaflets provided along with pesticides. They seldom use measuring devices while preparing pesticide spray mix resulting in high or low concentration of pesticides. Some farmers sprinkle pesticides with perforated plastic bottles/water cans as they do not get access to spray equipment. Further, farmers do not use safety gadgets like hand gloves, face masks/goggles while applying pesticides.

Small tin containers are invariably buried in make-shift toilet pits or in the nearby forest areas. Paper and plastic containers are burnt. However, large tin containers and *Butachlor* herbicide empty bags are reused by almost all households for storing food grains, vegetables and other food commodities. In almost all Dzongkags and Gewogs, pesticides are kept in a general store along with farm tools, furniture, etc. and as such there is no separate facility for storing pesticides.

Some farmers who were involved in the application of pesticides have experienced symptoms of pesticide poisoning viz. giddiness, drowsiness and vomiting, skin and eye irritation. Awareness amongst extension staff and farmers about hazards related to pesticides like occupational hazards, residues in crops and ecological damage are minimal. As a result, even while occupational hazards were commonly experienced such as the above mentioned poisoning symptoms, rarely they are reported.

Considering above facts, it is likely that pesticides may find ways into the environment causing pollution and may result in accumulation of pesticides in the body through unprotected hands and face; but data of chronic and acute poisoning is lacking mainly because neither study has been done to document them nor on environmental effect(s) due to misuse of pesticides.

## 12. Available information about pesticides residues on food, water, soil, environment etc. and methods of monitoring

*Information not available*

## 13. Past experience and present status of IPM, natural enemies (predators and parasitoids), entomopathogenic microbes and fungi, insect sex pherormones botanicals, biopesticide, transgenic crops and indegenious knowledge in biological pest control

### 13.1 Launching of IPM Project

Integrated pest management (IPM) is an official pest management policy of the National Plant Protection Center, Department of Agriculture, Ministry of Agriculture, RGOB. The formal IPM development project (IPMDP) was launched in 1993 with assistance from the European Union and the project was completed in 2000. The main objective of the project was to promote effective and environmentally sound crop protection practices within easy reach of Bhutanese farmers and to minimize dependence on chemical pesticides as well as to promote other alternate methods of pest control.

***Some success stories of the EU-IPMDP are:***

- In apple, the farmers' practices of calendar spraying have been changed to need based application. As a result, the number of sprays has been drastically brought down from 6-8 to 2-3 sprays for scab disease control.
- In mandarin, the cheaper and simpler way of bait splashing was promoted, which has resulted in effective fruit fly control and the fruit drop was reduced from 50% to 15%. Further, effective control of trunk borer & twig borer in citrus & apple was achieved by inserting cotton wool soaked in kerosene to the borer holes.
- In rice, the blast disease was effectively contained through improved crop management practices including fungicide seed treatment, field sanitation, disposal of infected straw, nursery protection, use of resistant varieties and need based use of fungicides.
- In chili, cultural methods such as use of healthy seedlings, proper spacing, and planting in raised bed was promoted to facilitate draining of excess water and need based use of fungicides for the control of wilt disease.
- In potato, improved agronomic and PP practices in late blight disease control has resulted in increased production

**Table 10: Production increase in Potato in IPMDP Project Pilot Villages***

| Year | Seed (Kg) | Yield (Kg) | Seed: Yield ratio |
|---|---|---|---|
| 1993 | 14,500 | 44,850 | 1:3.0 |
| 1994 | 20,800 | 76,238 | 1:3.7 |
| 1995 | 21,600 | 87,139 | 1:40 |
| 1996 | 15,650 | 1, 08,225 | 1:6.9 |

**Source: IPMDP (2000). Progress Report-14, Integrated Pest Management Development Project (ALA/92/12), NPPC, MoA*

## 14. Government initiative against pest outbreaks, resistance, resurgence etc.

The Department of Agriculture (DoA) of the Royal Government of Bhutan has initiated following activities to contain pest outbreaks and develop crop resistance:

- Extension agents are trained to conduct pest surveillance and report the pest occurrence to the National Plant Protection Center for further action to contain the pest.
- Regional pesticides stores are being planned for construction to store pesticides for emergency use.
- Due to rice blast disease outbreaks in 1995 and 1996 seasons, rice blast resistance breeding and screening were implemented; to date, five such resistant rice varieties are released for cultivation.
- In 2006, there were severe outbreaks of *Turcicum* leaf blight (TLB) and grey leaf spot (GLS) diseases in maize. Consequently, breeding for TLB and GLS resistant maize variety was initiated with assistance from the CIMMYT. Two such resistant varieties are in pipeline for release for cultivation
- Serious outbreak of citrus *Psyllid* in all citrus growing areas occurred in 2003, and the DoA has distributed insecticide (*Dimethoate*) free of cost to all affected orchard owners to control psyllid
- The Boron deficiency problem in apple was successfully controlled with application of Borax.
- The DoA is continuously informing farmers and growers about potential outbreaks of pest and diseases through national radio program.
- The wild boar outbreaks and damage of crops and human settlement by wild elephants are constant problem. The DoA is taking several initiatives such as study of wild boar population dynamics, controlling wild boars with trapping and snaring, and installing ultra sound system to scarce away and prevent elephant damage.

## 15. Suggestion and recommendations especially on possibilities on work sharing

- There is an opportunity to share information on pests and diseases of crops on regular basis between and among SAARC countries.
- It will be very useful if SAARC Secretariat could provide information on pesticides use and residues in food items, water and environment in SAARC countries, particularly in India, to the National Plant Protection Center of the Department of Agriculture, RGOB.
- The NPPC of the Department of Agriculture could undertake survey to document traditional practices of growing crops to avoid or prevent pest and diseases in Bhutan and share this information with interested groups in the SAARC region.
- Given limited resources in Bhutan, it would be useful if some SAARC countries (e.g. India), could do some work on the management of Cardamom and Ginger diseases, especially management of Cardamom blight and wilt, and Ginger Rhizome Rot and share information with us here in Bhutan.

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## 17. Appendix 1

**THE PESTICIDES ACT OF BHUTAN 2000**

CONTENTS

CHAPTER I PRELIMINARY
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# THE PESTICIDES ACT OF BHUTAN, 2000

PREAMBLE

An Act to regulate the safe use and handling of chemicals to prevent public health and environmental hazards

## CHAPTER- I

## PRELIMINARY

### Title, extent and commencement

- This Act shall be called "The Pesticides Act of Bhutan, 2000".
- It shall apply to the whole of the Kingdom of Bhutan; and
- It shall come into force on 13th day, 5th month of the Male Iron Dragon Year coinciding with the 14th July of the Year 2000.

### Objectives

The objectives of this Act are:

- To ensure integrated pest management is pursued, limiting the use of pesticides as last resort.
- To ensure that only appropriate types and quality of pesticides are introduced into Bhutan.
- To ensure that pesticides are effective when used as recommended;
- To minimize deleterious effects to human beings and the environment consequent to the application of pesticides; and
- To enable privatization of sale of pesticides as and when required.

### Definitions

In this Act unless the context otherwise requires:

- "Minister" means the Minister of Agriculture.
- "Board" means the Pesticides Board established under Chapter III of this Act.
- "Secretary" means the Secretary of the Board.
- "Authorized Officer" means an officer appointed by the Minister to enforce the provisions of this Act.
- "Pesticides" means any substance or mixture of substances intended for preventing, destroying or controlling, any pest, including vectors of human or animal disease, unwanted species of plants or animals causing harm during or otherwise interfering with the production, commodities, wood and wood products or animal feeds, or which may be administered to animals for the control of insects, arachnids or other pests in or on their bodies. The term includes substances or agent for thinning fruits or preventing the premature fall of fruit, and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport.
- "Manufacture" means to prepare, compound, formulate, mix, make, pack, label, or otherwise treat the pesticides with a view to its sale.

- "Label" means any written, printed or graphic matter on, or attached to the pesticides, or the immediate container thereof and the outside container or wrapper of the retail package of the pesticide.
- Maximum residue limit" (MRL) means the maximum concentration of a residue that is legally permitted or recognized as acceptable in or on food, agricultural commodity or animal feeds.
- "Sell" includes offer for sale, exhibit for sale, and posses for sale, store for sale.
- "Integrated Pest Management" means a combination of methods in which with particular attention being paid to biological, bio technical, plant breeding and cultivation related measures, and the use of pesticides is limited to an essential minimum.
- "Environment" means land, water, air, wild species of fauna and flora and any interrelationship with living organisms.

## CHAPTER-II

## IMPORT, SALE AND USE OF PESTICIDES

**Import and manufacture**

- A person may only import a pesticide that is authorized on his application under This Act.
- A person may only manufacture a pesticide if the Minister, in consultant with the Board, regulates the circumstances of manufacturing.
- By way of derogation from Sub-Section 4.1 of Chapter II, the government agencies responsible for plant protection, forest protection, livestock protection and vector control in human health may import pesticides; provided they are distributed for sale and use only after authorization by the Board.

**Control of sale and licensing**

- A person may only sell a pesticide that is authorized under this Act.
- A person may sell pesticides only if the premise where the pesticides are kept is licensed under this Act.
- The person who sells pesticides must have the necessary level of integrity and reliability and possess the knowledge to give information about safe handling and appropriate use.
- The person who sells pesticides shall ensure that no build-up of outdated pesticides occurs and that any outdated pesticides are disposed off in the prescribed way.

**Use**

- A pesticide must only be used with regard its authorized application and in accordance and in accordance with good professional practice. Good professional practice shall include observation of the guidelines provided by the Board and the principles of integrated pest management, where appropriate.

## CHAPTER-III
## ENFORCE RULES AND PROCEDURES

**Establishment of the Board.**

- For the purpose of this Act, a Board shall be established.
- The Minister of Agriculture shall appoint the members of the Board, including the Chairman and the Secretary. The appointment shall be for a period of five years and can be extended. The Board may include preferably the experts, which cover the following disciplines:
    - Heads of Department of Research and Development Services
    - Head of Quality Control and Regulatory Services
    - Head of National Plant Protection Centre
    - Extension
    - Environment
    - Forestry
    - Plant Pathology
    - Entomology
    - Health
    - Plant Quarantine
    - Research
    - Weed Science
    - Animal Husbandry

**Proceedings of the Board**

- The Board may regulate its own procedure.
- The Board is empowered to grant authorizations and develop guidelines needed for the implementation of this Act.
- The Board shall consider post authorization monitoring programmes.

**Application for authorization**

- A person desiring to import or manufacturing pesticides shall apply to the Board in the prescribed manner for authorization.
- An applicant must together with his application submit to the Board the information stipulated in the guidelines.

**Authorization**

- Upon receipt of an application duly made under and in accordance with section 19 and the rules, the Board may authorize the pesticide subject to such conditions as the Board thinks fit to impose and issue the applicant a certificate of authorization.
- If the Board is not satisfied of any of the matters in Section 19, it shall not authorize the pesticide. The Board reserves the right to reject authorization if it considers that a sufficient number of pesticides have already been authorized for use in Bhutan.
- The Board shall ensure that a pesticide is not authorized unless it is established in the light of current scientific and technical knowledge and having regard to all normal conditions under which it may be used, and to the consequences of its use that:
    - It is sufficiently effective;
    - It does not cause unnecessary suffering and pain to vertebrates to be controlled;
    - It has no harmful effect on human or animal health;
    - It has no undesirable effect on the environment; and
    - It has an assured product quality during the period of authorization.

**Period of authorization**

- The period of authorization of a pesticide shall be five years but the pesticide may be re-registered at the end of five years on application by the person on whose application the pesticide was originally authorized.

**Cancellation of authorization**

- The Board may cancel the authorization of a pesticide if:
- the Board considers it undesirable that the pesticide should continue to remain authorized owing to its toxicity or inefficacy; or
- The pesticide does not comply with the requirements of this Act or provisions of the certificate.

**Appeal against cancellation or refusal of authorization**

- If an applicant is dissatisfied with the refusal of the Board to authorize, re-authorize, or action taken to cancel an authorization, he may appeal to the Minister, whose decision shall be final.

**Monitoring**

- The Quality Control and Regulatory Services (QCRS) of the Ministry of Agriculture may monitor the quality of the pesticides and ensure that the provisions of the Act are strictly abided. QCRS shall submit its reports to the Board for deliberations and decision making.

**CHAPTER-IV**

**SANCTIONS**

**Entry, search and seizure**

- the Minster may appoint authorized officers for the purpose of enforcing this Act and its rules.
- An authorized officer may enter into any place where a pesticide is or may reasonably be supposed to be kept or stored.
- An authorized officer may search the place and may seize, detain, or remove any substance found therein that is reasonably believed to contain a pesticide in respect of which as offence against this Act is committed.
- An authorized officer may mark, seal, or otherwise secure the said substance in order to affect seizure, detention, or removal thereof.

**Complaints as to seizure, detention or removal**

- A person claiming any substance seized, detained, or removed under this Act may, at any time, but not later than seven working days after its seizure, detention, or removal, submits complaints to a court.
- the substance seized, detained, or removed shall, if no complaint is made under and in accordance with this Section, become the property of the government and be disposed off, by destruction or otherwise, as directed by the Minister.

**Taking samples for analysis**

- An authorized officer shall obtain the necessary samples of any pesticide under this Act for analysis.

**Penalties**

- A person, who commits an offence against this Act or the Rules, is liable, on conviction, to imprisonment in accordance with the Law of the Land.

## CHAPTER-V
## MISCELLANEOUS

**Regulations**

- the Minster may, after consulting the Board, make rules to implement this Act and to give effect to the provisions thereof and in particular, such regulations may:
- prescribe the procedure to be followed in making applications under this Act and the fees payable therefore;
- provide generally for matters connected with authorization and licensing;
- prescribe the manner of obtaining samples for analysis;
- regulate waste disposal for pesticides;
- prescribe the measures to be taken and the practice to be followed for the manufacture of pesticides;
- prescribe the manner of labeling and packing pesticides, and the matters to be displayed on labels of pesticides;
- regulate maximum residue limits for food;
- regulate the manner of using certain pesticides and the precautions to be taken in respect thereof;
- prescribe the requirements to be fulfilled in transporting and handling pesticides in bulk;
- regulate the advertising of pesticides;
- Prescribe procedures to control availability and application of pesticides.

**Household pesticides**

- By way of derogation in Chapter II pesticides for exclusive home use can be imported, sold and used without authorization until the Minister in consent with the concerned Ministry has regulated the import, sale and use.

**Wastes**

21.1 A farmer may return obsolete pesticides to the Commission Agent from them the pesticides were purchased. The Commission Agent or the seller will submit the wastes to the Board as prescribed.

**Appendix 2: Key persons engaged/involved in pesticide related activities (research and development with their mailing addresses and contact numbers)**

- Dr Thinlay, Specialist (plant protection), NPPC, Department of Agriculture, Semtokha, Phone: + 975 2 351016; Mobile: 17602441; e-mail: nppc@druknet.bt; aap10@yahoo.com
- Mr Doe Doe, Officiating Program Director, NPPC, Department of Agriculture, Semtokha; Phone +975 2 351016; e-mail: ddoe_chimi@yahoo.com

**Appendix 3: List of pesticides, trade name and suppliers**

| SI. No | PRODUCTS | Trade Name | Company Name |
|---|---|---|---|
| **I** | **INSECTICIDES** | | |
| 1 | Chlorpyrifos 20 EC | | |
| 2 | Cypermethrin 10 EC | CYPRA | Heranba Industries Ltd. |
| 3 | Dimethoate 30 EC | HERBIGOR | Herbicide India Ltd. |
| 4 | Fenvelerate 0.4 D | SUMITOX | Amico |
| 5 | Malathion 5 D | | |
| 6 | Malathion 50 EC | | |
| **II** | **FUNGICIDES** | | |
| 7 | Carboxin 75 WP | | |
| 8 | Captan 50 WP | HERBICAP | Herbicide India Ltd. |
| 9 | Carbendazamin 50 WP | CATCH | Herbicide India Ltd. |
| 10 | Copper Oxychloride 50 WP | COP-TOX | Amico |
| 11 | Hexaconazole 5 EC | | |
| 12 | Mancozeb 75 WP | DEVIDAYAL M-45 | Devidayal Agro Chemicals |
| 13 | Metatalaxyl 8% Mancozeb 64%(Ridomil) | DUET | Devidayal Agro Chemicals |
| 14 | Propiconazole 25 EC | PROPI / HILL TOP | Devidayal Agro Chemicals |
| 15 | Sulfur 80 WP | DEVISULPHUR | Devidayal Agro Chemicals |
| 16 | Tricylazole 75 WP | FLOCK | Hyderabad Chemical Ltd. |
| III | **HERBICIDES** | | |
| | Glyphossate 41SL | COMMANDO | Herbicides India Ltd. |
| | Metribuzin 70 WP | | |
| IV | **RODENTICIDES** | | |
| | Zinc Phosphate 80 W/W | COMMANDO | Excel |
| V | **ACARICIDES** | | |
| | Dicofol 18.5 EC | MIGHT | Devidayal Agro Chemicals |
| VI | **NONTOXIC** | | |
| | Sticker/Spreader(Sandovit) | | |
| | Tree Spray Oil (TSO) | SERVO | Indian Oil Corporation |
| VII | **BIO-PESTICIDES** | | |
| | Trichoderma | | |

# Part - III

## Pesticide Information of India

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## 1. Introduction

The Agriculture Sector has seen rejuvenation of government interest since the past couple of years. Food security is also top priority for the government while reduction in food loss is one of the easiest ways to boost food production. Usage of pesticides or agrochemicals can reduce the loss during food production.

## 2. Brief history of chemical pesticide use and trends in pesticide use (Crops and location wise statistics on pesticide use)

India's overall pesticide consumption (Table 1) is one of the lowest in the world. India's pesticide consumption stands at 0.48 kg per hectare (ha) compared to 11 kg/ha for Japan and 4.5 kg/ha for USA. This compares very poorly with other countries that have less arable land under coverage. For instance, countries like Taiwan, Japan, Holland and Korea have higher consumption than India.

India shares approximately 16% of the world's total food grain production and uses only around 2% of pesticides. In case of India's Agrochemicals market, insecticides constitute 67%, the largest share as compared to only 33% of its global consumption. Globally, herbicides constitute 45%, the largest share of all agrochemicals consumption.

India has predominately been an insecticides market due to its tropical climate and availability of cheap labour (replacement for herbicides). However, over a period of time, there has been a minor, but certain shift in demand towards fungicides and herbicides.

The largest amount of total pesticides is used in rice followed by cotton. At one time, the largest amount of pesticides was used in cotton, but introduction of Bt Cotton in the Indian market had reduced dependence on agrichemicals for crop protection.

**Table 1. Consumption of pesticides in various states during 2002-03 to 2006-07**

| Sl. No. | States | 2002-2003 | 2003-2004 | 2004-2005 | 2005-2006 | 2006-2007 |
|---|---|---|---|---|---|---|
| 1. | Andhra Pradesh | 3706 | 2034 | 2133 | 1997 | 1051 |
| 2. | Assam | 181 | 175 | 170 | 165 | 165 |
| 3. | Arunachal Pradesh | 15 | 147 | 17 | 2 | 17.10 |
| 4. | Bihar | 1010 | 860 | 850 | 875 | 890 |
| 5. | Chhattisgarh | NA | 332 | 486 | 450 | 490 |
| 6. | Gujarat | 4500 | 4000 | 2900 | 2700 | 2670 |
| 7. | Goa | 5 | 5 | 5 | 5 | 6.9 |
| 8. | Haryana | 5012 | 4730 | 4520 | 4560 | 4600 |
| 9. | Himachal Pradesh | 380 | 360 | 310 | 300 | 290 |
| 10. | Jammu & Kashmir | 98 | 9 | 12 | 1433 | 829 |
| 11. | Jharkhand | 40 | 56 | 69 | 70 | 57 |
| 12. | Karnataka | 2700 | 1692 | 2200 | 1638 | 620 |
| 13. | Kerala | 902 | 326 | 360 | 571 | 547 |
| 14. | Madhya Pradesh | 1026 | 662 | 749 | 787 | 879 |
| 15. | Maharashtra | 3724 | 3385 | 3030 | 3198 | 3193 |
| 16. | Manipur | 19 | 25 | 26 | 28 | 27 |
| 17. | Meghalaya | 6 | 6 | 8 | 6 | 9.3 |
| 18. | Mizoram | 15 | 15 | 25 | 25 | 40 |

| Sl. No. | States | 2002-2003 | 2003-2004 | 2004-2005 | 2005-2006 | 2006-2007 |
|---|---|---|---|---|---|---|
| 19. | Nagaland | 7 | 7 | 5 | 5 | 5 |
| 20. | Orissa | 1134 | 682 | 692 | 963 | 1068 |
| 21. | Punjab | 7200 | 6780 | 6900 | 5610 | 5710 |
| 22. | Rajasthan | 3200 | 2303 | 1628 | 1008 | 1523.20 |
| 23. | Sikkim | 3 | 3 | No cons. as Organic State | No cons. as Organic State | 2 |
| 24. | Tamil Nadu | 3346 | 1434 | 2466 | 2211 | 2048 |
| 25. | Tripura | 88 | 118 | 17 | 14 | 9 |
| 26. | Uttar Pradesh | 6775 | 6710 | 6855 | 6672 | 7022 |
| 27. | Uttaranchal | 129 | 147 | 132 | 141 | 139 |
| 28. | West Bengal | 3000 | 3900 | 4000 | 4250 | 3950 |
| 29. | Andaman & Nicobar | 3 | 6 | 3 | 3 | 4.415 |
| 30. | Chandigarh | 1 | 0.78 | 0.78 | 0.78 | NA |
| 31. | Delhi | 60 | 56 | 53 | 39 | 57 |
| 32. | Dadra & Nagar Haveli | 5 | 5 | 5 | 4 | NA |
| 33. | Daman & Diu | 1 | 1 | 1 | 1 | NA |
| 34. | Lakshadweep | 2 | 2 | 2 | 1 | NA |
| 35. | Pondicherry | 57 | 46 | 42 | 41 | 40.46 |
| | **Total (in round fig.)** | **48350** | **41020** | **40672** | **39773** | **37959** |

## 3. Brief information about the country in relation to major crops, crop losses due to insect pest and diseases attack

It has been estimated that use of pesticides not only saves crop loss of about Rs. 90,000 crores (*Source: Ministry of Chemical & Fertilizers*) but also provides an insurance cover to the farmer by protecting his investment in seeds, fertilizers, irrigation and own hard labour from ravages of insects, pests, etc.

**Table 2.** Acreage under various crops

| Crops | 1966-68 | 1976-78 | 1986-88 | 1996-98 | 2001-03 |
|---|---|---|---|---|---|
| Jowar | 2638.33 | 1935.33 | 2403.67 | 1915.33 | 1741.00 |
| Pulses | 1316.00 | 1451.00 | 1685.67 | 1759.67 | 1931.00 |
| Paddy | 1144.33 | 1058.33 | 1150.33 | 1380.00 | 1185.00 |
| Ragi | 1046.67 | 1070.67 | 1147.00 | 1001.67 | 883.33 |
| Bajra | 524.33 | 699.67 | 464.00 | 329.33 | 276.67 |
| Groundnut | 940.33 | 870.33 | 1123.67 | 1185.00 | 849.50 |
| Sunflower | - | - | 712.58 | 881.00 | 865.46 |
| Cotton | 956.00 | 993.33 | 514.67 | 599.33 | 445.67 |
| Maize | 37.33 | 138.67 | 229.00 | 506.00 | 581.67 |
| Sugarcane | 96.33 | 152.00 | 207.67 | 310.00 | 369.67 |
| Coconut | 110.30 | 157.73 | 213.62 | 301.14 | 375.00 |

*Area in thousand hectares*

Yield losses caused by pests in different crops:

| | |
|---|---|
| Cotton | 30-50% |
| Rice | 25-60% |
| Vegetables | 15-40% |
| Pulses | 20-75% |
| Sugarcane | 15-30% |

## 4. List and brief description of authorities, agencies and research institutes related to pesticide along with their short activity.

### The State Agricultural Universities

The State Agricultural Universities (SAUs) are playing a pivotal role in education, research and extension activities in the fields of agricultural sciences in India. The core activities of SAUs are mainly depending on its library and information centres as information is an essential input for education, research and extension.

### State Agricultural Departments

The Department of Agriculture and Cooperation is responsible for formulating and implementing National policies and programmes to achieve rapid agricultural growth through optimum utilization of the States land, water, soil and plant resources. The focus areas of the Department are:

- Agriculture
- Marketing agricultural produce
- Horticulture
- Sericulture

The Agriculture, Cooperation, Marketing, Horticulture and Sericulture Wings in this department deal with all service matters, court cases, and all financial matters including schemes of the State and Central government, legislative matters, and welfare measures.

### Crop Science Institutes of ICAR

Thrust Areas

- Harnessing conventional and modern scientific knowledge, tools, and cutting-edge of science for development of improved crop varieties/hybrids suited to diverse agro-ecologies and situations, and efficient, economic, eco-friendly and sustainable crop production and protection technologies; promoting excellence in basic, strategic and anticipatory crop science research
- Refinement of seed-production technologies and production of breeder seed with added emphasis on hybrid cultivars
- Conservation and sustainable use of genetic resources of plants, insects and other invertebrates, and agriculturally important microorganisms
- Providing knowledge-intensive advisory and consultancy in crop-science

## Non Government Organizations

Non-government organizations with their advantage of non- rigid, locality specific, felt need-based, beneficiary oriented and committed nature of service have established multitude of roles which can effect rural development.
Non-governmental organizations are accepted by the different sections as an effective machine for rural development

## 5. Regulatory framework (Policies, regulations and laws) and enforcement, description about pesticide registration process, field monitoring agencies and process

### (a) Pesticides Regulations

### Pesticides regulations are governed in India under following Acts/Rules:

1. The Insecticides Act, 1968 and Rules, 1971
2. The Environment (Protection) Act, 1986
3. Hazardous Waste (Management & Handling) Rules, 1989
4. Water (Prevention & Control of Pollution) Act, 1974
5. Air (Prevention & Control of Pollution) Act, 1981
6. Prevention of Food Adulteration Act, 1954
7. The Factories Act, 1948
8. Bureau of Indian Standards Act

### (b) Use and Regulation of Insecticides and Pesticides

The Ministry of Agriculture regulates the manufacture, sale, import, export and use of pesticides through the 'Insecticides Act, 1968' and the rules framed there under. Central Insecticides Board (CIB) constituted under Section 4 of the Act advises Central and State Governments on technical matters. The Registration Committee (RC) constituted under Section 5 of the Act approves the use of pesticides and new formulations to tackle the pest problem in various crops. The monitoring of pesticides residue levels in food comes under the purview of Union Ministry of Health and Family Welfare.

### Insecticides Act, 1968

The Insecticides Act, 1968 regulates import, manufacture, sale, transport and distribution and use of insecticide, with a view to prevent risk to human beings or animals and the matters connected therewith. This Act was passed by the Parliament in the Nineteenth year of Republic of India and came into force on 01.03.1971. Although the Act is named Insecticides Act, it is applicable for all pesticides including fungicides, herbicides, rodenticides etc.

### Central Insecticides Board (CIB)

A Central Insecticide Board (CIB) has been constituted under Section 4 of the Insecticides Act, 1968 to advise Central Government and State Governments on technical matters *viz*.:

- Safety measures necessary to prevent risk to human beings or animals in manufacture, sale, storage, distribution and use;
- Assess suitability for aerial application;
- Specify shelf-life;

- Advise residue tolerance limit and waiting period;
- Suggest colorization;
- Recommend inclusion of chemicals/substances in the Schedule or insecticide;

## Other functions incidental to these matters

Director General of Health Services, Ministry of Health and Family Welfare is *ex-officio* Chairman of CIB. Board consists of 28 members, out of which 16 are *ex-officio* and 12 are nominated members.

## Registration Committee (RC)

A Registration Committee (RC) has been constituted, consisting of a Chairman, and not more than five persons who shall be member of the Board (including the Drugs Controller, India and the Plant Protection Advisor to the Government of India),under Section 5 of the Insecticides Act, 1968 to register insecticides after scrutinizing formulae, verifying claims of efficacy and safety to human beings and animals, specify the precautions against poisoning and any other function incidental to these matters. To assess efficacy of the insecticides and their safety to human beings and animals, the RC has evolved exhaustive guidelines/data requirements which *inter-alia* includes residue in crops on which the insecticides are intended to be used. The onus lies with the importers/manufacturers to generate data relating to the insecticides for which registration is sought. The Committee was informed that so far 181 pesticides have been registered for regular use in the country.

Any person desiring to import or manufacture any insecticide may apply to the Registration Committee for the registration of such insecticide and there shall be separate application for each such insecticide.

Provided that any person engaged in the business of import or manufacture of any insecticide immediately before the commencement of this section shall make an application to the Registration Committee within a period of [seventeen months] from the date of such commencement for the registration of any insecticide which he has been importing or manufacturing before that date:

Provided further that where any person referred to in the preceding proviso fails to make an application under that proviso within the period specified therein, he may make such application at any time thereafter on payment of a penalty of one hundred rupees for every month or part thereof after the expiry of such period for the registration of each such insecticide.

There is provision for Appeal against non-registration or cancellation, Appeal against the decision of a licensing officer.

## Central Insecticides Laboratory

The Central Government may, by notification in the Official Gazette, establish a **Central Insecticides Laboratory** is established under the control of Director by the Central Government to carry out the functions entrusted to it by or under this Act;

Provided that if the Central Government so directs by a notification in the Official Gazette, the functions of the Central Insecticides Laboratory shall, to such extent as may be specified in the notification, be carried out at any such institution as may be specified therein and thereupon the functions of the director of the Central Insecticides Laboratory shall to the extent so specified, be exercised by the head of the institution.

## There is:

- Prohibition of import and manufacture of certain insecticides
- Prohibition of sale, etc. of insecticide for reasons of public safety
- Offences and Punishment
- Power of the Central Government and State Government to make rules

## Insecticide Act 1971 (GSR 1650, DT. 9-10-1971)

In exercise of the powers conferred by section 36 of the Insecticides Act, 1968 (46 of 1968), the Central Government, after consultation with the Central Insecticides Board, hereby makes the following rules, namely: -

## Functions of the board, registration committee and laboratory

## Functions of the Board

The Board shall, in addition to the functions assigned to it by the Act, carry out the following functions, namely:

**a.** advise the Central Government on the manufacture of insecticides under the Industries (Development and Regulation) Act, 1951 (65 of 1951);

**b.** specify the uses of the classification of insecticides on the basis of their toxicity as well as their being suitable for aerial application;

**c.** advise tolerance limits for insecticides, residues and an establishment of minimum intervals between the application of insecticides and harvest in respect of various commodities;

**d.** specify the shelf-life of insecticides;

**e.** suggest colourisation, including colouring matter which may be mixed with concentrates of insecticides, particularly those of highly toxic nature;

**f.** carry out such other functions as are supplemental, incidental or consequential to any of the functions conferred by the Act or these rules.

## Functions of Registration Committee

The Registration Committee shall, in addition to the functions assigned to it by the Act, perform the following functions namely :

**a.** specify the precautions to be taken against poisoning through the use or handling of insecticides;

**b.** carry out such other incidental or consequential matters necessary for carrying out the functions assigned to it under the Act or these rules.

## Functions of Laboratory

The functions of the Laboratory shall be as follows :

**a.** to analyse such samples of insecticides sent to it under the Act by any officer or authority authorized by the Central or State Governments and submission of certificates of analysis to the concerned authority;

**b.** to analyse samples of materials for insecticide residues under the provisions of the Act;

**c.** to carry out such investigations as may be necessary for the purpose of ensuring the conditions of registration of insecticides;

**d.** to determine the efficacy and toxicity of insecticides;

**e.** to carry out such other functions as may be interested to it by the Central Government or by a State Government with the permission of the Central Government and after consultation with the Board.

## 6. Chemicals or alphabetized chemical list of different registered chemical pesticides (Insecticides, miticides, rodenticides, fungicides, bactricides, nematocides, bio-pesticides) along with their trade names and company's name

### INSECTICIDES

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 1. | Acephate | Orthene, | 75 Sp | M/S Chevron Chemical Co., Usa. |
| | | Asataf, | | M/S Rallis India Ltd. |
| | | Starthene | | M/S Shaw Wallace Co. Zuari Industries Ltd. Zuarinagar, Goa-403726 Sanjay Insecticide Pvt. Ltd. Jalna- 431203 |
| 2. | Acetamiprid | | | 1 Rallis India Limited, Bangalore |
| | | | | M/S Gharda Chemicals, Mumbai Unique Farm Aid Pvt. Ltd. Karol Bagh, New Delhi-110005 |
| 3. | Allethrin | Pynamin, Jet, Goodknight | 18.5 Ec | M/S Sumitomo Chemical Co., Japan |
| 4. | Alphacypermethrin | Fastac, Fendona, | 10 Ec | M/S Cyanamid India Ltd. |
| | | Renegrade, Bestox, Alphaguard, Alphadhan, Bilsip, Farsa, Farward, Delpha, Stop, Axis, Viper Alphanoor, , Meritalpha | | M/S Gharda Chemicals Col. |
| 5. | Azadirachtin (Neem Products) | | | Sidchem Mumbai-400049 The Tudiyalur Cooperative Agricultural Services Ltd. Tudiyalur Coimbatore-641034 |
| 6. | Bacillus Sphaericus | | | |
| 7. | Bacillus Thuringiensis (B.T.) Israelensis | | | Biostadt India Ltd.,Worli, Mumbai |
| 8. | Bacillus Thuringiensis (B.T.)Gallerae | | | Biostadt India Ltd.,Worli, Mumbai |
| 9. | Bacillus Thuringiensis (B.T.)Kurstaki | | | Biostadt India Ltd.,Worli, Mumbai |
| 10. | Bariumcarbonate | | | |
| 11. | Benfuracarb | | | |
| 12. | Beta Cyfluthrin | | 2.45% Sc | |
| 13. | Bifenazate | | | |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 14. | Bifenthrin | | | |
| 15. | | | | |
| 16. | Bromadiolone | | | |
| 17. | Buprofezin | | | |
| 18. | Carbaryl | Sevin, | 5%, 10% Powder | M/S Bayer (India ) Ltd. |
| | | Akozim, | | M/S Ei Dupont India Ltd. |
| | | Dhanuvin, Anuvin, Devicarb, Carvit, Corovin, Cabin | 50.85 Wp | M/S Rallis India Ltd. |
| | | | | S.S. Crop Care Ltd. |
| | | | 40% S | |
| | | | 4% Granule | |
| | | | 42 % Flowable | |
| 19. | Carbasulfan | Marshal | 25 EC | |
| 20. | Carbofuran | Hexafuran | 3 % Granule | M/S Eid Parry (I) Ltd. |
| | | Furadon, | | M/S Rallis India Ltd. |
| | | Anufuron, Diafuron | | |
| 21. | Cartap Hydrochloride | Padan, | 50 Sp | M/S Takeda |
| | | Caldan 4g & 50 Sp, | 4 % Granule | M/S Dhanuka Pesticides Ltd. Unique Farm Aid Pvt. Ltd. Karol Bagh, New Delhi-110005 |
| | | Kritep | | |
| 22. | Chlorantraniliprole | | | |
| 23. | Chlorfenapyr | | 10% Sc | |
| 24. | Chlorpyriphos | Durseban, Tricel, | 20 Ec | M/S Excel Industries Ltd. |
| | | Radar, | 4 % Powder | M/S De-Nocil Crop Prot. Ltd. |
| | | Tarkash, Nuclor, Kohiban, Suban, Strike, Dhanwan – 20, Trishul, Chlorguard, Fentum, Classic, Tebafam, Command | | M/S Searle India Ltd. Zuari Industries Ltd. Zuarinagar, Goa-403726 Sanjay Insecticides Pvt. Ltd. Jalna- 431203 |
| 25. | Chlorpyriphos Methyl | | | M/S De-Nocil |
| 26. | Chlothianidin | | | |
| 27. | Coumachlor | | | |
| 28. | Coumatetralyl | | | |
| 29. | Cyfluthrin | Baythroid, Baygon Spray | | M/S Bayer (India ) Ltd. |
| 30. | Cypermethrin | Basathrin, | 10 EC | M/S Cyanamid India Ltd. |
| | | Ripcord, | 25 EC | M/S Gharda Chemicals Col. |
| | | Ankush, | | M/S Basf India Ltd. |
| | | Cypermid, Arjun, Bilsip, Cyperguard, Jawa, Anukil Super- | | Sanjay Insecticides Pvt. Ltd. Jalna-431203 |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| | | killer, Milcard, Colt Rolothrin, Simbush, Kilcord, Corothrin, Cripford, Cyrus, Ultra, | | |
| 31. | Cyphenothin | | 0.15% In Combination As Aerosol | |
| 32. | Decamehtrin (Deltamethrin) | Decis, Butox, | 2.8 EC | M/S Roussel Uclaf, USA. |
| | | K-Othrin, Decakill, | | M/S Hoechst Schering Agroevo Ltd. |
| | | Demis, Dekis, Decacard, | 1.8 EC | ? |
| | | Betam 1.8 | 1.8 EC | ? |
| 33. | Diafenthiuron | | | |
| 34. | Diazinon | Basudin, Dianon, | 20 EC | M/S Hindustan Ciba-Geigy Ltd. |
| | | Ditaf | | |
| | | Devigenon, Diatox, Delzinon, Sujan | 40 WP | Dinkal Agro Product Pvt. |
| | | 4 % Powder | | |
| 35. | Dichloro Diphenyl Trichloroethane (Ddt) | Ddt, WP, DP | 50% WP | M/S Hindustan Insecticides Ltd. |
| | | | 75% WP | |
| 36. | Dichlorvos (Ddvp) | Vapona De De Vap., | 76% EC | M/S Hindustan Ciba-Geigy Ltd. |
| | | Didivane Uniphos, | | M/S Bayer (India ) Ltd. |
| | | Nuvan, Lugon, Ventof, Davep | | Sabero Organics Gujarat Ltd. Mumbai-400013 |
| 37. | Dicofol | Kelthane, | 18.5% EC | M/S Rhome & Haas Co., USA. |
| | | Colonel-S | | M/S Hindustan Insecticides Ltd. |
| | | | | M/S Indofil Chemicals Co. Ltd. |
| 38. | Diflubenzuron | Dimlin | 25% WP | M/S Philips-Duphar, B.V. |
| 39. | Dimethoate | Anurogor, Rogor, Diadhan, Devigon, Dimetox, Crogor, Parry, Dimate, Bharat Dimethoate | 30 EC | Parul Chemical Ltd.,Vadodara,Guj-390005 Sanjay Insecticides Pvt. Ltd. Jalna- 431203 |
| | | | | |
| | | | 40 EC | |
| | | | | |
| | | | 75 SP | |
| 40. | D-Trans Allethrin | | | M/S Shogun Organics Limited. |
| | | | | M/S Bilag Industries Ltd., Vapi |
| 41. | Ehtofenprox (Etofenprox | Trebon, | 10 EC | M/S Mistu Toatsu (Japan). |
| | | Nukil 10% Ec | | |
| 42. | Emamectin Benzoate | | | |
| 43. | Endosulfan | Endocell, Thiodon, | 35 EC | M/S Excel Industries Ltd. |
| | | Anu-Endosulfan, Devisulfan, Parasulfan, Hildon, Indotof, Indothane, Corosulfan, Indoship, Sufan, Marbel | 4% | Sanjay Insecticides Pvt. Ltd. Jalna-431203 |
| 44. | Ethephon | | | Dinkal Agro Product Pvt. Ltd. S.S. Crop Care Ltd. Bhopal. M.P. 462023 |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 45. | Ethion | Tafethion, | 50 EC | M/S Rallis India Ltd. |
| | | Cethion, Ethiol, | | M/S Fmc, USA. |
| | | Anumit, Dhanumit, Phosmite, Laser 50, Tope, Force, Midcel, Mid | | Unique Farm Aid Pvt. Ltd. Karol Bagh, New Delhi-110005 |
| 46. | Ethiprole | | | |
| 47. | Fenazaquin | | | |
| 48. | Fenitrothion | Folthion 50 EC | 50 EC | M/S Sunitomo Chemical Co., Japan |
| | | Sumithion | | M/S Bayer (India ) Ltd. |
| 49. | Fenobucarb (Bpmc) | Bassa, | 50 EC | M/S Sunitomo Chemical Co., Japan |
| | | Bipvin 50 Ec | | M/S Bayer (India ) Ltd. |
| 50. | Fenpropathrin | | 10 EC | |
| 51. | Fenpyroximate | | | |
| 52. | Fenthion | Lebaycin 1000 | | M/S Bayer (India ) Ltd. |
| 53. | Fenvalerate | Sumicidin, | 20 EC | M/S Sumitomo Chemical Co., Japan |
| | | Fenkil-20, | | M/S Rallis India Ltd. |
| | | Fenced, Nufen, Fencrod, Devifren, Parifen, Tatafen, Fenwal, Cororofen, Trumpcard, Frenok, Action, | 0.4 % Powder | M/S United Phosphorus Ltd. Sanjay Insecticides Pvt. Ltd. Jalna- 431203 |
| 54. | Fipronil | Regent | 5 % SC | M/S Bayer (India ) Ltd. S.S. Crop Care Ltd. |
| | | | 0.3 % Powder | |
| 55. | Flubendiamide | | | |
| 56. | Flufenzine | | | |
| 57. | Fluvalinate | Mavrik | 25% EC | M/S Sandoz (I) Ltd. |
| 58. | Hexythiazox | | | |
| 59. | Imidacloprid | Confidor, Bidor, Jambo, Tatamida, Stallion. Imidagold, Chemida, Moghambo, Josh, Imodol, Gauo (70 % Ws) | 17. 8 Sl | Amico Pesticides Ltd., Santacruz(E), Mumbai-400055 Hifield-Ag Chem. India Pvt. Ltd. Maharashtra- 431001 Unique Farm Aid Pvt. Ltd. Karol Bagh, New Delhi-110005 Zuari Industries Ltd. Zuarinagar, Goa-403726 Sanjay Insecticides Pvt. Ltd. Jalna- 431203 |
| | | | 10 % Granule | |
| 60. | Indoxacarb | | | Amico Pesticides Ltd.,Santacruz(E), Mumbai-400055 Hifield-Ag Chem. India Pvt. Ltd. Maharashtra-431001 Unique Farm Aid Pvt. Ltd. Karol Bagh, New Delhi-110005 Zuari Industries Ltd. Zuarinagar, Goa-403726 Sanjay Insecticides Pvt. Ltd. Jalna- 431203 |
| 61. | Iprovalicarb | | | |
| 62. | Lamdacyhalothrin | Karate | 5 EC | M/S Zeneca-Ici Agrochemicals Ltd. |
| | | | 2.5 EC | |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 63. | Lindane | Lintof, Devilin / Devigama, Lindust, Canodon | 20 EC | Ankar Ind.Pvt.Ltd.,Kolkata-700013 The Tudiyalur Cooperative Agricultural Services Ltd. Tudiyalur Coimbatore-641034 |
| | | | 0.65 %Powder | |
| | | | 6.5 % WP | |
| 64. | Malathion | Celthion, Malatox, | 50 EC | M/S Cyanamid India Ltd. |
| | | Malaphos | 5 % Powder | M/S Excel Industries Ltd. |
| | | | 25 % WP | M/S United Phosphorus Ltd. |
| 65. | Metaflumizone | | | |
| 66. | Metaldehyde | Halizan, | 25% DP | M/S Lonza |
| | | Metason, | | M/S Pesticides India. |
| | | Snailkil | | |
| 67. | Methomyl | Lannate, | 12.5 L | M/S Ei Dupont India Ltd. |
| | | Dunate | | M/S Bayer (India ) Ltd. |
| 68. | Methyl Parathion | Folidol Powder, Metacid, Paratof, Dhanudol, Chlophos, Chlorocid, Metapar, Devithion, Paracrop, Paracid, Dhanumar, | | M/S Bayer (India ) Ltd. Guzrat Krushi Rasayan Pvt. Ltd. |
| 69. | Millebemectin | ? | ? | ? |
| 70. | Monocrotophos | Nuva, Cron, | 36 Sl | M/S Cyanamid India Ltd. |
| | | Monocil, | | M/S De-Nocil Crop Prot. Ltd. |
| | | Azadrin, | | M/S Hindustan Ciba-GeigyLtd. |
| | | Bilphos, Monocid, Guardian, Monodhan, Cadet Balwan, Devimono, Storm, Perform, Hilcron, Sufos, Monohar, Monitor | | Dinkal Agro Product Pvt. Ltd. Unique Farm Aid Pvt. Ltd. Karol Bagh, New Delhi-110005 Veema Chemicals Dist Sabarkantha-383310 Zuari Industries Ltd. Zuarinagar, Goa-403726 Sanjay Insecticides Pvt. Ltd. Jalna- 431203 |
| 71. | Nuclear Polyhyderosis Virus Of Helicoverpa Armigera | | | |
| 72. | Nuclear Polyhyderosis Virus Of Spodoptera Litura | | | |
| 73. | Oxydemeton-Methyl | Metacystox, | 25 EC | M/S Bayer (India ) Ltd. |
| | | Metamol 250 | | M/S Konkan Pesticides. Sanjay Insecticide Pvt. Ltd. |
| 74. | Permethrin | Ambush | 25 EC | M/S Zeneca-Ici Agrochemicals Ltd. |
| | | Agniban | | |
| 75. | Phenthoate | Cidial, Papthion | 50 EC | M/S Sumitomo Chemical Co., Japan |
| | | | 2 DP | M/S Nissan Chemical Co., Japan |
| 76. | Phorate | Thimate, Foril, | 10 % Granule | M/S Cyanamid India Ltd. |
| | | Dahn 10g, Anumate, Phoratox, Lufate G, Paradox, | | M/S Rallis India Ltd. Spectrum Ethers Ltd. Sanjay Insecticide Pvt. Ltd. Jalna- 431203 |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 77. | Phosalone | Zolone 35 Ec | 35 EC | M/S Bayer (India ) Ltd. |
| 78. | Phosphamidon | Sumidon, Dimecron, | 85 SL | M/S Sudarshan Chemical Industries |
| | | Kindon Plus, Dhanucron, Peridon | | M/S Hindustan Ciba-Geigy Ltd. |
| 79. | Pirimiphos-Methyl | Acetellic | 50 EC | M/S Zeneca-Ici Agrochemicals Ltd. |
| | | | 25 % WP | |
| 80. | Prallethrin | Jet (Coil), Etoc | | M/S Sumitomo Chemical Co., Japan |
| 81. | Profenophos | Curacron, | 50 EC | M/S Hindustan Ciba-Geigy Ltd. Sidchem Mumbai-400049 Vijayalaxmi Insecticide & Pesticide Ltd. Punigutta, Hyderabad- 500082 Zuari Industries Ltd. Zuarinagar, Goa-403726 Sanjay Insecticides Pvt. Ltd. Jalna- 431203 |
| | | Carina, Girgit, Provem, Melcron, Baspro | | |
| 82. | Propargite | | | |
| 83. | Propetamphos | Curacron | | |
| 84. | Propoxur | Baygon 20 % | 25% EC | M/S Bayer (India ) Ltd. The Scientific Fertiliser Company Pvt. Ltd. Coimbatore-641002 |
| 85. | Pyrethrins (Pyrethrum) | | | |
| 86. | Pyridalyl | | | |
| 87. | Pyriproxyfen | | | |
| 88. | Quinalphos | Ekalaux, Quinaltaf | 25 EC | M/S Sandoz (I) Ltd. |
| | | | 5 % Granule | M/S Rallis India Ltd. |
| | | | 20 Af | Dinkal Agro Product Pvt. Ltd. |
| | | | 1.5 % Powder | Veema Chemicals Dist Sabarkantha-383310 Sanjay Insecticides Pvt. Ltd. Jalna- 431203 |
| 89. | S.Bioallethrin | | | |
| 90. | Sirmate | | | |
| 91. | Sodium Cyanide | | | |
| 92. | Spinosad | | 45 EC | Sanjay Insecticide Pvt. Ltd. |
| 93. | Spiromesifen | | | |
| 94. | Temephos | Abate | 50 EC | M/S Cyanamid India Ltd. |
| 95. | Thiacloprid Technical | | | |
| 96. | Thiodicarb | Larwin | 75 WP | |
| 97. | Thiometon | Ekatin 50 ZP | 50 ZP | M/S Sandoz (I) Ltd. |
| 98. | Transfluthrin | | | |
| 99. | Triazophos | Hostathion, | 40 EC | M/S Hoechst Schering Agroevo Ltd. |
| | | Sutathion, Tarzon, Trizele, Tirkon, Triazocel, | | |
| 100. | Trichlorfon | Dipterex | 50% EC | M/S Bayer (India ) Ltd. |
| 101. | Trichoderma Harzianum | | | |
| 102. | Trichoderma Viride | | | Ecosense Labs (I) Pvt. Ltd. Mumbai-400063 |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 103. | Zinc Phosphide | | | Agrosynth Chemicals Ltd.Bannerghatta Road, Bangalore-560076 |
| **Fungicides** | | | | |
| 104. | Aureofungin | | | Hindustan Antibiotics Ltd, Pune |
| 105. | Azoxystrobin | | | |
| 106. | Beauveria Bassiana | | | Ecosense Labs (I) Pvt. Ltd. Mumbai-400063 |
| 107. | Benomyl | Benlate, | 50 WP | M/S Ei Dupont India Ltd. |
| | | Benomyl | | M/S Eid Parry (I) Ltd. |
| 108. | Bitertanol | Deadline, | 25 WP | M/S Lipha S.A. |
| | | Sibutol | | |
| 109. | Captan | Captaf, | 50 WP | M/S Rallis India Ltd. |
| | | Hexacap | 75 WS | M/S Zeneca-Ici Agrochemicals Ltd. |
| 110. | Carbendazim | Bavistin, Agrozim, | 50 WP | Basf (India ) Ltd. |
| | | Carbate, Hetavax | | Gujarat Insecticides Ltd. |
| | | | | Paushak Ltd. Zuari Industries Ltd. Zuarinagar, Goa-403726 |
| 111. | Carboxin | Vitvax, Hiltavax | 75 WP | M/S Uniroyal Chem. Co. |
| | | | | M/S Hindustan Insecticides Ltd. |
| 112. | Carpropamid Technical | | | |
| 113. | Chlorothalonil | Bravo, | 75 WP | M/S Diamond Alkali Co. |
| | | Kawach 75 WP | | M/S Sandoz (I) Ltd. |
| 114. | Copper Hydroxide | | 77 WP | |
| 115. | Copper Oxychloride | | 50 WP | Agro Chemicals Of India,Sharanpur Road,Nasik-422002 Penta Chem Maharashtra-414005 |
| 116. | Copper Sulphate | | | Prescient Industries Ltd. Naroda Ahmedabad-382330 |
| 117. | Cuprous Oxide | | | |
| 118. | Cymoxanil | | 80 WP | Sulphur Mills Ltd. |
| 119. | Dazomet | | | |
| 120. | Dichloropropene And Dichloropropane Mixure (Dd Mixure) | | | |
| 121. | Difenoconazole | | 25 WP | |
| 122. | Dimethomorph | | | |
| 123. | Dinocap | Karathane | 48 EC | M/S Rhom & Haas Co. |
| | | | | M/S Indofil Chemicals Co. Ltd. |
| 124. | Dithianon | Delan | 75 WP | M/S Cyanamid India Ltd. |
| 125. | Dodine | Karmex WP, | 65 WP | M/S Cyanamid India Ltd. |
| | | Direx | | M/S Ei Dupont India Ltd. S.S. Crop Care Ltd. |
| 126. | Edifenphos | Hinosan | 50 EC | M/S Bayer (India ) Ltd. |
| 127. | Famoxadone | | | |
| 128. | Fenamidone | | | |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 129. | Fenarimol | Rubigan | 12% Ec | M/S Dow Elanco Ltd. |
| | | | | M/S De-Nocil Crop Prot. Ltd. |
| 130. | Flusilazole | | | |
| 131. | Fosetyl - Al | Alitte | 80 WP | M/S Bayer (India ) Ltd. |
| 132. | Hexaconzole | Anvil, Planete, Contaf | 5 EC | M/S Zeneca-Ici Agrochemicals Ltd. |
| | | | | M/S Rallis India Ltd. Zuari Industries Ltd. Zuarinagar, Goa-403726 |
| 133. | Imiprothrin Technical | | | |
| 134. | Iprodione | Rovral | 50 WP | M/S Bayer (India ) Ltd. |
| 135. | Isoprothiolane | | 40 EC | Rallis India Ltd. |
| 136. | Kasugamycin | | 3 Sl | |
| 137. | Kitazin (Iprobenfos) | Kitazin | 48 EC | M/S Kumiai Chemical Industry (Japan) |
| | | | 17% Granule | |
| 138. | Kresoxim Methyl | | | |
| 139. | Lime Sulphur | | | Yogleela Sulphur And Agchem Ind. Pvt. Ltd. Mumbai-400003 |
| 140. | Mancozeb | Dithane M-45 | 75 WP | M/S Bayer (India ) Ltd. |
| | | Indofil M-45 | | M/S United Phosphorus Ltd. |
| | | | | M/S Indofil Chemicals Co. Ltd. |
| | | | | M/S Hindustan Insecticides Ltd. The Tudiyalur Cooperative Agricultural Services Ltd. Tudiyalur Coimbatore-641034 Zuari Industries Ltd. Zuarinagar, Goa-403726 |
| 141. | Metalaxyl | Dosanex, Deftor | 35% And 40% WS | M/S Sandoz (I) Ltd. |
| | | | | M/S Hoechst Ltd. Punjab Chemicals & Pharmaceuticals Ltd. |
| 142. | Metalaxyl-M | | | |
| 143. | Methoxy Ethyl Mercury Chloride (Memc) | | 3% Fs | |
| | | | 6% Fs | |
| 144. | Metiram | | | |
| 145. | Myclobutanil | Systhane | 36% Sl | M/S Indofil Chemicals Co. |
| | | | | M/S Rhom & Haas Co. Vijayalaxmi Insecticide & Pesticide Ltd. Punigutta, Hyderabad- 500082 |
| 146. | Oxycarboxin | Plantvax | 20 EC | M/S Uniroyal Chemical Co. |
| 147. | Paclobutrazol | | 23 SC | |
| 148. | Penconazole | Topas | 10 EC | M/S Hindustan Ciba-Geigy Ltd. N Vijayalaxmi Insecticide & Pesticide Ltd. Punigutta, Hyderabad- 500082 |
| 149. | Pencycuron | | | |
| 150. | Propiconazole | Radar, Tilt | 25 EC | M/S Hindustan Ciba-Geigy Ltd. |
| | | | | M/S Zeneca-Ici Agrochemicals Ltd. Sidchem Mumbai-400049 |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 151. | Propineb | | | |
| 152. | Pyrachlostrobin | | | |
| 153. | Streptomycin + Tetracycline | | | Hindustan Antibiotics Ltd, Pune |
| 154. | Sulphur | | | Parul Chemicals Ltd.,Vadodara,Guj-390005<br>The Standard Chemical Co. Pvt. Ltd.Ambattur, Chennai-600098<br>Ulhas Oil & Chemical Industries Pvt. Ltd. Mumbai-400023 |
| 155. | Tebuconazole | | 2.5 DS | Sulphur Mills Ltd. |
| 156. | Thifluzamide | | | |
| 157. | Thiomethoxiam Technical | | | M/S Syngenta, Mumbai |
| | | | | M/S Rallis India |
| 158. | Thiophanate-Methyl | Topsin, Alert, Baynate | 70 WP | M/S Nippon Soda Co. Ltd. |
| | | | | M/S Bay Organics Ltd. |
| | | | | M/S Nagarjauna Agrochemical Ltd. |
| 159. | Thiram | Furam | 80 WP | M/S Smp Pvt. Ltd. Swarup Chemicals Pvt. Ltd. |
| 160. | Triadimefon | Bayleton | 25 WP | M/S Bayer (India ) Ltd. |
| 161. | Tricyclazole | Trooper, Bean | 75 WP | M/S De-Nocil Crop Prot. Ltd.<br>Vijayalaxmi Insecticide & Pesticide Ltd. Punigutta, Hyderabad- 500082 |
| 162. | Tridemorph | Calixin | 80 EC | M/S Basf India Ltd. |
| 163. | Trifloxistrobin | | | |
| 164. | Validamycin | | | |
| 165. | Verticillium Lecanii | | | |
| 166. | Zineb | Dithane Z-78 | 80 WP | M/S Rhom & Haas , Usa |
| | | | | M/S Bayer (India ) Ltd. |
| 167. | Ziram | Cuman, Dhanika Z-27 | 80 WP | M/S Hindustan Ciba-Geigy Ltd. |
| | | | | M/S Hoechst Schering Agroevo Ltd. |
| **Herbicides** | | | | |
| 168. | 2,4-Dichlorophenoxy Acetic Acid | Erbitox, Combi, | 34 EC | M/S Bayer (India ) Ltd.<br>M/S Zeneca-Ici Agrochemicals Ltd.<br>M/S Agromore (P) Ltd. |
| | | Agrodone-48 | | |
| 169. | Alachlor | Lasso, Attack 10g, Cattch 50ec | 50 EC | M/S Monsanto Chemical Co. Ltd. |
| | | | 10% Gr | M/S Searle (I) Ltd. |
| 170. | Anilofos | Arozen, Aniloguard | 30 EC | M/S Hoechst Schering Agroevo Ltd. |
| | | | | M/S Gharda Chemicals Co. |
| 171. | Atrazine | A Atrex, | 50 WP | M/S Hindustan Ciba-Geigy Ltd. |
| | | Gesaprim Atrataf | | M/S Rallis India Ltd. |
| 172. | Bendiocarb Technical | | | |
| 173. | Bensulfuron | | | |
| 174. | Benthiocarb (Thiobencarb) | Saturan | 50 EC | M/S Kumai (Japan) |
| | | | 10% Granule | M/S Chevron Chemical Co. Usa |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 175. | Bispyribac Sodium | | | |
| 176. | Butachlor | Machete, | 5 G | M/S Monsanto Chemical Co. Ltd. |
| | | Bilchlor | | M/S Bayer (India ) Ltd. |
| 177. | Carfentazone Ethyl | | | |
| 178. | Chlorimuron Ethyl | Sulfonyl Urea | | |
| 179. | Cinmethylene | | | |
| 180. | Clomazone | | | |
| 181. | Cyhalofop-Butyl | | | |
| 182. | Diclofop-Methyl | | | |
| 183. | Diuron | Cyprex, Dodene | 80 WP | M/S Bayer (India ) Ltd. |
| | | | | M/S Cyanamid India Ltd. |
| 184. | Ethoxysulfuron Technical | | | |
| 185. | Fenoxaprop-P-Ethyl | | | Parul Chemicals Ltd.,Vadodara,Guj-390005 |
| 186. | Fluchloralin | Basalin | 45 EC | M/S Basf (India) Ltd. |
| 187. | Flufenacet Technical | | | |
| 188. | Flufenoxyuron | Benzoyl Urea | | |
| 189. | Glufosinate Ammonium | | 13.5% Sl | |
| 190. | Glyphosate | Round Up, | 41 Sl | M/S Monsanto Chemical Co. Ltd. |
| | | Glycel | | M/S Zeneca-Ici Agrochemicals Ltd. |
| | | | | M/S Excel Industries Ltd Unique Farm Aid Pvt. Ltd. Karol Bagh, New Delhi-110005 |
| 191. | Hexazinone | | | |
| 192. | Imazethapyr | Imidazolinone | | |
| 193. | Isoproturon | Arelon, Dhar, Isoguard 75 Wp | 75 WP | M/S Bayer (India ) Ltd |
| | | | | M/S Hoechst Schering Agroevo Ltd. |
| | | | | M/S Gharda Chemicals Ltd. |
| 194. | Linuron | Urea | | |
| 195. | Lufenuron | | | |
| 196. | Mepiquat Chloride Technical | | | M/S Gharda Chemicals Ltd., Mumbai |
| 197. | Mesosulfuron Methyl + Iodosulfuron Methyl Sodium | | | |
| 198. | Methabenzthiazuron | Tribunil | 70 WP | M/S Bayer (India ) Ltd |
| 199. | Methyl Chloro Phenoxy Acetic Acid (Mcpa) | Agroxona, | 40 SL | M/S Zeneca-Ici Agrochemicals Ltd. |
| | | Blagal | 40% Arosol | M/S Bayer (India ) Ltd. |
| 200. | Metolachlor | Dual | 50 EC | M/S Hindustan Ciba-Geigy Ltd. |
| 201. | Metribuzin | Sencor, Lxone | 70 WP | M/S Bayer (India ) Ltd |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| | | | | M/S Ei Dupont India Ltd. Punjab Chemicals & Pharmaceuticals Ltd. |
| 202. | Metsulfuron Methyl | Sulfonyl Urea | | |
| 203. | Novaluron | | | |
| 204. | Oxadiargyl Technical | | | |
| 205. | Oxadiazon | Ronstar | 25 EC | M/S Bayer (India ) Ltd |
| 206. | Oxyfluorfen | Oxygold | 23.5 EC | M/S Indofil Chemicals Co. |
| 207. | Paraquat Dichloride | Scythe, Speed Way | 24 SL | M/S Zeneca-Ici Agrochemicals Ltd. |
| | | | | M/S Cyanamid India Ltd. |
| 208. | Pendimethalin | Stomp | 30 EC | M/S Cyanamid India Ltd.Guzrat Krushi Rasayan Pvt. Ltd. The Scientific Fertiliser Company Pvt. Ltd. Coimbatore-641002 |
| | | M/S Herbadox | | |
| 209. | Piroxofop Propargyl | | | M/S United Phosphorus Limited, Gujarat. |
| 210. | Pretilachlor | Rifit | 50 EC | M/S Hindustan Ciba-Geigy Ltd. Sidchem Mumbai-400049 The Scientific Fertiliser Company Pvt. Ltd. Coimbatore-641002 Vijayalaxmi Insecticide & Pesticide Ltd. Punigutta, Hyderabad- 500082 |
| | | | 30.7 EC | |
| 211. | Propanil | Stomp F-34, | 35 EC | M/S Cyanamid India Ltd. |
| | | Surcopur | | M/S Bayer (India ) Ltd. |
| 212. | Propaquizafop | | | |
| 213. | Pyrazosulfuron Ethyl | | | |
| 214. | Pyrithiobac Sodium | | | |
| 215. | Quizalfop Ethyl | | | |
| 216. | Quizalofop-P-Tefuryl | | | |
| 217. | Sulfosulfuron | | | M/S United Phosphorus Limited |
| | | | | M/S Gharda Chemicals, Mumbai Unique Farm Aid Pvt. Ltd. Karol Bagh, New Delhi-110005 |
| 218. | Triallate | Avadex Bw, Far-Go | 50 EC | M/S Basf India Ltd. |
| 219. | Trifulralin | Treflon 48%, Tri-4 | 48 EC | M/S De-Nocil Crop Prot. Ltd. |
| | | | | M/S Cyanamid India Ltd. |
| **Fumigant** | | | | |
| 220. | Aluminium Phosphide | | | M/S Excel Industries, Mumbai |
| | | | | Agrosynth Chemicals Ltd., Bangalore |
| | | | | M/S Sandhya Organic Chemicals Ltd., Mumbai |
| | | | | M/S United Phosphorus Ltd., Mumbai. |
| 221. | Ethylene Dibromide And Carbon Tetrachloride Mixture (Edct Mixture 3:1) | | | |

| Sl. No. | Common Name | Trade Name | Formulation | Name of Company/ Manufacturer |
|---|---|---|---|---|
| 222. | Forchlorfenuron | | | Hifield-Ag Chem. India Pvt. Ltd. Maharashtra- 431001 |
| 223. | Hydrogen Cyanamide | | | Hifield-Ag Chem. India Pvt. Ltd. Maharashtra- 431001 |
| 224. | Magnesium Phosphide Plates | | | |
| 225. | Methyl Bromide | | | M/S Tata Chemicals, Mithapur |
| | | | | M/S Intech Pharma Pvt. Ltd., New Delhi 9(4) |
| 226. | Triacontanol | | | |
| **Plant Growth Regulator** | | | | |
| 227. | Alphanaphthyl Acetic Acid | | | |
| 228. | Chlormequate Chloride | | | M/S Basf India Ltd., Mumbai |
| 229. | Gibberellic Acid | | | M/S Shankar & Sastry Ltd., Bangalore Hifield-Ag Chem. India Pvt. Ltd. Maharashtra- 431001 |

## 7. List of different banned chemical pesticides, date of banning, cause of banning, proved health hazard due to those pesticides before banning

| A. | Pesticides Banned for manufacture, import And use (27 Nos.) | | Notification No. & Date | Reasons | Remarks if any |
|---|---|---|---|---|---|
| | 1. | Aldrin | S.O.648(E) dated 20.09.96 | It is likely to involve health hazards to human beings and animals | |
| | 2. | Benzene Hexachloride | S.O.1158 (E) Dated 20.12.2000 | It is likely to cause risk to human beings and animals | |
| | 3. | Calcium Cyanide | S.O.873 (E) Dated 03.09.95 | It is likely to involve health hazards to human beings, animals and environment | |
| | 4. | Chlordane | S.O.648 (E) 20.09.96 | It is likely to involve health hazards to human beings and animals | |
| | 5. | Copper Acetoarsenite | S.O.873 (E) Dated 03.09.95 | It is likely to involve health hazards to human beings, animals and environment | |
| | 6. | Cibromochloropropane | S.O.569 (E) Dated 25.08.89 | Recommendation of Expert Committee with a view to reviewing the continue use in India of pesticides that are either banned or restricted for use in other countries | |

| A. | Pesticides Banned for manufacture, import And use (27 Nos.) | | Notification No. & Date | Reasons | Remarks if any |
|---|---|---|---|---|---|
| | 7. | Endrin | S.O.382 (E) Dated 15.05.90 | It is likely to involve health hazards to human beings, animals and environment | |
| | 8. | Ethyl Mercury Chloride | S.O.873 (E) dated 03.09.95 | It is likely to involve health hazards to human beings, animals and environment | |
| | 9. | Ethyl Parathion | No Notification Banned in 14th RC dated 30.12.74 | Due to highly toxic | |
| | 10. | Heptachlor | S.O.648 (E) dated 20.09.96 | It is likely to involve health hazards to human beings and animals | |
| | 11. | Menazone | S.O.873 (E) Dated 03.09.95 | It is likely to involve health hazards to human beings, animals and environment | |
| | 12. | Nitrofen | S.O.325 (E) Dated 11.05.92 | It is likely to involve health hazards to human beings, animals and damage to environment | |
| | 13. | Paraquat Dimethyl Sulphate | S.O.658 (E) dated 04.09.92 | It is likely to involve health hazards to human beings, animals and damage of the environment | |
| | 14. | Pentachloro Nitrobenzene | S.O.569 (E) dated 25.08.89 | Recommendation of Expert Committee with a view to reviewing the continue use in India of pesticides that are either banned or restricted for use in other countries | |
| | 15. | Pentachlorophenol | S.O…dated 17.05.91 | It is likely to involve health hazards to human beings, animals and damage to environment | |
| | 16. | Phenyl Mercury Acetate | S.O.191 (E) dated 26.03.99 | It is likely to involve health hazards to human beings and animals | |
| | 17. | Sodium Methane Arsonate | S.O.873 (E) dated 03.09.95 | It is likely to involve health hazards to human beings, animals and environment | |
| | 18. | Tetradifon | S.O.325 (E) Dated 11.05.92 | It is likely to involve health hazards to human beings, animals and damage to environment | |
| | 19. | Toxafen | S.O.569 (E) Dated 25.08.89 | Recommendation of Expert Committee with a view to reviewing the continue use in India of pesticides that are either banned or restricted for use in other countries | |

| A. | Pesticides Banned for manufacture, import And use (27 Nos.) | | Notification No. & Date | Reasons | Remarks if any |
|---|---|---|---|---|---|
| | 20. | Aldicarb | S.O.682 (E) dated 17.07.2001 | It is likely to involve health hazards to human beings | |
| | 21. | Chlorobenzilate | S.O.682 (E) dated 17.07.2001 | It is likely to involve health hazards to human beings | |
| | 22. | Dieldrine | S.O.682 (E) dated 17.07.2001 | It is likely to involve health hazards to human beings | |
| | 23. | Maleic Hydrazide | S.O.682 (E) dated 17.07.2001 | It is likely to involve health hazards to human beings | |
| | 24. | Ethylene Dibromide | S.O.682 (E) dated 17.07.2001 | It is likely to involve health hazards to human beings | |
| | 25. | TCA (Trichloro acetic acid) | S.O.682 (E) dated 17.07.2001 | It is likely to involve health hazards to human beings | |
| | 26. | Metroxuron | S.O.47 (E) dated 08.01.2008 | It is likely to involve health hazards to human beings and environment | |
| | 27. | Chlorofenvinphos | S.O.3007 (E) dated 31.12.2008 | It is likely to involve health hazards to human beings and environment | |
| **B. Pesticide / Pesticide formulations banned for use but their manufacture is allowed for export (2 Nos.)** | | | | | |
| | 28. | Nicotin Sulphate | S.O.325 (E) Dated 11.05.92 | It is likely to involve health hazards to human beings and environment | |
| | 29. | Captafol 80% Powder | S.O.679 (E) dated 17.07.2001 | It is likely to involve health hazards to human beings | |
| **C. Pesticide formulations banned for import, manufacture and use (4 Nos)** | | | | | |
| | 1. | Methomyl 24% L | S.O.191 (E) dated 26.03.99 | It is likely to involve health hazards to human beings and animals | |
| | 2. | Methomyl 12.5% L | S.O.190 (E) dated 26.03.99 | It is likely to involve health hazards to human beings and animals | |
| | 3. | Phosphamidon 85% SL | S.O.190 (E) dated 26.03.99 | It is likely to involve health hazards to human beings and animals | |
| | 4. | Carbofuron 50% SP | S.O.678 (E) dated 17.07.2001 | It is likely to involve health hazards to human beings | |
| **D. Pesticide withdrawn (7 Nos)** | | | | | |
| | 1. | Dalapon | S.O.915 (E) dated 15.06.2006 | Core Group of Experts after Consultation with Registration Committee and on being satisfied the further use of deemed to be registered pesticides is likely to cause risk to human beings and animals as their safety cannot be fully established for want of complete data | |
| | 2. | Ferbam | | | |
| | 3. | Formothion | | | |
| | 4. | Nickel Chloride | | | |
| | 5. | Paradichlorobenzene (PDCB) | | | |
| | 6. | Simazine | | | |
| | 7. | Warfarin | | | |

## 8. Measures adopted for pesticide safety and information on the evaluation of the pesticides risk.

The Directorate of Plant Protection regularly publishes Plant Protection Bulletin (PPB) for updating latest know–how. In this regard, new research findings are invited from the Scientists of Agricultural Universities, Reputed Research Institutions, Universities with the intention of disseminating valuable information on different aspects of plant protection, such as changing pest and disease scenario, epidemiological aspects, Integrated Pest Management approaches, latest information about new pesticide application technology for publishing in Quarterly Journal PLANT PROTECTION BULLETIN (PPB), a free publication for use of Farming community and Extension Workers and grass root level workers throughout the country. The PPB also enlightens our knowledge at home about global concern, and safety and preservation of environment and Eco-system. The PPB is enrolled among National and International journals as it has International Standard Serial Number (ISSN) and among Agriculture related publications.

A color code has been introduced for pesticide containers. A red stripe on the label indicates that the chemical is extremely poisonous, yellow indicates highly poisonous and blue and green indicate that they are moderately and slightly poisonous, respectively. These colors are used at the bottom of the pesticide label, along with pictures to show the type of protective clothing that should be used while handling them.

Various Do's and Don'ts have been documented by DPPQ for purchasing, storage, handling, preparation and application of pesticide spray solutions, selection of equipment, and after spray operations, for farmers while purchasing and using the pesticides for their safe use.

## 9. List of pest outbreak and their management options

**Pest problems**

- **Insect Pests**
  - *H. armigera / Spodoptera / Plutella xylostella /* Rice BPH / stem borer / White grubs / termites /Fruit fly / Mites /mealy bugs
- **Diseases**
  - Sheath blight in rice and maize /downy mildews / bract mosaic in banana / wilts / virus diseases / *Phytophthora* diseases / parawilt in cotton, mango malformation/ BBD of pomegranate
- **Nematodes**
  - Root knots, reniform, burrowing nematodes, root knot complex with *Ceratocystis fimbriata* in pomegranate / citrus / root knot on mulbery
- **Weeds**
  - Large number in different ecosystems

**Recent epidemics**

- 2000 -01
  - Groundnut bud necrosis; coconut mite
- 2001
  - *H. armigera* on cotton, pigeonpea and chickpea all over India
- 2004
  - *Spodoptera litura* on soybean in Kota region of Rajasthan
- 2005
  - Potato late blight in the northern belt of Punjab, UP

- 2006 & 07
  - Gujarat & Punjab - mealy bug on cotton
- 2008
  - BPH and neck blast on rice in the northern Indo Gangetic belt
  - *Spodoptera litura* on soybean in Maharashtra / Potato LB in WB
- 2008 to date
  - *Paracoccus marginatus* (mealy bug ) on papaya , tapioca, mulberry
- 2009
  - Swarming caterpillar on rice in Orissa

- **Chronic pests**

  In addition, gummosis of citrus, nematode problems on rice and vegetables, white grubs on sugarcane are spreading in alarming proportions. Due to these epidemics, there is 18% losses across the country (Rs 60,000 Crore) *(Working Subgroup on Plant Protection, Planning Commission; 2001)*

  For management of these pests, need based application of pesticides is required as one of the components in IPM program. In IPM strategy, use of cultural and mechanical practices, use of bio-agents and bio-pesticides, use of resistant varieties and hybrid seeds; and the monitoring of pests are the most important actions among all components.

## 10. List of resistant pest species developed along with scientific evidence and the description of the institutions where the research works have been done.

Resistance to pyrethroids is quite high with the levels of 108 to 7220 folds in almost all parts of the country. Earlier, there was report of resistance factors of 5 - 6500 folds to pyrethroids in field populations of *Helicoverpa* collected from all parts of the country. Pyrethroid resistance is wide spread in India, being at high levels in Maharashtra, Punjab, AP and Tamilnadu. Resistance levels during the entire season are usually high with minor exceptions during early cotton season and appear to be independent of the pyrethroid use pattern. The problem is still most severe in the coastal belt of AP. When used alone pyrethroids are no longer found to be effective against *Helicoverpa* except on larvae less than second instar stage. However, resistance assays carried out against the pink bollworm and spotted bollworm indicated that these were still susceptible to pyrethroids. Pyrethroid resistance levels during 1993 - 99 have been high all over India. In most parts of the country, survival frequencies to that discriminating dose of cypermethrin 0.1 µg are still found to be 95 - 100 %. Despite the steady decline in the preference for pyrethroids in cotton pest management over the past two - three years, resistance to pyrethroids does not appear to be on the decline. The '93 - '99 data on 'in - season' changes in pyrethroid resistance at all centres, however, indicates that resistance levels were relatively lower during the cotton season (October - November for A.P., Coimbatore and Maharashtra and August - September for North). This information supports the idea that pyrethroids could still be used on cotton against *Helicoverpa* infestation during the period mentioned above.

Resistance to Endosulfan was found to be 1 - 14 folds in the field populations tested. There was report of resistance factors of 2 - 28 folds and it was suggested that field control failures could be caused due to resistance factors as low as 5 -10 folds. Seasonal averages of resistance to endosulfan have been very high throughout '93 - '99 at Coimbatore (45 - 57 %), Guntur (47-67 %) and Nagpur (40 - 46 %), but relatively low in Rangareddy district (29-35 %) and parts of Punjab and Haryana (15 - 20 %). However, a closer look at the dynamics of resistance for all seasons of '93-'99 reveals that, at all the monitoring sites (except Coimbatore ), resistance to endosulfan has been low (20 - 25 %) at the beginning of cropping season and generally increases to about 40 - 50 % by the end of November

when spraying on cotton ceases. At Coimbatore, resistance to endosulfan appears stable at about 45 - 50 % (with minor exceptions) throughout the season during all the years. Hence endosulfan is being recommended as an early season insecticide. Resistance to quinalphos was found to be low to moderate at 1 - 29 folds, for the field populations collected recently during '98-'99. Resistance was higher in the coastal belt of Andhra Pradesh and some pockets of Central India. Earlier quinalphos resistance has not been reported to exceed 2 - 9 folds in field populations (Armes et al., 1996 ). Resistance to quinalphos has been high at Guntur (45 - 66 %) and Coimbatore (44 - 48 %), but low (about 20 - 25 %) in the Punjab, Rangareddy and Nagpur. It was also observed that resistance levels to organophosphates (OPs) and endosulfan had increased in the season depending on the use of these compounds. OPs such as quinalphos, chlopyriphos and profenophos can be used during the peak reproductive phase of the crop. Resistance to menthomyl was 1 - 22 folds, with higher levels in the coastal belt of Andhra Pradesh and some parts of Central India. Resistance to methomyl was monitored at all sites (except Coimbatore) during '97-'99 seasons. Resistance appears to be gradually on the rise with recent increase in use of this chemical for *Helicoverpa* control. Resistance increases were similar to that of OPs, for example, resistance was moderate (31 - 40 %) in September, October and December but increased later to 69% in February. Armes et al. (1996) report resistance levels of 2 - 38 folds to methomyl in different parts of India, with the highest at 162 folds in Guntur. The carbamates can be used as a single spray prior to the pyrethroid window (Insecticide resistance management, CICR, Nagpur, 2010).

## 11. Available information on pesticide misuse, about environmental and health effects of different pesticides under local conditions and possible remedial options (if any), account on farmer practices in relation to health of their own and consumer health

As per AVRDC report (Technical Bulletin No. 37), on EFSB (eggplant fruit and shoot borer) as the most serious pest of eggplant followed by Epilachna beetle and mites, ninety-seven percent of farmers used pesticides to combat EFSB and 58% felt that the use of pesticides was profitable, but 36% of farmers felt that pesticides were not effective in reducing EFSB damage. They sprayed pesticides on an average of 54 times during the winter season. Farmers used all major classes of chemical insecticides, including organochlorines, organophosphates, carbamates, and synthetic pyrethroids to combat EFSB. There was widespread misuse, especially overuse of chemicals. Pesticide misuse decreased as farming experience and level of education increased. Greater awareness about IPM technologies as well as awareness of failures of pesticide use also reduced pesticide misuse.

Nearly half of the farmers were aware of beneficial insects in eggplant fields, but only 26% were aware of the harmful effect of pesticides on these natural enemies of EFSB. At the same time, 54% of them were aware of the adverse effect of pesticides on eggplant consumers. Birbhum farmers were able to get advice on pesticide use in combating EFSB from various sources, but 79% of farmers depended on the local pesticide sales agent on what chemicals to use. This practice is similar elsewhere in India. Ninety-two percent of farmers covered their face and/or body with cloth while applying pesticides

The indiscriminate use of broad-spectrum chemicals has resulted in reduction of natural enemies, risk of contamination of food and fodder, ecosystem and hazards to environment including human beings through food chain and ground water. The majority of pesticide poisoning and death occur in the developing world, although far greater quantities of pesticides are used in the developed world. The reason is that-

- The developing countries have a higher proportion of the population involved in agriculture.

- Poorer application technology and pesticide handling practices.
- Use of improper equipment (e.g. leaky back pack sprayers).
- Generally employ more toxic pesticides than those used in developed countries.

## 12. Available information about pesticide residue on food, water, soil, environment *etc.*, and methods of monitoring

According to studies, around three new synthetic chemicals are introduced each day in the agricultural sector. A variety of harmful effects because of indiscriminate application, are experienced by human beings, aquatic ecosystem, animals, birds, food, environment and plants (Cytogenetic Hazards).

A season-long assessment of acute pesticide poisoning among farmers was conducted in three villages in India. Fifty female cotton growers reported the adverse effects experienced after exposures to pesticides by themselves and by their male relatives (n=47). The study documented the serious consequences of pesticide use for the health of farmers, particularly women field helpers. Typically female tasks such as mixing concentrated chemicals and refilling spraying tanks were as hazardous as direct pesticide application. Of 323 reported events, 83.6% were associated with signs and symptoms of mild to severe poisoning, and 10% of the pesticide application sessions were associated with three or more neurotoxic/systemic signs and symptoms typical of poisoning by organophosphates, which were used in 47% of the applications. Although in 6% of the spray sessions the workers' neurotoxic effects were extremely serious, none sought medical care. Low-income marginal farmers were more often subjected to severe poisoning than were landlords (2005)

The New Delhi-based Centre for Science and Environment (CSE) did a study (Analysis of Pesticide Residues in Blood Samples from Villages of Punjab; CSE/PML/PR-21/2005) of randomly selected blood samples from four Punjab villages -- Mahi Nangal, Jajjal and Balloh in Bhatinda district and Dher in Ropar district. The study found six to thirteen pesticides in virtually all the blood samples. Some of the pesticides were: HCH, Aldrin, DDT, Monocrotophos, Endosulfan, Phosphamidon, Chlorpyrifos and Malathion. Past studies in Punjab have shown pesticide residues in breast milk, milk from cattle, fruits and vegetables.

Many organophosphate and carbamate insecticides are extremely hazardous to fish and wildlife. Fish kills due to these insecticides have been documented. OP insecticides can bioconcentrate in fish, frogs, tadpoles, and toads to levels that pose hazards to their predators. The contamination of fish pond with as little as 0.005 ppm of chlorpyriphos can significantly reduce the zooplanktons and dissolved oxygen level and can increase the free carbon dioxide level. It can also fishes at as low concentration as a few parts per trillion (Insecticide fact sheets, 2000). The CB insecticide carbofuran is extremely toxic to wildlife and fish.

There were 2,000 vultures in Bharatpur's Keoladeo National Park during the 1980s. In 1998 experts could spot only four. Ornithologist Asad Rahmani fears that the vulture is disappearing throughout India. To find out the reason for this decline, the Centre for Science and Environment sent its toxicologist Amit Nair to collect carcass samples -- food for the vulture -- from the park. They had high levels of chemical pesticides.

Organochlorine pesticides residue (isomers of HCH α, β, γ and DDT) in Kuano river water at pre-monsoon and post-monsoon period were analyzed for the period June, 2004 to May, 2006. Results indicated the presence of isomers of HCH (α, β, γ) and DDT in both the study years even though the usage of both these pesticides is restricted. The higher concentration of pesticide was found in post monsoon. The total concentration of HCH ranged from 0.0002 to 0.020 μg $l^{-1}$ and 0.0002 to 0.009 μg $l^{-1}$ and total DDT concentration ranged from 0.0009 to 0.003 μg l-1 and 0.00 to

0.0010 µg l-1 during first and second year of study, respectively. No temporal or spatial distribution pattern was found perhaps due to presence of multiple and aleatory sources. In most of the samples, the pesticides residues detected were much higher than drinking water quality standards. It can be inferred that the environment may be considerably degraded by these compounds, providing additional impact to the biota and bringing a potential risk to human health.

Passive and active air sampling was conducted between Dec 2006 and March 2007 in 7 metropolitan cities: New Delhi, Kolkata, Mumbai, Chennai, Bangalore, Goa, and Agra. HCHs observed in India appear to be the highest reported across the globe. Chlordanes and endosulfans are lower than levels reported from southern China. Passive sampling enabled within- and between-city variations to be assessed. As expected, paired-sample *t*-test analysis revealed higher regional than local variation. Comparisons with the limited data available from studies conducted in 1989 suggest general declines of HCHs and DDTs for most regions. γ-HCH dominated the HCH signal, reflecting widespread use of Lindane in India, although the isomeric composition in Kolkata suggests potential technical HCH use. High *o,p′-/p,p′*-DDT ratios in northern India indicate recent DDT usage. High HCB levels in the industrial areas of New Delhi and Kolkata indicate ongoing sources. Correlation between *trans*- and *cis*-chlordane implies ongoing usage. Endosulfan sulfate generally dominated the endosulfan signal, but high values of α/β-endosulfan at Chennai, Mumbai and Goa suggest ongoing usage. Backward trajectories were computed using the NOAA HYSPLIT model to trace the air mass history. Result shows local/regional sources of OCPs within India.

## 13. Past experience and present status of the use of ipm, natural enemies, (Predators and parasitoids) entomopathogenic microbes and fungi., insect sex pheromones botanicals, bio-pesticide, transgenic crops and indigenous knowledge in biological pest control

The use of chemical pesticides has been dominating the plant protection. This approach has led to the study of alternative pest management methods and increased pest outbreaks. However, with advances made in Integrated Pest Management (IPM), there is growing interest in nonpesticide methods too.

The Asia-Pacific region is faced with the need to increase agricultural productivity dramatically in order to feed a rapidly growing population. This will not be achieved by increasing the area under production because of constraints of land and water. In the past crop productivity increases have been achieved through the addition of chemical inputs. Dramatic advances in pest management were made using chemical pesticides.

However, increased awareness of the adverse environmental, ecological and health impacts of pesticide methods means that new nonpesticide approaches, like, use of natural enemies, various insect traps or biological control, are required to achieve pest management and to contribute to increased crop productivity. These include entomopathogenic fungi, nematodes, bacteria and viruses.

Panchagavyam, a plant growth regulator, in recent days has become popular indigenous technique among farmers. It is a combination of five products obtained from cow and is extensively used in traditional medicines too. The material includes urine, dung, curd, milk and ghee. It plays a significant role in providing resistance against disease and insect pests and in increasing overall yield too.

## 14. Government initiative against pest outbreak, resistance, resurgence *etc*.

- Weekly Forewarning by CIPMC's.
- Monitoring of pests and diseases of crops for forewarning
- Safe Use of Pesticides
- Best Practices of IPM
- Govt. Support Schemes
- Setting up of State Biocontrol Laboratories under the Scheme 'Strengthening and Modernisation of Pest Management Approach in India' - Grants in aid to NGO's
- Promotion of Integrated Pest Management
- Implementation of Insecticides Act, 1968
- Expansion of Plant Quarantine Facilities in India
- Training in Plant Protection

## 15. Suggestion and recommendations specially on possibilities on work sharing

A collaborative work can be thought of for sharing knowledge of pesticides registered, banned or restricted in Asian countries. We can think of to have common tolerance levels for pesticides for different agricultural commodities/products, so that trading within Asians does not get affected. The Integrated Pest Management research programs and their validation can be discussed for different countries in Asia. We can also think of different methodologies for pesticide residue analysis.

## 16. Local references

## 17. Appendix

a) Policies, ordinance, laws or regulations pertaining to pesticide use, registration *etc*.- Already discussed in the text.

b) Key persons engaged/involved in pesticide related activities (research and development) with their mailing addresses and contact numbers.

| Sl. No. | Name of person | Designation/ Area of specialization/ Contact details |
|---|---|---|
| 1. | Dr. Sumitra Arora (Organic Chemistry) | Sr. Scientist, National Centre for Integrated Pest Management (ICAR), Pusa Campus, New Delhi-12, India.<br>Phone: 91-11-25842640.<br>E-mail: sumitraarora@hotmail.com |
| 2. | Dr. T.S. Thind (Fungicides) | Head, Deppt of Plant Pathology, Punjab Agricultural University, Ludhiana, Punjab, India.<br>Phone: 91-161-2406114, 91-8968737900<br>E-mail: Thind_ts@yahoo.co.in |
| 3. | Dr. K. R. Kranthi (Entomology) | Director, Central Institute for Cotton Research, PB No. 2, P.O. Shankar Nagar, Nagpur-440010, M.S., India.<br>Phone: 91-7103-275549/36, 91-9423075781<br>fax: 91-7103-275529<br>E-mail:krkranthi@gmail.com, cicrngp@rediffmail.com, |

| Sl. No. | Name of person | Designation/ Area of specialization/ Contact details |
|---|---|---|
| 4. | Dr. K.K. Sharma (Pesticide residues) | Network Co-ordinator, All India Network Project on Pesticide residues, Division of Agricultural Chemicals, LBS Building, Indian Agricultural Research Institute, Pusa Campus, New Delhi-110012, India.<br>Phone: 91-1125846396 Web: www.ainppr.com |
| 5. | Dr. Madhuban Gopal | National Fellow, Division of Agricultural Chemicals, LBS Building, Indian Agricultural Research Institute, Pusa Campus, New Delhi-110012, India.<br>Phone: 91-1125848706, 91-9313709180<br>E-mail:madhubangopal@gmail.com |
| 6. | Dr. Prem Dureja | Emiratus Scientist, Division of Agricultural Chemicals, LBS Building, Indian Agricultural Research Institute, Pusa Campus, New Delhi-110012, India.<br>Phone:91-9810548174,<br>E-mail:pd_dureja@yahoo.com |
| 7. | Prof. Anjan Bhattacharyya | Head, Dept. of Agricultural Chemicals, Bidhan Chandra Krishi Viswavidyalaya, Mohanpur - 741 252, Nadia, West Bengal, India.<br>Phone: 91-9433007139(M),91-33-5827139(R)<br>Fax: 91-33-25828460<br>E-mail: anjan_84@rediffmail.com |
| 8. | Banerjee Kaushik | Sr. Scientist (Agricultural Chemistry), National Research Centre for Grapes, P.B. No. 3, Manjri Farm Post, Solapur Road, Pune - 412 307, Maharashtra, India.<br>Phone: 020-2691-4245 / 5573 / 5574 (O)<br>E-mail:kbgrape@yahoo.com |
| 9. | Dr. Sarita Bhalla | Dr. Sarita Bhalla, Deputy Director (Medical toxicological Division), Directorate of PPQ & S, Ministry of Agriculture, NH – IV, Faridabad – 121001, Haryana, India.<br>Phone:<br>E-mail:Sarita_bhalla99@yahoo.com |
| 10. | Chandershekhran | E-mail:schudaanu@yahoo.co.uk |

c) Photographs of acute health hazard, environmental effects, pest outbreak etc. due to indiscriminate use of chemical pesticides (both hard and soft copies). Composition of the photographs highlighting the subject is essential. Resolution of the pictures should be 300 DPI (dot per inches).

Not available

# Part - IV

## Pesticide Information of Nepal

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## 1. Introduction

Nepal is among the 27 least developed and 15 land-locked countries in the world. Agriculture sector plays prime role in the economic development of Nepal, which offers employment opportunity to 80% of the total population of 28.15 million and 32% national GDP. Agriculture is still the principal source of livelihood to most of the rural people, i.e. nearly 86% of the country's total population. In this context, the agriculture sector has been regarded as the leading sector for overall economic development of the country and government has accorded priority in different five year Periodical Plans and Agriculture Perspective Plan (APP), the main long term policy document of the government fulfilling the national goal of poverty alleviation, which has formulated strategies and fixed priorities in agriculture sector for 20 years (1995-2015). However, the characteristic features of this sector are predominance of subsistence production, a state almost stagnation over more than three decades, skewed distribution of land, and a relatively high population growth (2.24% per annum between 1991 and 2001). As a result, poverty is widespread, manifested in different forms-migration to perceive better off places, increasing feminization of agriculture and social strives. The slower rate of agriculture growth is largely responsible for the existing higher poverty incidence and severity in the rural areas.

There are also positive signs. Gradually the Nepalese agriculture is moving towards commercialization. During the green revolution period of 1960s and 70s, widespread use of agricultural inputs such as chemical fertilizers, pesticides and improved seeds were promoted in order to increase agricultural productivity. This aided in increasing yield of the farmers initially and they were visibly benefited. In these commercial areas, new problems, such as heavy reliance on expensive artificial inputs, increased production costs, decreased profits for small farmers, environmental degradation, widespread pesticides poisonings and environment pollution. Still, majorities in rural areas are safe from these problems. Therefore, to combat the danger of other farmers copying these unsafe practices leading to exacerbation of the problems, as an immediate measure, Integrated Pest Management through Farmer Field School (IPM-FFS) was initiated in Nepal in 1997 with the support of Food and Agriculture Organization (FAO). It has been an important approach of crop protection strategy, which encourages applying measures that causes least disruption of agro-ecosystem.

In Nepal, although agricultural development program of Government of Nepal (GON) adopted IPM as a crop protection strategy since 1997, a pilot program on IPM in rice (after outbreak of BPH of early rice in Chitwan in 1996) was initiated based on season long Farmers Field School (FFS) approach in May 1997 through Technical Cooperation Program (TCP) of Food and Agriculture Organization (FAO) of the United Nations under "Implementation of Integrated Pest Management in Rice" project (TCP/NEP/ 6712). This was followed by Nepal's participation in the FAO Regional Program on Community IPM in Asia between 1998 and 2002 funded by the Government of Norway.

Most pesticides are broad spectrum in nature and kill target as well as non-target organisms. There are few safer pesticides, but their use has been extremely limited due to lack of publicity and farmers' knowledge. In fact, all pesticides endanger the health of both producers and consumers. Government of Nepal is a signatory to the Stockholm Convention to minimize environmental pollution by persistent organic pollutant (POP) chemicals including pesticides. However, majority of the farmers are unaware of pesticide types, level of poisoning, safety precautions and potential hazards on health and environment. Many of the pesticides that are being used today belong to POPs, chlorinated hydrocarbons, organophosphates, carbamates, synthetic pyrethriods and zinc compounds, some of which have carcinogenic effects on human beings. The resultant effects on human health include cancer, birth defects, reproductive problems, tumors and damage of liver, kidney and neural organs. Hence, there is need to aware users/consumers on these possible adverse aspects of pesticides, and IPM-FFS is the proper way to communicate these messages to illiterate farmers in Nepal.

Pesticide traders, dealers and retailers have their vested interest in selling stockpiled old pesticides. Besides, many pesticide traders are not well trained, so it is unlikely that they will provide appropriate recommendation to the farmers. Field extension workers are not oriented towards the practical application of IPM approaches at the field level, and thus improper application and disposal of pesticides is increasingly appearing as a serious problem affecting human health and environment. Despite, wide spread use of pesticides, pest damage still cause significant loss of crops. There have neither been empirical evidences about the degree and magnitude of pesticide use nor sufficient action programs launched to raise awareness among the stakeholders, i.e. growers, consumers, pesticide traders, extension workers, policy makers. There is need to bring them all in one streamline to safeguard environment and at the same time increase healthy production.

Though Government of Nepal has developed policy for judicious use of pesticides and safety regulations, these have not yet been materialized at the farmers' level due to lack of studies on other alternatives of pest management, such as biological, botanicals, and safe chemicals including indigenous knowledge of farmers' practices. There are the basic components of IPM, and therefore, establishment and functioning of bio-agent rearing laboratory, studies of locally available botanical pesticides and residue study laboratories can exploit locally available natural resources of pest management and substantially help farmers, researchers, and policy makers to implement related acts and regulations effectively.

## 2. Brief history of chemical pesticide use and trends in pesticides use (Crops and location wise, statistics on pesticides use)

### 2.1 Pesticide use

Most pesticides used in Nepal are imported from India, some from China and Japan and other countries on the basis of a registration. Distribution of pesticides in Nepal is conducted only in the form of finished products. Nepal is included under the category of LDC, which has limited use of pesticide per capita and/or ha. So, in comparison to other countries in the Asia Pacific Region, the use of chemical pesticides in Nepal is one of the lowest (142 gm a.i./ha) (Thapa, 1997). Pesticide use, however, is much more intensive in areas that have greater access to markets. The use is higher in areas with intensive commercial farming of vegetables, fruits, tea, rice and cotton. Under the present scenario, as reported by many, judicious and prudent use of pesticides by the Nepalese farmers is largely disregarded. All types of pesticides are not only repeatedly but also carelessly used. Farmers do not always know the active ingredient. Sometimes out dated pesticides are sold to farmers. Farmers use a mixture of chemicals together therefore when incidents occur it is difficult to specify the responsible chemical.

Pesticides are not as extensively used in Nepal as in other Asian countries in terms of the ratio of active ingredients (a.i.) used per hectare of crop land. However, the application of pesticides in commercial vegetables is 1,450 g/ha, which is exceptionally high in Nepalese context (Sharma, 1994). Thus, hazards caused by pesticides application in Nepal are not only due to overuse of pesticides but also more due to misuse of pesticides. The use of pesticides in Nepal is increasing without any study about its proper use and effects on environment, ecosystem and health of the living beings.

In one of the district in Siraha, a study was done and reported that brinjal was the crop to receive the highest frequency of pesticide followed by cauliflower, bitter gourd and potato. The most common pesticide used was methyl parathion (Who-IB) where 67 per cent farmers sprayed the crop more than 8 times, and 25 per cent farmers did so 4-6 times in a cropping cycle. There are examples of similar types of communications with farmers (Kabhre district, one of the hill district of central region), where a crop like tomato is sprayed 6-7 times with Endosulfan for *Helicoverpa armigera* and

5-6 times with Dithane M-45 for blight in a single cropping season. Similarly, apple and citrus need calendar-wise spraying of insecticides and fungicides to be protected from insects and diseases. Eggplant is sprayed frequently by Endosulfan against shoot and fruit borer (*Leucinodes orbonalis*).

Six years ago, a study showed that a farmer had purchased Phorate (WHO-IB) from an Agrovet shop to use in flowering cucurbits. Phorate is heavily used by farmers in rice fields before and after transplanting to protect against insect attack. There are many examples of pesticide use and misuse. The most common pesticides used in Nepal are organophosphates, carbamates, synthetic pyrethroids, organochlorines, and rodenticides besides herbicides and fungicides. About 98 per cent of the pesticides consumed in Nepal are imported from India and Japan under different formulations like emulsifiable concentrate (EC), wettable powder (WP), granule (G) and dust (D). All kinds of pesticides belonging to WHO Class IA by hazard are restricted for use while pesticides belonging to WHO Class IB by hazard are sold under official recommendations of respective pesticide inspectors. Pesticides registered for public health purpose are not to be used or applied in agriculture.

## 2.2 Pesticide consumption and trend

There are approximately 49 importers. Some 7028 resellers received training on safe use of pesticides and storage management of which 6660 were licensed. About 650 types of pesticides by trade name 107 common name have been registered for use under Pesticides Act and Rules( Table 1). Highly persistent types (POP pesticides), Phosphamidon and Organo-mercury fungicides are banned in Nepal (Pesticide Registration and Management Section, 2010, Pesticide Statistic book ).

According to the latest estimate, the annual import of pesticides is about 211 tons (a.i.) with 29.19 percent insecticides, 61.38 percent fungicide, 7.43 percent Herbicide, 2 percent others (Table no 3,4, 5). The gross sales are valued at $3.05 million per year (PR and MD, 2010 – Pesticide Statistic book).

**Table 1. Registered Pesticides**

| Sl. No. | Type of Pesticides | Trade Name | Common Name |
|---|---|---|---|
| 1 | Insecticides | 391 | 49 |
| 2 | Fungicides | 170 | 35 |
| 3 | Herbicides | 63 | 14 |
| 4 | Rodenticides | 7 | 2 |
| 5 | Bio-pesticides | 15 | 6 |
| 6 | Bactericides | 4 | 1 |
| | **Total** | **650** | **107** |

*Source: Pesticide Statistic book, 2010, PR and MD*

As there is an open and porous border with India, there is a considerable, but of unknown quantity, trade of pesticides with the farmers close to the border. Illicit/illegal import, smuggled pesticides and trans-boundary issues are of serious concern to Nepal, which need to be addressed in multilateral approach with neighboring industrialized countries in prevention of potential infiltration of banned/unregistered pesticides

In Nepal, availability of pesticides has not been recorded. Most of the accidents related to the pesticides are due to negligence and lack of knowledge about the pesticide hazards. Pesticides use in Nepal is heavily concentrated in a few locations. Pesticide use is much more intensive in areas that have greater access to markets such as the Terai and Kathmandu valley (Pradhan and Gupta, 1992).

In terms of crops, pesticide use is most intensive in high value crops such as vegetables, mustard and cotton.

Farmers use chemical insecticides as it is easy to use, easily available and fast in action. No matter, it kills harmful or useful insects. Chitwan is one of the Terai districts where there is easy availability of pesticides and there also exists pocket area for commercial vegetable cultivation. Farmers use excessive pesticides without considering the health of consumers. They sell their produce without any consideration of the waiting periods. Such over burning problems should be viewed on their locality.

## 2.3 Registered pesticides

Out of the 107 different active ingredients, based on WHO risk classification system, on average, 1.87 % are highly hazardous (WHO class Ib), 36.44 % moderately hazardous (WHO class II), 17.75% slightly hazardous (WHO class III), 42.06% are low risk (class U/NH) and 1.87% not calculated (NC) ( Table 2) ( (PR and MD, 2010 - Pesticide Statistic book). Recently, the Government of Nepal has also banned the registration of Methyl parathion and Monocrotophos.

**Table 2. Registered Pesticides by the WHO risk Classification**

| Sl. No. | Hazard level | Group | No. of Pesticides | Remark |
|---|---|---|---|---|
| 1 | Extremely Hazardous | IA | - | No. of Technical Product |
| 2 | Highly Hazardous | Ib | 2 | |
| 3 | Moderately Hazardous | II | 39 | |
| 4 | Slightly Hazardous | III | 19 | |
| 5 | Unlikely to present acute hazard in normal use | NH | 45 | |
| 6 | Not calculated | NC | 2 | |
| | **Tatal** | | **107** | |

*NH=Non hazardous NC=Not calculated*

*Source:* PR and MD, 2010 - Pesticide Statistic book

## 2.4 Pesticide use knowledge and practices in gender

It is important to understand gender difference on pesticide use knowledge, attitude and practices for identifying pesticide risks by gender and to recommend more gender-sensitive programs. However, very few studies have been conducted so far in Nepal. A study was done, which interviewed a total of 325 males and 109 females during 2005 to assess gender differences on pesticide use knowledge, attitude and practices. More than 50% females had never been to school and only <8% individuals were found trained in Integrated Pest Management (IPM) (Atreya, 2007). Almost all males and females did not smoke, drink and eat during pesticides application and also believed that pesticides were harmful to human health, livestock, plant diversity and their environment. Almost all respondents were aware of negative impacts of pesticide use on human health and environment irrespective of gender; however, females were at higher risk due to lower level of pesticide use safety and awareness. It is strongly recommended to initiate gender-sensitive educational and awareness activities, especially on pesticide use practices and safety precautions.

## 2.5 Import of pesticides

**Table 3. Pesticides import in the year 2009/10**

| Sl. No. | Item | Quantity of a.i. (kg) | Value in Rs,000 |
|---|---|---|---|
| 1 | Organochlorines | 11019.75 | 12880.50 |
| 2 | Organophosphates | 23280.31 | 22383.70 |
| 3 | Synthetic Pyrethroids | 5255.65 | 19485.30 |
| 4 | Carbamates | 1344.15 | 3319.00 |
| 5 | Mixed | 7284.30 | 8690.97 |
| 6 | Others | 13431.61 | 17851.48 |
| | **Total Insecticide** | **61615.77** | **84610.95** |
| 7 | Acaricides | 38.00 | 139 |
| 8 | Bactericides | 25 | 168 |
| 9 | Rodenticides | 2468.00 | 1797.00 |
| 10 | Public Health | 1600.00 | 12800.00 |
| 11 | Fungicides | 129567.16 | 92274.10 |
| 12 | Bio-pesticides | 82.08 | 2126.00 |
| 13 | Herbicides | 15683.10 | 13762.00 |
| 14 | Nematicides | 0.23 | 11.00 |
| 15 | Rodenticides | 37297.75 | 22302.17 |
| | **Sub Total** | **149463.56** | **123077.10** |
| | **Total Pesticide** | **211079.34** | **207688.05** |

**Table 4. Pesticide Formulations Imported in Nepal 2009/10**

| Kinds of pesticide | Formulations | | Total Active Ingredients (kg) |
|---|---|---|---|
| | Liquid(Ltr) | Solid(kg) | |
| **A. Agricultural Pesticides** | | | |
| 1.Insecticides | | | |
| 1.1 Organochlorine | 1350 | 0 | 473 |
| 1.2 Organo-phosphates | 5257 | 0 | 2370 |
| 1.3 Carbamates | 0 | 0 | 0 |
| 1.4 Synthetic Pyrethroids | 5250 | 12000 | 910.5 |
| 1.5 Mix | 2800 | 0 | 1464 |
| 1.6 Others | 0 | 34000 | 1360 |
| **Sub total** | **14657** | **46000** | **6577.5** |
| 1. Acaricides | 0 | 0 | 0 |
| 2. Bactericides | 0 | 0 | 0 |
| 3. Others | 0 | 0 | 0 |
| 4. Public Health | 0 | 0 | 0 |
| 6. Fungicides | 300 | 47475 | 33523.75 |
| 7. Bio-pesticides | 0 | 0 | 0 |
| 8. Herbicides | 12232 | 0 | 4442 |
| 9. Rodenticides | 0 | 0 | 0 |
| **Sub total** | **12532** | **47475** | **37965.75** |
| **Grand total** | **27189** | **93475** | **44543.25** |

**Table 5. Pesticides Consumption in Nepal 2007/08**

| Kinds of pesticide | Quantity of Active Ingredient in Kg |
|---|---|
| **A. AGRICULTURAL PESTICIDES** | |
| 1. INSECTICIDES | |
| 1.1 Organochlorine (Endosulfan) | 11019.75 |
| 1.2 Organo-phosphates (Acephate, Chlorpyriphos, Quinalphos, Dichlorovos, Phorate etc) | 23280.31 |
| 1.3 Carbamates (Carbofuran, Carbosulfan) | 1344.15 |
| 1.4 Synthetic Pyrethroids (Alphamethrin, Cypermethrin, Fenvalerate, Deltamethrin,etc) | 5255.65 |
| 1.6 Mixed insecticides (Chlorpyriphos+Cypermethrin, Alphamethrin + Chlorpyriphos, Quinalphos+cypermethrin etc) | 7284.30 |
| 1.7 Others (Aluminiumphosphide,Cartaphydrochloride, imidacloprid, Porpargite,Ethofenprox, Fenpropathrin, Fipronil etc) | 13431.61 |
| Total insecticides | **61615.77** |
| 1. Acaricides | 38.00 |
| 2. Bactericides | 25 |
| 3. Nematicides | 0.23 |
| 4. Public Health | 1600.00 |
| 5. Fungicides | 129567.16 |
| 6. Bio-pesticides | 82.08 |
| 7. Herbicides | 15683.10 |
| 8. Rodenticides | 2468.00 |
| **TOTAL PESTICIDE** | **211079.34** |

## 3. Brief information about the country in relation to major crops, crop losses due to insect pest and disease attack

### 3.1 Agriculture in Nepal

The total land area available for cultivation is 2.97 million hectares out of which, the cultivated land area is 0.99 million hectares. Rice and wheat are the major cereal crops in the Terai region, while maize is the main crop in the hills and the mountain areas. After maize, finger millet is grown extensively in the hills and mountain in the marginal lands having low productivity. Barley is another crop grown in these areas. In addition to the cereal crops, legumes are also grown in a considerable area. Sugarcane, jute and tobacco are the major industrial crops. Besides these, oilseeds, potato, vegetables and fruits are also grown as cash crops. Cabbages, cauliflower, beans, okra and tomato are major vegetables, while citrus (mandarin, sweet orange and lime), mango, banana and apple are the main fruits. The major crops and their major pests are given in annex II.

### 3.2 Crop losses

Food losses during various post-harvest operations are believed to be in the range of 20-30 percent in perishable commodities and 17-20 percent in durables. Thus, to strengthen food security whatever is produced must be saved and utilized through proper handling, packaging, storage, processing and marketing.

Broadly, both biotic and abiotic factors affect the post harvest losses. Both the factors are interrelated and influence each other in many ways. Biotic component include myriads of living organism and abiotic factor includes the physical environment. Plants / seeds / birds / rodents / insects / diseases are all biotic whereas, water, temperature, light, soil, atmosphere fall under abiotic. It is very difficult to isolate the components and the effects of the individual biotic or physical factor.

On-farm post harvest loss for major cereals in Nepal has been reported to be 15-20% (APROSC, 1982). The insect pest and rodents are the major causal agents. Rodents consume about 10% of their body weight but contaminate more than double of that amount with their excreta, urine, body, hairs, dirt etc. Beside crop losses, rats are known to transmit deadly diseases to men and livestock.

In general, 15 percent of crops are lost in pre-harvest and about 20 percent in post-harvest periods in all major crops due to various pests and diseases. The major insect pests, diseases and weeds of Nepal are given in Annex II.

Very little work has been done on crop wise post harvest loss in Nepal. The study conducted for some crop losses are given below:

| **Crop** | | **Loss** |
|---|---|---|
| Rice | : | 25-30 % |
| Maize | : | 20-25,% |
| Wheat | : | 5-10% |
| Vegetables | : | All perishables 25-30% |

**Post harvest loss**

- Rice 18%
- wheat 17-20%
- maize 17-19%
- Vegetables 28-35 percent.

### 3.3 Pesticides use in storage

Avoid, to the best extent possible, the use of chemical pesticides in farm level storage. If at all it is needed as a last option, only use safe chemicals or botanical pesticides. In many areas, local plants (e.g. neem) have a repellent effect upon insects. This can be mixed with grains in storage. Among the fumigants, only posphine (PH3, hydrogen phosphide) is marketed in Nepal, as Celphos, Phostoxin, Phosfume or Quickphos tablets. When the tablet is exposed to the air, it interacts with moisture and temperature, and releases phosphine gas, which kills all pests, but does not affect germination. However, great precaution is taken while using fumigant. It is used only if the structure is airtight.

## 4. Regulatory framework (policies, regulations and laws) and enforcement, description about pesticide registration process, field monitoring agencies and process

### 4.1 Regulatory framework

There is a regulatory infrastructure established for the management of pesticides in Nepal. It covers all handling and use aspects of pesticides. The importers wishing to market and sell pesticides must submit an application dealing with the use of pesticides, toxicity and the correct use of pesticides in agriculture and health sector from the health point of view. No pesticide may be imported into the country without the appropriate certificate of importation issued by Registration Authority.

Large numbers of persistent chemical pesticides have been banned for agriculture and public health from 9th April, 2001, and also hazardous pesticides have been phased out from the use since the same time. Government of Nepal also already banned PIC listed two pesticides: Methyl parathion and Monocrotophos.

The pesticides to be imported, distributed, traded and used should be more eco-friendly and less hazardous to health and environment. More emphasis has been given to use organic pesticides as an alternative of chemical pesticides to control crop pests. Development and use of some microbial and botanical pesticides, which are eco-friendly have opened a new field of bio-pesticides. The best known bio-pesticide is the *Bacillus thuringenensis* (Bt). Eco-friendly neem formulations are also being used currently. IPM has been widely accepted as the alternative to pesticide application. Phasing out of non-ecofriendly pesticides and rigorous approval process of the newer, more safer and specific molecules are significant action of the Government. Government has already conducted or is regularly launching training programs to educate the concerned personnel.

In Nepal, as in most of the other developing countries in the region, the capabilities, expertise and resources to fully implement the regulation are limited. Further, there is a need to strengthen the scientific and technical base for health and environmental risk assessment.

Government policies still favor pesticides and high subsidies exist, while newer IPM products are taxed at high rates. The government should foster IPM by removing subsidies on the least desirable pesticides while removing taxes from IPM products. These economic incentives would go a long way in changing the practices of farmers. This recommendation is in line with recent changes in government policy where IPM methods are to be preferred over pesticide usage.

## 4.2 Pesticide management and registration process

To promote environmentally sound management of chemicals, regulatory infrastructure has been established in Nepal. The Pesticide Act, 1991 and the Pesticide Rule,1993 (Annex 1) cover measures to regulate import, manufacture, sale, storage, transport, distribution and use of pesticides. It is mandatory that any pesticide before distribution and importation should be first registered in accordance with the registration procedure adopted by the Pesticide Board. Pesticides other than notified ones are not to be imported, exported, produced, used or distributed. The regulations also prohibit the sale of any pesticide, which is imported for scientific or research purposes. Government of Nepal shall, on the recommendation of the Board, publish the names of the registered pesticides in the Nepal Gazette. The licensing control of hazardous chemicals prevents unauthorized persons from handling such chemicals. Reseller License and Importer License issued are valid for three years and 5 years respectively.

Presently, owing to the lack of laboratory facility, Nepal has to rely on the foreign analysis results of all pesticides. The pesticides are registered in the name of trade product. Therefore, in order to ensure quality of pesticides to the user groups, the Pesticide Registration Office (PRO) mandatorily demands the following documents for registration of any pesticide product.

- Duly filled-in application form for Registration of Pesticide along with one thousand Rupees
- Letter of Authorization
- Summary of intended use pattern
- A statement of the need to use in Nepal
- Evidence that the product is registered overseas (copies of registration certificates, affidavits or approved labels)
- Three copies of the original labels, which will be used when the product is imported and sold.

- ❖ Efficacy, Toxicology and Eco-toxicology data
- ❖ Residual data
- ❖ Labels and Leaflets in Nepali Language

The system for regulation, control and management was established by a series of import certificates (for 5 years with provisional or conditional) and reseller licenses (for 3 years) issued by the registration agency. Registration is required for each formulation and brand of pesticides.

The Act also regulates the Pesticide Inspectors (PIs) who serve as the government functionaries in 75 districts to monitor pesticide sales, storage, quality, use and disposal. The duties of PIs are to inspect the premises of each reseller, wholesaler, importers and formulators. Also, part of their duties is to advise the farmers on safe use practices of pesticides.

**Table 6. Government policies and programs on effective pesticide Management**

| Sl. No. | Activities | Government Policies |
|---|---|---|
| 1 | Research and development of New Pesticides | • Promotion of IPM Program<br>• Promotion of bio- botanical pesticides,<br>• Formulation of Pesticides<br>• Promotion of safe and environment Friendly pesticides |
| 2 | Institutional support for formulation analysis, tests and quality control. | • Establishment of central pesticides laboratory |
| 3 | Adequacy of legislative measures | • Strengthening legal framework<br>• Establishment of full fledged Pesticide Registration Office. |
| 4 | Incentive to domestic production of Pesticides | • Encouragement to private sector for formulation of user and environment friendly pesticides |
| 5 | Implementing measures for appropriate use of pesticides | • Training on the pesticides to Junior Technicians, farmers, retailers<br>• Circulation of documents stating appropriate use of pesticides.<br>• Awareness creation about the user & environment safe formulation. |
| 6 | Restrictions on Pesticides | • IA, IB class pesticides to be removed from the recommendation list and to be deregistered.<br>• Banning of PIC list pesticides (Methyl Parathion and Monocrotophos) in the country. |
| 7 | Promoting residual analyses for chemicals & crops | Nepal Government has enforced Consumer's Welfare Protection Act. As per this Act, Central Food Research Laboratory is the sole authority for the test and to implement the act. |
| 8 | Quality assurance and quality Control of the Pesticides | Nepal Government has given top priority in the Tenth five year plan to establish a well sophisticated quality control laboratory in the country. |

## 5. List of brief description of authorities, agencies and research institutes related to pesticides along with their short activity in nepal

| Area of Responsibility | Institutions |
|---|---|
| Pesticide legislation/regulation | • Ministry of Agriculture and Co-operatives, Pesticide Committee, Singh Darbar, Kathmandu, Nepal |
| Pesticide registration/authorization | • Pesticide Registration and Management Division (PRMD), Plant Protection Directorate of Department of Agriculture. |
| Pesticide facility licensing | • Pesticide Registration and Management Division, Hariharbhawan, Pulchowk, Lalitpur, Nepal. |
| Pesticide enforcement/inspection | • Pesticide Registration and Management Division, Harihar Bhawan, Pulchowk, Lalitpur, Nepal.<br>• District Agriculture Development Office (75 in numbers), and<br>• Regional Plant Protection Laboratory (5 in numbers). |
| Pesticide health and environmental monitoring | • Ministry of Population and Health<br>• Ministry of Environment, Science and Technology, Kathmandu, Nepal and<br>• Pesticide Registration and Management Division, Harihar Bhawan, Pulchowk, Lalitpur,Nepal |
| Pesticide research/testing | • Nepal Agricultural Research Council(NARC) Khumaltar, Lalitpur, Nepal,<br>• Regional Plant Protection Laboratory, and<br>• Pesticide Registration and Management Division, Harihar Bhawan, Pulchowk, Lalitpur, Nepal. |
| Pesticide training/extension | • Pesticide Registration and Management Division, Harihar Bhawan, Pulchowk, Lalitpur, Nepal,<br>• District Agriculture Development Office (75 in numbers), and<br>• Regional Plant Protection Laboratory |
| Civil society organizations (NGOs, etc.) with interest in pesticides | • Society of Environment Journalist-Nepal and<br>• Nepal Forum of Environmental Journalist, Kathmandu, Nepal. |

## 6. Chemicals or alphabetized chemical list of different registered chemical pesticides (Insecticides, miticides, rodenticides, fungicides, herbicides, nematocides, bio-pesticides) along with their trade names and company name

### 6.1 List of Registered Pesticides

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 1 | VERTIMIC - 1.9 EC | Abamectin | 1.9% | EC | II | Only use in Ornamental plants | |
| 2 | ACE -75 SP | Acephate | 75% | SP | III | | |
| 3 | ACESUL | Acephate | 75% | SP | III | | |
| 4 | ALL TOP | Acephate | 75% | SP | III | | |
| 5 | ASATAF 75 SP | Acephate | 75% | SP | III | | |
| 6 | DHANRAJ -75 | Acephate | 75% | SP | III | | |
| 7 | FATAL | Acephate | 75% | SP | III | | |
| 8 | JUNG | Acephate | 75% | SP | III | | |
| 9 | KI-PHATE | Acephate | 75% | SP | III | | |
| 10 | LANCER | Acephate | 75% | SP | III | | |
| 11 | LOAD | Acephate | 75% | SP | III | | |
| 12 | LUCID - 75 | Acephate | 75% | SP | III | | |
| 13 | MISSILE | Acephate | 75% | SP | III | | |
| 14 | MOLPHATE 75% | Acephate | 75% | SP | III | | |
| 15 | RUSTAF | Acephate | 75% | SP | III | | |
| 16 | SURYA GOLD | Acephate 5% + Imidacloprid 11% | 16% | SP | II | | |
| 17 | LANCER | Acephate 50% + Imidacloprid 1.8% | 51.8% | SP | III | | |
| 18 | BISMARK | Acetamiprid | 20% | SP | II | | |
| 19 | BISMARK | Acetamiprid | 75% | WP | II | | |
| 20 | EKKA | Acetamiprid | 20% | SP | II | | |
| 21 | MANIK | Acetamiprid | 20% | SP | II | | |
| 22 | MOLPRID | Acetamiprid | 20% | SP | II | | |
| 23 | POUND | Acetamiprid | 20% | SP | II | | |
| 24 | PRIME | Acetamiprid | 20% | SP | II | | |
| 25 | SURYAMIPRID | Acetamiprid | 20% | SP | II | | |
| 26 | ALPHASHAKTI WP | Alphacypermethrin | 5% | WP | II | Public health use | |
| 27 | FENDONA - 5 % WP | Alphacypermethrin | 5% | WP | II | Public health use | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 28 | FIONA | Alphacypermethrin | 5% | WP | II | Public health use | |
| 29 | GURU | Alphacypermethrin | 10% | EC | II | | |
| 30 | PUNCH | Alphacypermethrin | 5% | WP | II | Public health use | |
| 31 | RUBI - 5 WP | Alphacypermethrin | 5% | WP | II | Public health use | |
| 32 | CHLOTHIN | Alphacypermethrin 1%+Chlorpyriphos 16% | 17% | EC | II | | |
| 33 | ALFA PLUS | Alphamethrin | 10% | EC | II | | |
| 34 | ALL FA | Alphamethrin | 10% | EC | II | | |
| 35 | ALPHADHAN - 10 | Alphamethrin | 10% | EC | II | | |
| 36 | AXIS | Alphamethrin | 10% | EC | II | | |
| 37 | CLICK | Alphamethrin | 10% | EC | II | | |
| 38 | COLLECTOR | Alphamethrin | 10% | EC | II | | |
| 39 | FARSA | Alphamethrin | 10% | EC | II | | |
| 40 | FORWARD 10 EC | Alphamethrin | 10% | EC | II | | |
| 41 | GEM | Alphamethrin | 10% | EC | II | | |
| 42 | KI-ALFA | Alphamethrin | 10% | EC | II | | |
| 43 | MIG -10 | Alphamethrin | 10% | EC | II | | |
| 44 | NAGMETHRIN | Alphamethrin | 10% | EC | II | | |
| 45 | NAYAK | Alphamethrin | 10% | EC | II | | |
| 46 | SURYA ALPHA PLUS | Alphamethrin | 10% | EC | II | | |
| 47 | THRIL | Alphamethrin | 10% | EC | II | | |
| 48 | VIPER -10 | Alphamethrin | 10% | EC | II | | |
| 49 | ALLPHOS | Aluminium Phosphide | 56% | TAB | NC | | |
| 50 | ALPHOS - 56 TAB | Aluminium Phosphide | 56% | TAB | NC | | |
| 51 | CELPHOS | Aluminium Phosphide | 56% | TAB | NC | | |
| 52 | EFFORTS | Aluminium Phosphide | 56% | TAB | NC | | |
| 53 | KI-PHOS | Aluminium Phosphide | 56% | TAB | NC | | |
| 54 | QUICKPHOS | Aluminium Phosphide | 56% | TAB | NC | | |
| 55 | SANPHOS | Aluminium Phosphide | 56% | TAB | NC | | |
| 56 | DEVIPHOS | Aluminiumphosphide | 56% | TAB | NC | | |
| 57 | GRAINPHOS | Aluminium phosphide | 56% | TAB | NC | | |
| 58 | SURYA FORCE | Aluminium phosphide | 56% | TAB | NC | | |
| 59 | RESPONSAR | Beta-Cyfluthrin | 2.45% | SC | II | Public health use | |
| 60 | TEALER | Beta-Cyfluthrin | 5% | EC | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 61 | TEMBO-25 SC | Beta-Cyfluthrin | 25% | SC | II | Household use | |
| 62 | BIFLEX TC | Bifenthrin | 2.5% | EC | II | Household use | |
| 63 | BISTAR -10 WP | Bifenthrin | 10% | WP | II | Public health use | |
| 64 | TALSTAR - 10 EC | Bifenthrin | 10% | EC | II | Public health use | |
| 65 | BUPROLOD | Buprofezin | 25% | SC | III | | |
| 66 | DEVIFEZIN | Buprofezin | 25% | SC | III | | |
| 67 | SEVIN | Carbaryl | 50% | WP | II | | |
| 68 | ANUFURAN | Carbofuran | 3% | GR | II | | |
| 69 | DIAFURAN 3 G | Carbofuran | 3% | GR | II | | |
| 70 | DON | Carbofuran | 3% | CG | II | | |
| 71 | FURADAN - 3 G | Carbofuran | 3% | GR | II | | |
| 72 | FURARUS | Carbofuran | 3% | GR | II | | |
| 73 | KI-FURAN | Carbofuran | 3% | GR | II | | |
| 74 | PEFURAN | Carbofuran | 3% | GR | II | | |
| 75 | SUMO | Carbofuran | 3% | GR | II | | |
| 76 | MARSHAL 25 EC | Carbosulfan | 25% | EC | II | | |
| 77 | ALL TAP | Cartap Hydrochloride | 4% | GR | II | | |
| 78 | ANUDAN - 4G | Cartap Hydrochloride | 4% | GR | II | | |
| 79 | BEACON | Cartap Hydrochloride | 4% | GR | II | | |
| 80 | BILDAN - 4 G | Cartap Hydrochloride | 4% | GR | II | | |
| 81 | CALDAN - 4 G | Cartap Hydrochloride | 4% | GR | II | | |
| 82 | CALDAN - 50 SP | Cartap Hydrochloride | 50% | SP | II | | |
| 83 | CARAVAN | Cartap Hydrochloride | 50% | SP | II | | |
| 84 | INDAN-4G | Cartap Hydrochloride | 4% | GR | II | | |
| 85 | KAARDO | Cartap Hydrochloride | 4% | GR | II | | |
| 86 | KI-TAP | Cartap Hydrochloride | 4% | GR | II | | |
| 87 | KI-TAP | Cartap Hydrochloride | 50% | SP | II | | |
| 88 | KRANTI 4G | Cartap Hydrochloride | 4% | GR | II | | |
| 89 | KRITAP - 4G | Cartap Hydrochloride | 4% | GR | II | | |
| 90 | MODAN | Cartap Hydrochloride | 4% | GR | II | | |
| 91 | PARRYRATNA -4 G | Cartap Hydrochloride | 4% | GR | II | | |
| 92 | SCIMITAR | Cartap Hydrochloride | 4% | GR | II | | |
| 93 | SURYA ROYAL GOLD | Cartap Hydrochloride | 4% | GR | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 94 | SURYADAN | Cartap Hydrochloride | 50% | SP | II | | |
| 95 | ALLBAN | Chlorpyriphos | 20% | EC | II | | |
| 96 | CLASSIC | Chlorpyriphos | 20% | EC | II | | |
| 97 | CRYPHOS | Chlorpyriphos | 20% | EC | II | | |
| 98 | DEVIBAN - 1.5 % DP | Chlorpyriphos | 1.5% | DP | III | | |
| 99 | DEVIBAN - 20 | Chlorpyriphos | 20% | EC | II | | |
| 100 | DHANVAN | Chlorpyriphos | 20% | EC | II | | |
| 101 | DURMET | Chlorpyriphos | 20% | EC | II | | |
| 102 | FINEBAN | Chlorpyriphos | 20% | EC | II | | |
| 103 | KI-CHLORO` | Chlorpyriphos | 4% | GR | II | | |
| 104 | KI-CHLORO` | Chlorpyriphos | 20% | EC | II | | |
| 105 | KRISHAN | Chlorpyriphos | 20% | EC | II | | |
| 106 | LETHAL | Chlorpyriphos | 20% | EC | II | | |
| 107 | MOLBAN | Chlorpyriphos | 1.5% | DP | III | | |
| 108 | MOLBAN | Chlorpyriphos | 20% | EC | II | | |
| 109 | NAGPYRIPHOS | Chlorpyriphos | 20% | EC | II | | |
| 110 | RADAR | Chlorpyriphos | 20% | EC | II | | |
| 111 | RUSBAN | Chlorpyriphos | 20% | EC | II | | |
| 112 | SICOBAN | Chlorpyriphos | 20% | EC | II | | |
| 113 | SULBAN | Chlorpyriphos | 20% | EC | II | | |
| 114 | SURYAPHOS | Chlorpyriphos | 20% | EC | II | | |
| 115 | TERMISEAL | Chlorpyriphos | 50% | EC | II | | |
| 116 | TRICEL | Chlorpyriphos | 20% | EC | II | | |
| 117 | VARDAN | Chlorpyriphos | 20% | EC | II | | |
| 118 | KI-TOP | Chlorpyriphos 50% + Cypermethrin 5% | 55% | EC | II | | |
| 119 | LETHAL SUPER | Chlorpyriphos 50% + Cypermethrin 5% | 55% | EC | II | | |
| 120 | TERROR RL | Chlorpyriphos 50% + Cypermethrin 5% | 55% | EC | II | | |
| 121 | NAG PLUS | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 122 | NUROCOMBI | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 123 | ACTION - 505 | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 124 | ALL FIGHTER | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 125 | ANTH | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 126 | BACYP -505 | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 127 | BILBO | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 128 | BILDO | Chlorpyriphos 50%+Cypermethrin 5% | 55% | EC | II | | |
| 129 | DELFIN | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 130 | FIGHTER - 505 | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 131 | JUDWAA | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 132 | KORANDA | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 133 | LANCET 505 | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 134 | MISSILE - 505 | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 135 | NURELLE D-505 | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 136 | SPINE | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 137 | STAMPEDE | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 138 | SURYA NURELLE | Chlorpyriphos 50%+ Cypermethrin 5% | 55% | EC | II | | |
| 139 | CARBINE | Chlorpyriphos 50%+ Cypermthrin 5% | 55% | EC | II | | |
| 140 | JWALA | Chlorpyriphos 50%+ Cypermthrin 5% | 55% | EC | II | | |
| 141 | TRIES | Chlorpyriphos 8% + Triazophos 17% | 25% | EC | II | | |
| 142 | SOLFAC | Cyfluthrin | 5% | EW | II | Public health use | |
| 143 | SOLFAC - 10 WP | Cyfluthrin | 10% | WP | II | Public health use | |
| 144 | ACMETHRIN -10 | Cypermethrin | 10% | EC | III | | |
| 145 | ALL KILLER | Cypermethrin | 10% | EC | III | | |
| 146 | ALL SUPER | Cypermethrin | 25% | EC | II | | |
| 147 | ARJUN | Cypermethrin | 10% | EC | III | | |
| 148 | BARRIER CX | Cypermethrin | 1% | CHALK | III | | |
| 149 | CHALLENGE | Cypermethrin | 10% | EC | III | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 150 | CHALLENGER | Cypermethrin | 10% | EC | III | | |
| 151 | CHALLENGER | Cypermethrin | 25% | EC | II | | |
| 152 | CRICYP | Cypermethrin | 10% | EC | III | | |
| 153 | CRYPHOS | Cypermethrin | 25% | EC | II | | |
| 154 | CYMBUS | Cypermethrin | 25% | EC | II | | |
| 155 | CYPER PLUS | Cypermethrin | 10% | EC | III | | |
| 156 | CYPERCID | Cypermethrin | 10% | EC | III | | |
| 157 | CYPERCIDE | Cypermethrin | 25% | EC | II | | |
| 158 | CYPERHIT | Cypermethrin | 10% | EC | III | | |
| 159 | CYPERHIT | Cypermethrin | 25% | EC | II | | |
| 160 | CYPERIN | Cypermethrin | 10% | EC | III | | |
| 161 | CYRUX | Cypermethrin | 25% | EC | II | | |
| 162 | DEVI CYPRIN | Cypermethrin | 25% | EC | II | | |
| 163 | DEVICYPER -10 | Cypermethrin | 10% | EC | III | | |
| 164 | FIGHTER | Cypermethrin | 10% | EC | II | | |
| 165 | HIPOWER | Cypermethrin | 10% | EC | III | | |
| 166 | KI-CYPER | Cypermethrin | 10% | EC | III | | |
| 167 | KI-CYPER | Cypermethrin | 25% | EC | II | | |
| 168 | LACER | Cypermethrin | 10% | EC | III | | |
| 169 | LAXMANREKHA | Cypermethrin | 1% | CHALK | III | Household use | |
| 170 | MOLTHRIN -25 | Cypermethrin | 25% | EC | II | | |
| 171 | NAGCYPER | Cypermethrin | 10% | EC | III | | |
| 172 | NAGCYPER | Cypermethrin | 25% | EC | II | | |
| 173 | PUNIX-10 | Cypermethrin | 10% | EC | III | | |
| 174 | PUNIX-25 | Cypermethrin | 25% | EC | II | | |
| 175 | RIPCORD | Cypermethrin | 10% | EC | III | | |
| 176 | RUDRA | Cypermethrin | 25% | EC | II | | |
| 177 | SARDAR | Cypermethrin | 10% | EC | III | | |
| 178 | SHAKTI - 10 | Cypermethrin | 10% | EC | III | | |
| 179 | SICORIN - 10 | Cypermethrin | 10% | EC | III | | |
| 180 | SICORIN - 25 | Cypermethrin | 25% | EC | II | | |
| 181 | STARK -10 | Cypermethrin | 10% | EC | III | | |
| 182 | STARK-25 | Cypermethrin | 25% | EC | II | | |
| 183 | SUPER CYPERIN | Cypermethrin | 10% | EC | III | | |
| 184 | SUPER FIGHTER | Cypermethrin | 25% | EC | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 185 | SUPER KILLER | Cypermethrin | 10% | EC | III | | |
| 186 | SUPER KILLER | Cypermethrin | 25% | EC | II | | |
| 187 | SUPERHIT 10 | Cypermethrin | 10% | EC | III | | |
| 188 | SURYAMETHRIN | Cypermethrin | 10% | EC | III | | |
| 189 | SURYAMETHRIN | Cypermethrin | 25% | EC | II | | |
| 190 | TATA CYPER 25 EC | Cypermethrin | 25% | EC | II | | |
| 191 | TROFY | Cypermethrin | 25% | EC | II | | |
| 192 | USTAAD | Cypermethrin | 10% | EC | III | | |
| 193 | ALL DEL | Deltamethrin | 2.8% | EC | II | | |
| 194 | DECIS | Deltamethrin | 2.8% | EC | II | | |
| 195 | DELCIDE | Deltamethrin | 2.5% | EC | II | | |
| 196 | DICE | Deltamethrin | 2.8% | EC | II | | |
| 197 | KING FOG ULV | Deltamethrin | 1.2% | WW | II | | |
| 198 | KI-SIX | Deltamethrin | 2.8% | EC | II | | |
| 199 | K-OTHRIN | Deltamethrin | 2.5% | WP | II | | |
| 200 | K-OTHRIN FLOW | Deltamethrin | 2.5% | FLOW | II | | |
| 201 | PALI -2.5 WP | Deltamethrin | 2.5% | WP | II | Public health use | |
| 202 | SHASTRA | Deltamethrin | 2.8% | EC | II | | |
| 203 | SURYACIS | Deltamethrin | 2.8% | EC | II | | |
| 204 | VAANIS | Deltamethrin | 2.5% | WP | II | Public health use | |
| 205 | ZANGEER | Deltamethrin | 2.5% | FLOW | II | | |
| 206 | ALL VAN | Dichlorovos | 76% | EC | IB | Use only under recommend ation of respective PPO | |
| 207 | ANU - DDVP | Dichlorovos | 76% | EC | IB | " | |
| 208 | BADAL- 76 | Dichlorovos | 76% | EC | IB | " | |
| 209 | BLOOM | Dichlorovos | 76% | EC | IB | | |
| 210 | DEMAND | Dichlorovos | 76% | EC | IB | " | |
| 211 | DEVIKOL | Dichlorovos | 76% | EC | IB | " | |
| 212 | DIVAP - 100 | Dichlorovos | 76% | EC | IB | " | |
| 213 | DOOM | Dichlorovos | 76% | EC | IB | " | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 214 | KI-DDVP | Dichlorovos | 76% | EC | IB | " | |
| 215 | MOLVAN | Dichlorovos | 76% | EC | IB | " | |
| 216 | NUVAN | Dichlorovos | 76% | EC | IB | " | |
| 217 | RUSCRON | Dichlorovos | 76% | EC | IB | " | |
| 218 | SICOVAN | Dichlorovos | 76% | EC | IB | " | |
| 219 | SUCHLOR | Dichlorovos | 76% | SL | IB | " | |
| 220 | SURYA DOOM PLUS | Dichlorovos | 76% | EC | IB | " | |
| 221 | VIVAN | Dichlorovos | 76% | EC | IB | " | |
| 222 | CRACKDOWN | Dichlorovos 20% + Fenvalarate 5% | 25% | EC | II | | |
| 223 | COLONEL -S | Dicofol | 18.5% | EC | III | | Acaric ide |
| 224 | DEVIGON -30 | Dimethoate | 30% | EC | II | | |
| 225 | KI-ROGOR | Dimethoate | 30% | EC | II | | |
| 226 | ROGOHIT | Dimethoate | 30% | EC | II | | |
| 227 | ROGOR | Dimethoate | 30% | EC | II | | |
| 228 | ROGOR PLUS | Dimethoate | 30% | EC | II | | |
| 229 | ROGOR RICH | Dimethoate | 30% | EC | II | | |
| 230 | ROGORIN | Dimethoate | 30% | EC | II | | |
| 231 | ROGORUS | Dimethoate | 30% | EC | II | | |
| 232 | SURYA ROGOR | Dimethoate | 30% | EC | II | | |
| 233 | CHEMDOOT | Emamectin benzoate | 5% | SG | II | | |
| 234 | PROCLAIM - 5 SG | Emamectin benzoate | 5% | SG | II | | |
| 235 | ALL DON | Endosulfan | 35% | EC | II | | |
| 236 | ANU -ENDOSULFAN | Endosulfan | 35% | EC | II | | |
| 237 | DEVISULFAN -35 | Endosulfan | 35% | EC | II | | |
| 238 | ENDOCEL | Endosulfan | 35% | EC | II | | |
| 239 | ENDODHAN | Endosulfan | 35% | EC | II | | |
| 240 | ENDOHIT | Endosulfan | 35% | EC | II | | |
| 241 | ENDOIN | Endosulfan | 35% | EC | II | | |
| 242 | ENDOSULF 35 | Endosulfan | 35% | EC | II | | |
| 243 | KI-DON | Endosulfan | 30% | EC | II | | |
| 244 | KRICEL | Endosulfan | 35% | EC | II | | |
| 245 | LUSUFAN | Endosulfan | 35% | EC | II | | |
| 246 | MOLSULFAN | Endosulfan | 35% | EC | II | | |
| 247 | NAGSULFAN | Endosulfan | 35% | EC | II | | |
| 248 | PARRY SULFAN | Endosulfan | 35% | EC | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 249 | SICOSULFAN | Endosulfan | 35% | EC | II | | |
| 250 | SURYASULFAN | Endosulfan | 35% | EC | II | | |
| 251 | THIODAN | Endosulfan | 35% | EC | II | | |
| 252 | ALL MITE | Ethion | 50% | EC | II | | Restricted on tea plantation |
| 253 | FOSMITE 50% EC | Ethion | 50% | EC | II | | " |
| 254 | COLFOS | Ethion 40%+ cypermethrin 5% | 45% | EC | II | | " |
| 255 | EAGLE - 405 | Ethion 40%+ cypermethrin 5% | 45% | EC | II | | " |
| 256 | KI-BEER | Ethion 40%+ cypermethrin 5% | 45% | EC | II | | " |
| 257 | MITIGATE | Fenpyroximate | 5% | EC | II | | |
| 258 | ALL FEN | Fenvalerate | 0.4% | DP | III | | |
| 259 | ALL FEN SUPER | Fenvalerate | 20% | EC | II | | |
| 260 | DEVIFEN | Fenvalerate | 0.4% | DP | III | | |
| 261 | DEVIFEN -20 | Fenvalerate | 20% | EC | II | | |
| 262 | FENVAL - DP | Fenvalerate | 0.4% | DP | III | | |
| 263 | FENVAL - EC | Fenvalerate | 20% | EC | II | | |
| 264 | FLAME | Fenvalerate | 0.4% | DP | III | | |
| 265 | KEET GUARD | Fenvalerate | 0.4% | DP | III | | |
| 266 | KI-FEN | Fenvalerate | 0.4% | DP | III | | |
| 267 | KI-FEN | Fenvalerate | 20% | EC | II | | |
| 268 | KRIFEN | Fenvalerate | 0.4% | DP | III | | |
| 269 | MOFFEN | Fenvalerate | 0.4% | DP | III | | |
| 270 | MOLTEN | Fenvalerate | 20% | EC | II | | |
| 271 | NAGFEN | Fenvalerate | 0.4% | DP | III | | |
| 272 | NAGFEN | Fenvalerate | 20% | EC | II | | |
| 273 | REFEN | Fenvalerate | 0.4% | DP | III | | |
| 274 | SICOFEN 20 | Fenvalerate | 20% | EC | II | | |
| 275 | SURYA K-THRIN | Fenvalerate | 0.4% | DP | III | | |
| 276 | SURYAFEN | Fenvalerate | 20% | EC | II | | |
| 277 | TRUMPHCARD | Fenvalerate | 0.4% | DP | III | | |
| 278 | DEVIGENT PLUS | Fipronil | 5% | SC | II | | |
| 279 | JUMP 80%WP | Fipronil | 80% | WG | II | | |
| 280 | PESTICEAL - GEL | Fipronil | 0.05% | GEL | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 281 | REGENT | Fipronil | 0.3% | GR | II | | |
| 282 | REGENT | Fipronil | 5% | SC | II | | |
| 283 | SRIGENT | Fipronil | 0.3% | GR | II | | |
| 284 | STALKER | Fipronil | 5% | EC | II | | |
| 285 | FAME 480 SC | Flubendiamide | 39.35% | SC | II | | |
| 286 | ADMIRE | Imidacloprid | 70% | WG | II | | |
| 287 | ALLMIDA | Imidacloprid | 17.8% | SL | II | | |
| 288 | ATOM | Imidacloprid | 4% | SL | II | | |
| 289 | ATOM | Imidacloprid | 17.8% | SL | II | | |
| 290 | ATOM PLUS | Imidacloprid | 75% | WG | II | | |
| 291 | BILDOR | Imidacloprid | 17.8% | SL | II | | |
| 292 | CHAMPION | Imidacloprid | 17.8% | SL | II | | |
| 293 | CHEMIDA | Imidacloprid | 17.8% | SL | II | | |
| 294 | CONFIDOR | Imidacloprid | 17.8% | SL | II | | |
| 295 | DAWN-2000 | Imidacloprid | 17.8% | SL | II | | |
| 296 | JUMBO | Imidacloprid | 17.8% | SL | II | | |
| 297 | KI-IMIDA | Imidacloprid | 17.8% | EC | II | | |
| 298 | KI-IMIDA | Imidacloprid | 70% | WP | II | | |
| 299 | MAXFORCE - IC | Imidacloprid | 2.15% | EC | II | | |
| 300 | MAXFORCE - IC | Imidacloprid | 2.15% | GEL | II | House hold use | |
| 301 | MIDAS -2000 | Imidacloprid | 17.8% | SL | II | | |
| 302 | MOLDOR+ 200SL | Imidacloprid | 17.8% | SL | II | | |
| 303 | NAGMIDA | Imidacloprid | 17.8% | SL | II | | |
| 304 | PARRYMIDA | Imidacloprid | 17.8% | SL | II | | |
| 305 | PREMISE SC | Imidacloprid | 30.5% | SC | II | | |
| 306 | QUICKBAYT | Imidacloprid | 0.5% | BAIT | II | | |
| 307 | SIMIDA | Imidacloprid | 17.8% | SL | II | | |
| 308 | SURYA COUNTER PLUS | Imidacloprid | 70% | WS | II | | |
| 309 | SURYAMIDE GOLD | Imidacloprid | 17.8% | SL | II | | |
| 310 | TATAMID | Imidacloprid | 17.8% | SL | II | | |
| 311 | TEZ | Imidacloprid | 17.8% | SC | II | | |
| 312 | TROPICAL MAGIK | Imidacloprid | 17.8% | SL | II | | |
| 313 | TROPICAL MAGIK 70 WS | Imidacloprid | 70% | WS | II | | |
| 314 | KITAZIN | Iprobenfos | 48% | SL | III | | |
| 315 | AGENT PLUS | Lambdacyhalothrin | 5% | EC | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 316 | AVON | Lambdacyhalothrin | 2.5% | EC | II | | |
| 317 | CYRUN - 25 | Lambdacyhalothrin | 10% | WP | II | Public health use | |
| 318 | FARRATE | Lambdacyhalothrin | 5% | EC | II | | |
| 319 | KARATE | Lambdacyhalothrin | 5% | EC | II | | |
| 320 | LAMBDAMOL | Lambdacyhalothrin | 5% | EC | II | | |
| 321 | SURYA AGENT+ | Lambdacyhalothrin | 5% | EC | II | | |
| 322 | TALSU -10 WP | Lambdacyhalothrin | 10% | WP | II | Public health use | |
| 323 | TRIKON | Lambdacyhalothrin | 10% | WP | II | Public health use | |
| 324 | CIGNA - 5 EC | Lufenuron | 5.4% | EC | III | | |
| 325 | ALL MALA | Malathion | 5% | DP | III | | |
| 326 | ALL THION | Malathion | 50% | EC | III | | |
| 327 | ANU - MALATHION | Malathion | 50% | EC | III | | |
| 328 | DEVIMAR -50 | Malathion | 50% | EC | III | | |
| 329 | KI-THION | Malathion | 50% | EC | III | | |
| 330 | MALATHION | Malathion | 50% | EC | III | | |
| 331 | MALATHION REMEDY | Malathion | 5% | DP | III | | |
| 332 | MALATHION REMEDY | Malathion | 50% | EC | III | | |
| 333 | MOLRAKHSHA | Malathion | 5% | DP | III | | |
| 334 | SICOTHION | Malathion | 50% | EC | III | | |
| 335 | SURYATHION | Malathion | 50% | EC | III | | |
| 336 | RIMON | Novaluron | 10% | EC | III | | |
| 337 | CARINA | Profenofos | 50% | EC | II | | |
| 338 | KI-VAN | Profenofos | 50% | EC | II | | |
| 339 | KRIFOS | Profenofos | 50% | EC | II | | |
| 340 | MOLCRON | Profenofos | 50% | EC | II | | |
| 341 | PROFOS | Profenofos | 50% | EC | II | | |
| 342 | RATINA | Profenofos | 50% | EC | II | | |
| 343 | SOLDIER | Profenofos | 50% | EC | II | | |
| 344 | SURYA POWER | Profenofos | 50% | EC | II | | |
| 345 | SURYA GAGLY | Profenofos 40% + Cypermethrin 4% | 44% | EC | II | | |
| 346 | CORSA - 808 | Profenofos 40%+ Cypermethrin 5% | 45% | SC | II | | |
| 347 | COMBICRON | Profenofos 40%+ Cypermethrin 4% | 44% | EC | II | | |
| 348 | ROCKET - 44 | Profenofos 40%+ Cypermethrin 4% | 44% | EC | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 349 | INDOMITE | Propargite | 57% | EC | III | | Acaric ide |
| 350 | KI-MITE | Propargite | 57% | SP | III | | Acaric ide |
| 351 | KINGGITE | Propargite | 70% | EC | III | | Acaric ide |
| 352 | OMITE | Propargite | 57% | EC | III | | Acaric ide |
| 353 | SIMBA | Propargite | 57% | EC | III | | Acaric ide |
| 354 | FLYCLEAN | Propoxure | 2% | BAIT | II | | |
| 355 | ALL QUINAL | Quinalphos | 25% | EC | II | Prohibited use for tea Orchad | |
| 356 | EKALUX 25 EC | Quinalphos | 25% | EC | II | Prohibited use for tea Orchad | |
| 357 | FLASH | Quinalphos | 25% | EC | II | Prohibited use for tea Orchad | |
| 358 | HITALUX | Quinalphos | 25% | EC | II | Prohibited use for tea Orchad | |
| 359 | NAGIN | Quinalphos | 25% | EC | II | Prohibited use for tea Orchad | |
| 360 | SUQUIN | Quinalphos | 25% | EC | II | Prohibited use for tea Orchad | |
| 361 | SUQUINALPHOS | Quinalphos | 25% | EC | II | Prohibited use for tea Orchad | |
| 362 | VAZRA 25 | Quinalphos | 25% | EC | II | Prohibited use for tea Orchad | |
| 363 | KI-SAN | Quinalphos 20%+ Cypermethrin 3% | 23% | EC | II | Prohibited use for tea Orchad | |
| 364 | ACTARA | Thiamethoxam | 25% | WG | III | | |
| 365 | BLACK DIAMOND | Thiamethoxam | 25% | WG | II | | |
| 366 | MAXIMA | Thiamethoxam | 25% | WG | III | | |
| 367 | MOLARA | Thiamethoxam | 25% | WG | II | | |
| 368 | RENOVA | Thiamethoxam | 25% | WG | III | | |
| 369 | LARVIN | Thiodicarb | 75% | WP | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 370 | ALL TRIZO | Triazophos | 40% | EC | II | | |
| 371 | BULDOZER | Triazophos | 40% | EC | II | | |
| 372 | CURRENT - 40 | Triazophos | 40% | EC | II | | |
| 373 | GHATAK | Triazophos | 40% | EC | II | | |
| 374 | HATTRICK 40% EC | Triazophos | 40% | EC | II | | |
| 375 | JOSH | Triazophos | 40% | EC | II | | |
| 376 | SUTATHION | Triazophos | 40% | EC | II | | |
| 377 | TRIAZOPHOS | Triazophos | 40% | EC | II | | |
| 378 | TRIFOS | Triazophos | 40% | EC | II | | |
| 379 | TURBO | Triazophos | 40% | EC | II | | |
| 380 | BRAVO | Triazophos | 40% | EC | II | | |
| 381 | KI-TIGER | Triazophos | 40% | EC | II | | |
| 382 | TARZAN | Triazophos | 40% | EC | II | | |
| 383 | ALL MO | Triazophos 35%+ Deltamethrin 1% | 36% | EC | II | | |
| 384 | AMMO | Triazophos 35%+ Deltamethrin 1% | 36% | EC | II | | |
| 385 | ASPARK | Triazophos 35%+ Deltamethrin 1% | 36% | EC | II | | |
| 386 | COMBI - DT | Triazophos 35%+ Deltamethrin 1% | 36% | EC | II | | |
| 387 | KI-DT | Triazophos 35%+ Deltamethrin 1% | 36% | EC | II | | |
| 388 | MOVE | Triazophos 35%+ Deltamethrin 1% | 36% | EC | II | | |
| 389 | PARKER | Triazophos 35%+ Deltamethrin 1% | 36% | EC | II | | |
| 390 | SURYAMOVE | Triazophos 35%+ Deltamethrin 1% | 36% | EC | II | | |
| 391 | TIGER | Triazophos 35%+ Deltamethrin 1% | 36% | EC | II | | |

**Fungicides**

| Sl . No. | Trade Names | Common Name | A. I. % | Formula tion | WHO Classific ation | Condition If any | Re-marks |
|---|---|---|---|---|---|---|---|
| 1 | BENOFIT | Benomyl | 50% | WP | NH | | |
| 2 | CAPTRA | Captan | 50% | WP | NH | | |
| 3 | ALL STIN | Carbendazim | 50% | WP | NH | | |
| 4 | ANUSTIN | Carbendazim | 50% | WP | NH | | |
| 5 | ARREST | Carbendazim | 50% | WP | NH | | |
| 6 | BENFIL | Carbendazim | 50% | WP | NH | | |
| 7 | CARBINE | Carbendazim | 50% | WP | NH | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 8 | CARZIM | Carbendazim | 50% | WP | NH | | |
| 9 | DEROSAL | Carbendazim | 50% | WP | NH | | |
| 10 | DEVISTIN | Carbendazim | 50% | WP | NH | | |
| 11 | DHANUSTIN -50 | Carbendazim | 50% | WP | NH | | |
| 12 | FUNGISTIN | Carbendazim | 50% | WP | NH | | |
| 13 | K -VISTIN | Carbendazim | 50% | WP | NH | | |
| 14 | KI-BESTIN | Carbendazim | 50% | WP | NH | | |
| 15 | MOLSTIN | Carbendazim | 50% | WP | NH | | |
| 16 | SURYAZIM | Carbendazim | 50% | WP | NH | | |
| 17 | TAGISTIN | Carbendazim | 50% | WP | NH | | |
| 18 | RUSTONE - 50 | Carbendazim | 50% | WP | NH | | |
| 19 | KISAN SURKSHA | Carbendazim 12%+ Mancozeb 62% | 64% | WP | NH | | |
| 20 | ACER | Carbendazim 12%+ Mancozeb 63% | 75% | WP | NH | | |
| 21 | ALL SPARK | Carbendazim 12%+ Mancozeb 63% | 75% | WP | NH | | |
| 22 | COMPANION | Carbendazim 12%+ Mancozeb 63% | 75% | WP | NH | | |
| 23 | MACZIM | Carbendazim 12%+ Mancozeb 63% | 75% | WP | NH | | |
| 24 | SAAF | Carbendazim 12%+ Mancozeb 63% | 75% | WP | NH | | |
| 25 | SAATH | Carbendazim 12%+Mancozeb 63% | 75% | WP | NH | | |
| 26 | SAFE | Carbendazim 12%+ Mancozeb 63% | 75% | WP | NH | | |
| 27 | SICLON | Carbendazim 12%+ Mancozeb 63% | 75% | WP | NH | | |
| 28 | SURYASAFE | Carbendazim 12%+ Mancozeb 63% | 67% | WP | NH | | |
| 29 | SMOOTH | Carbendazim 15% +Thiram 50% | 65% | WP | NH | | |
| 30 | MANCOZIDE | Carbendazim 5%+ Mancozeb 75% | 80% | WP | NH | | |
| 31 | RATAN | Carbendazim 5%+ Mancozeb 75% | 80% | WP | NH | | |
| 32 | KI-VATAVAX | Carboxin | 75% | WP | NH | | |
| 33 | KI-VAX | Carboxin 37.5% +Captan37.5% | 75% | WP | NH | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 34 | VITAVAX - FF | Carboxin 37.5% + Thiram 37.5% | 75% | WP | NH | | |
| 35 | VITAVAX -200B | Carboxin 37.5% + Thiram 37.5% | 75% | WP | NH | | |
| 36 | KI- MAX | Carboxin 37.5%+ Thiram 37.5% | 75% | WP | NH | | |
| 37 | JATAYAU | Chlorothalonil | 75% | WP | NH | | |
| 38 | KAVACH | Chlorothalonil | 75% | WP | NH | | |
| 39 | ISACIDE 101 | Copper hydrochloride | 77% | WP | III | | |
| 40 | ALL COP | Copper oxychloride | 50% | WP | III | | |
| 41 | BLITOX - 50 | Copper oxychloride | 50% | WP | III | | |
| 42 | BLUE COPPER | Copper oxychloride | 50% | WP | III | | |
| 43 | CUREX | Copper oxychloride | 50% | WP | III | | |
| 44 | DEVICOPPER -50 | Copper oxychloride | 50% | WP | III | | |
| 45 | DHANUCOP | Copper oxychloride | 50% | WP | III | | |
| 46 | KI-COP | Copper oxychloride | 50% | WP | III | | |
| 47 | NAGCOPER | Copper oxychloride | 50% | WP | III | | |
| 48 | SURYA COPPER | Copper oxychloride | 50% | WP | III | | |
| 49 | TRUCOP | Copper oxychloride | 50% | WP | III | | |
| 50 | KINGMILL 72% WP | Cymoxanil 8% + Mancozeb 64% WP | 72% | WP | NH | | |
| 51 | MOXIMATE | Cymoxanil 8%+ Mancozeb 64% | 72% | WP | NH | | |
| 52 | KI-FINAZOL | Difenoconozole | 25% | WP | NH | | |
| 53 | SCORE - 25 EC | Difenoconozole | 25% | WP | NH | | |
| 54 | KI- MILIN | Diflubenzuron | 25% | WP | NH | | |
| 55 | KINGSTIVAL 50%WDG | Dimethomorph | 50% | WP | NH | | |
| 56 | KI-BAT | Dimethomorph | 50% | WP | NH | | |
| 57 | CARATHANE -48 EC | Dinocab | 48% | EC | III | | |
| 58 | KI-TEN | Fenamidon10%+ Mancozeb 50% | 60% | WP | NH | | |
| 59 | SECTIN -60 WG | Fenamidon10%+ Mancozeb 50% | 60% | WP | NH | | |
| 60 | NEBIJIN | Flusulphamide | 0.3% | WP | NH | | |
| 61 | COMFORT | Hexaconazol | 5% | WP | NH | | |
| 62 | CONQUER | Hexaconazol | 5% | WP | NH | | |
| 63 | CONTAF PLUS | Hexaconazol | 5% | WP | NH | | |
| 64 | DANZOLE | Hexaconazol | 5% | WP | NH | | |
| 65 | HAXAMAX | Hexaconazol | 5% | WP | NH | | |
| 66 | KI- HEXA | Hexaconazol | 5% | WP | NH | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 67 | KRIZOLE | Hexaconazol | 5% | WP | NH | | |
| 68 | NAGZOL | Hexaconazol | 5% | WP | NH | | |
| 69 | NECTOR | Hexaconazol | 5% | WP | NH | | |
| 70 | NECTOR PLUS | Hexaconazol | 5% | WP | NH | | |
| 71 | SICOTAF | Hexaconazol | 5% | WP | NH | | |
| 72 | SITARA | Hexaconazol | 5% | WP | NH | | |
| 73 | SURYA HEXAGOLD | Hexaconazol | 5% | WP | NH | | |
| 74 | TITAN | Hexaconazol | 5% | WP | NH | | |
| 75 | UDAAN | Hexaconazol | 5% | WP | NH | | |
| 76 | KI- MYCIN | Kasugamycin | 3% | WP | NH | | |
| 77 | ABIC M-45 | Mancozeb | 75% | WP | NH | | |
| 78 | AGRITHANE M - 45 | Mancozeb | 75% | WP | NH | | |
| 79 | ALL M - 45 | Mancozeb | 75% | WP | NH | | |
| 80 | BILZEB | Mancozeb | 75% | WP | NH | | |
| 81 | DEVIDAYAL M-45 | Mancozeb | 75% | WP | NH | | |
| 82 | DHANUKA M - 45 | Mancozeb | 75% | WP | NH | | |
| 83 | HINDUSTAN M-45 | Mancozeb | 75% | WP | NH | | |
| 84 | INDOFIL M - 45 | Mancozeb | 75% | WP | NH | | |
| 85 | LEO M-45 | Mancozeb | 75% | WP | NH | | |
| 86 | LUZIM - 45 | Mancozeb | 75% | WP | NH | | |
| 87 | MANCO -M 80% WP | Mancozeb | 80% | WP | NH | | |
| 88 | MANFIL | Mancozeb | 75% | WP | NH | | |
| 89 | MANZIB | Mancozeb | 80% | WP | NH | | |
| 90 | MOUNT M - 45 | Mancozeb | 75% | WP | NH | | |
| 91 | MZ-45 | Mancozeb | 80% | WP | NH | | |
| 92 | PLANT M-45% | Mancozeb | 75% | WP | NH | | |
| 93 | R M - 45 | Mancozeb | 75% | WP | NH | | |
| 94 | ROHAN - M 45 | Mancozeb | 75% | WP | NH | | |
| 95 | SCOT M - 45 | Mancozeb | 75% | WP | NH | | |
| 96 | SHREE M -45 | Mancozeb | 75% | WP | NH | | |
| 97 | SUPPER MANCO M- 45 | Mancozeb | 75% | WP | NH | | |
| 98 | SURYA M -45 | Mancozeb | 75% | WP | NH | | |
| 99 | TATA -M 45 | Mancozeb | 75% | WP | NH | | |
| 100 | UTHANE -M45 | Mancozeb | 75% | WP | NH | | |
| 101 | ZINETHANE | Mancozeb | 75% | WP | NH | | |
| 102 | EUROFIL NT | Mancozeb | 35% | WP | NH | | |
| 103 | KISAN M- 45 | Mancozeb | 75% | WP | NH | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 104 | MOLTHANE M- 45 | Mancozeb | 75% | WP | NH | | |
| 105 | KI- LAXYL | Metalaxyl | 35% | WP | III | | |
| 106 | RELAXIN ++35 | Metalaxyl | 35% | WP | NH | | |
| 107 | ALL META | Metalaxyl | 35% | WP | III | | |
| 108 | GALAXY | Metalaxyl | 35% | WP | III | | |
| 109 | RELAXYL | Metalaxyl | 35% | WP | III | | |
| 110 | SURYALAXIN 35 | Metalaxyl | 35% | WP | III | | |
| 111 | RELAXIN 72% WP | Metalaxyl 8% + Mancozeb 62% | 70% | WP | NH | | |
| 112 | ALL KRILOXYL | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 113 | ANUMILL -M 72 | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 114 | DHANUKXYL | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 115 | DUET | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 116 | HIMIL | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 117 | KINGMILL-MZ | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 118 | KRILAXYL MZ - 72 WP | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 119 | KRILOXILY | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 120 | MAGNET | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 121 | MASTER | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 122 | MATCO -8-64 | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 123 | METALMAN | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 124 | METAMAN | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 125 | RADONOL | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 126 | RIDOMIL GOLD | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 127 | RIDOMIL MZ - 72 | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 128 | SAILAXYL- MZ - 72 | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 129 | SPECTRA | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 130 | SRILAXYL | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 131 | SURYALAXYL GOLD MZ -72 | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 132 | TAGMIL | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 133 | UNILUX | Metalaxyl 8% + Mancozeb 64% | 72% | WP | NH | | |
| 134 | POLYRAM | Metiram | 70% | WP | NH | | |
| 135 | MONCEREN 250 SG | Pencycuron | 22.9% | WP | NH | | |
| 136 | AGFORCE | Propiconazole | 25% | WP | III | | |
| 137 | TILT - 25 EC | Propiconazole | 25% | WP | III | | |
| 138 | ANTRACOL | Propineb | 70% | WP | NH | | |
| 139 | DEVITRAC | Propineb | 70% | WP | NH | | |
| 140 | KI-ANTRA | Propineb | 60% | WP | NH | | |
| 141 | SURYA PROPINEB | Propineb | 70% | WP | NH | | |
| 142 | BALWAN | Sulphur | 80% | WP | NH | | |
| 143 | BAVISTIN | Sulphur | 80% | WP | NH | | |
| 144 | DEVISULPHUR - 80 WP | Sulphur | 80% | WP | NH | | |
| 145 | INSUF | Sulphur | 80% | WP | NH | | |
| 146 | KI- SULPHUR | Sulphur | 80% | WP | NH | | |
| 147 | MOLSTAR 85 DP | Sulphur | 85% | WP | NH | | |
| 148 | NAGSULF-P | Sulphur | 80% | WP | NH | | |
| 149 | SHARE | Sulphur | 40% | WP | NH | | |
| 150 | SULFEX | Sulphur | 80% | WP | NH | | |
| 151 | SULFIL | Sulphur | 80% | WP | NH | | |
| 152 | SULPHA PLUS | Sulphur | 80% | WP | NH | | |
| 153 | SULTANA WG | Sulphur | 80% | WP | NH | | |
| 154 | SURYA GOLD SULPHUR | Sulphur | 80% | WP | NH | | |
| 155 | THIOVIT | Sulphur | 80% | WP | NH | | |
| 156 | KINGSIN-70% WP | Thiophanate Methyl | 70% | WP | NH | | |
| 157 | CONTROL | Thiophanate Methyl | 70% | WP | NH | | |
| 158 | DEVITHIRAM 75 | Thiram | 75% | WP | III | | |
| 159 | KI- RAM | Thiram | 75% | WP | III | | |
| 160 | SURYA THIRAM | Thiram | 80% | WP | III | | |
| 161 | BAAN | Tricyclazole | 75% | WP | II | | |

| Sl. No. | Trade names | Common name | A. I. % | Formu-lation | WHO Classi-fication | Condition if any | Re-marks |
|---|---|---|---|---|---|---|---|
| 162 | LOGIK | Tricyclazole | 75% | WP | II | | |
| 163 | RPC TRICYCLAZOLE | Tricyclazole | 75% | WP | II | | |
| 164 | SHATRANJ | Tricyclazole | 75% | WP | II | | |
| 165 | TRIKAAL | Tricyclazole | 75% | WP | II | | |
| 166 | MERGER | Tricyclazole 18%+ Mancozeb 62% | 80% | WP | NH | | |
| 167 | KI-SEATHMAR | Validamycin | 3% | WP | NH | | |
| 168 | ALL -Z -78 | Zineb | 75% | WP | NH | | |
| 169 | INDOFIL Z - 78 | Zineb | 75% | WP | NH | | |
| 170 | AVATAR | Zineb 68%+ Hexaconazol 4% | 72% | WP | NH | | |

**Bactericide**

| Sl. No. | Trade Names | Common Name | A. I. % | Formula tion | WHO Classifica tion | Condition If any | Re-marks |
|---|---|---|---|---|---|---|---|
| 1 | ALL CIL | Streptomycin sulphate 9% + Tetracyclin Hydrochloride 1% | 10% | WP | NC | | |
| 2 | KRISON - AG | Steptromycin sulphate 9% + Tetracyclina Hydrochloride 1% | 10% | AG | NC | | |
| 3 | KI-CYCLIN | Streptomycin sulphate 9% + Tetracyclin Hydrochloride 1% | 10% | WP | NC | | |
| 4 | SURYA CROSIN-AC | Steptromycin sulphate 9% + Tetracyclina Hydrochloride 1% | 10% | AG | NC | | |

**Weedicides**

| Sl . No. | Trade Names | Common Name | A. I. % | Formul ation | WHO Classifica tion | Condition If any | Remarks |
|---|---|---|---|---|---|---|---|
| 1 | ALL CEL | 2, 4 - D Sodium salt | 80% | WP | NH | | |
| 2 | K – D | 2, 4 - D Sodium salt | 80% | WP | NH | | |
| 3 | KISAN 2,4-D | 2, 4 - D Sodium salt | 80% | WP | NH | | |
| 4 | SURYA WEEDMAR | 2, 4 - D Sodium salt | 80% | WP | NH | | |
| 5 | CUTOFF | 2,4-D Ethyal Ester | 34% | EC | NH | | |

| Sl . No. | Trade Names | Common Name | A. I. % | Formul ation | WHO Classifica tion | Condition If any | Remarks |
|---|---|---|---|---|---|---|---|
| 6 | KISAN 2,4-D | 2,4-D Ethyal Ester | 38% | EC | NH | | |
| 7 | SURYA WEEDMAR | 2,4-D Ethyal Ester | 38% | EC | NH | | |
| 8 | GLYMOL | Ammonium salt of Glyphosate | 71% | SG | NH | | |
| 9 | RASAYANZINE | Atrazine | 50% | WP | NH | | |
| 10 | SOLARO | Atrazine | 50% | WP | NH | | |
| 11 | SURYAZINE | Atrazine | 50% | WP | NH | | |
| 12 | ALL CHLOR | Butachlor | 5% | GR | NH | | |
| 13 | ALL CHLOR | Butachlor | 50% | EC | NH | | |
| 14 | ANUCHLOR | Butachlor | 5% | GR | NH | | |
| 15 | ANUCHLOR | Butachlor | 50% | EC | NH | | |
| 16 | BETA (B-50) | Butachlor | 50% | EC | NH | | |
| 17 | HUNTER | Butachlor | 50% | EC | NH | | |
| 18 | JOLT | Butachlor | 50% | EC | NH | | |
| 19 | KI- BUTA | Butachlor | 50% | EC | NH | | |
| 20 | MILCHLOR | Butachlor | 50% | EC | NH | | |
| 21 | RASAYANCHLOR | Butachlor | 50% | EC | NH | | |
| 22 | SURYACHLOR | Butachlor | 50% | EC | NH | | |
| 23 | THUNDER | Butachlor | 50% | EC | NH | | |
| 24 | TRAPP | Butachlor | 50% | EC | NH | | |
| 25 | ALLCLEAR | Glyphosate | 41% | SL | NH | | |
| 26 | ALLKILL | Glyphosate | 41% | SL | NH | | |
| 27 | CLEAN - UP | Glyphosate | 41% | SL | NH | | |
| 28 | GLADIATOR | Glyphosate | 41% | SL | NH | | |
| 29 | GLADIATOR | Glyphosate | 71% | SG | NH | | |
| 30 | GLYCEL | Glyphosate | 41% | SL | NH | | |
| 31 | GLYFARM | Glyphosate | 41% | SL | NH | | |
| 32 | GLYFOS | Glyphosate | 41% | SL | NH | | |
| 33 | HIJACK | Glyphosate | 41% | SL | NH | | |
| 34 | KI-GLYPHO | Glyphosate | 41% | SL | NH | | |
| 35 | ORYX | Glyphosate | 41% | SL | NH | | |
| 36 | PIGLYPHOS | Glyphosate | 41% | SL | NH | | |
| 37 | SURYA CLEAN-UP | Glyphosate | 41% | SL | NH | | |
| 38 | VERVE | Glyphosate | 41% | SL | NH | | |
| 39 | METRIZIM | Metribuzin | 70% | WP | II | | |
| 40 | TOPSTAR | Oxadiargyl | 80% | WP | NH | | |
| 41 | OXYGOLD | Oxyfluorfen | 23% | EC | NH | | |
| 42 | CHEMSPRAY | Paraquat dichloride | 24% | SG | II | | |
| 43 | FIRESTORM | Paraquat dichloride | 41% | SL | II | | |

| Sl . No. | Trade Names | Common Name | A. I. % | Formul ation | WHO Classifica tion | Condition If any | Remarks |
|---|---|---|---|---|---|---|---|
| 44 | GRAMOXONE | Paraquat dichloride | 24% | SL | II | | |
| 45 | STRIKER | Paraquat dichloride | 24% | SL | II | | |
| 46 | SURYAQUAT | Paraquat dichloride | 24% | SL | II | | |
| 47 | UNIQUAT | Paraquat dichloride | 24% | SL | II | | |
| 48 | PENDIMOL | Pendimethalin | 30% | EC | III | | |
| 49 | SPEED | Pendimethalin | 30% | EC | III | | |
| 50 | STOMP | Pendimethalin | 30% | EC | III | | |
| 51 | STOP | Pendimethalin | 30% | EC | III | | |
| 52 | SURYATHALIN | Pendimethalin | 30% | EC | III | | |
| 53 | ALL FIT | Pretilachlor | 5% | EC | NH | | |
| 54 | KI- PERFOX | Pretilachlor | 50% | EC | NH | | |
| 55 | KRIFIT | Pretilachlor | 5% | EC | NH | | |
| 56 | OFFSET | Pretilachlor | 5% | EC | NH | | |
| 57 | PHEMON | Pretilachlor | 5% | EC | NH | | |
| 58 | POLO -50 | Pretilachlor | 5% | EC | NH | | |
| 59 | PRINCE | Pretilachlor | 5% | EC | NH | | |
| 60 | RIFIT | Pretilachlor | 5% | EC | NH | | |
| 61 | SURYAPRETILACHL OR | Pretilachlor | 50% | EC | NH | | |
| 62 | SAATHI | Pyrazosulfuron ethyl | 10% | WP | NH | | |
| 63 | TOTAL | Sufosulfuron75% + Metsulfuron methyl 5% | 80% | WP | NH | | |

**Rodenticides**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | RATONIL | Bromadiolone 0.005 | 0.005% | RB | II | | |
| 2 | ROBAN | Bromadiolone 0.25 | 0.25% | CB | II | | |
| 3 | ALL COMMANDO | Zinc Phosphide | 80% | WP | IB | | |
| 4 | COMMANDO | Zinc Phosphide | 80% | WW | IB | | |
| 5 | RATAL | Zinc Phosphide | 80% | WW | IB | | |
| 6 | RATIL | Zinc Phosphide | 80% | WW | IB | | |
| 7 | RATOX | Zinc Phosphide | 80% | WW | IB | | |

**Bio-pesticides**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | BIO - CURE - B | *Pseudomonas flurescens* | 1.75% | EC | NH | | Fungicide |
| 2 | SPARSHA | *Pseudomonas flurescens* | 1.75% | EC | NH | | Fungicide |

| Sl . No. | Trade Names | Common Name | A. I. % | Formul ation | WHO Classifica tion | Condition If any | Remarks |
|---|---|---|---|---|---|---|---|
| 3 | BIO - POWER - F | *Trichoderma viride* | 1.15% | WP | NH | | Fungicide |
| 4 | NISARGA | *Trichoderma viride* | 1% | WP | NH | | Fungicide |
| 5 | MULTINEEM | Azadirachtin | 0.03% | EC | NH | | Insecticide |
| 6 | MULTINEMOR | Azadirachtin | 0.15% | EC | NH | | Insecticide |
| 7 | NICONEEM | Azadirachtin | 0.15% | EC | NH | | Insecticide |
| 8 | NICONEEM | Azadirachtin | 0.30% | EC | NH | | Insecticide |
| 9 | NIMBECIDINE | Azadirachtin | 0.03% | EC | NH | | Insecticide |
| 10 | OZONEEM TRISHUL | Azadirachtin | 1% | EC | NH | | Insecticide |
| 11 | OZONEEM TRISHUL | Azadirachtin | 5% | EC | NH | | Insecticide |
| 12 | BABA | *Beauveria bassiana* | 1.15% | WP | NH | | Insecticide |
| 13 | BIO -POWER | *Beauveria bassiana* | 1.15% | WP | NH | | Insecticide |
| 14 | PACER ™ | *Metarhizium anisopliae* | 1.15% | WP | NH | | Insecticide |
| 15 | MEALIKIL ™ | *Verticillium lecani* | 1.15% | WP | NH | | Insecticide |

*Source:* PR and MD, 2010 - Pesticide Statistic book

## 6.2 List of company/firms involved in pesticide import

| Sl. No. | Name of Company/firm | Sl. No. | Name of Company/firm |
|---|---|---|---|
| 1 | Diamond Agro International | 27 | Prerna Traders |
| 2 | Agro Input Corporation(National seed company Ltd) | 28 | Purwanchal Agrovet |
| 3 | Agro Veterinary Trade | 29 | R.P. Suppliers |
| 4 | Arvinda Agro Center | 30 | Ranjan Enterprises |
| 5 | Bachan Agrico, Biratnagar | 31 | Sabha Inter Nepal |
| 6 | Bhadra Agro Pvt.Ltd | 32 | Sabha International Trading |
| 7 | Chain Trading House | 33 | Sagarmatha Agro International |
| 8 | Dahal Trading | 34 | Shakti and Shakti |
| 9 | Divas Enterprises | 35 | Shree Krishan Agro tech Pvt. Ltd. |
| 10 | Inter Nepal Agrovet Company | 36 | Shrestha International trading |
| 11 | Jay Kishan Seed Center | 37 | Vibhana Enterprises |
| 12 | Jha Krishi Seed concern | 38 | Amit suppliers |
| 13 | Jhapa Krishi Bhandar | 39 | Crop Tech Nepal |
| 14 | Kasta Mandap International | 40 | East west seed Nepal Pvt. Ltd. |
| 15 | Kisan Agro Chemicals | 41 | Krish Rasayan Exports Nepal |
| 16 | Krishan Beej Bhandar | 42 | Nawa Smbriddhi Enterprises |
| 17 | Mitra Agro veterinary | 43 | Gorkha seed and Agro Center |

| Sl. No. | Name of Company/firm | Sl. No. | Name of Company/firm |
|---|---|---|---|
| 18 | NBC Enterprises | 44 | Mahashakti Suppliers |
| 19 | Nepal Agro center, Janakpur | 45 | Sai Ram Agro Traders |
| 20 | Nepal Agro Chem | 46 | Rosan Agro Concern |
| 21 | Nepal Agro Traders | 47 | A.S. Enterprises |
| 22 | Nepal Krishi Rasayan Product | 48 | Agro-Multi Care Pvt. Ltd |
| 23 | Nisha Trading | 49 | Mechi Agro Veterinary |
| 24 | Pants Suppliers | 50 | Atlas Trading Concern Pvt. Ltd. |
| 25 | Pest Control Nepal (kathmandu) | 51 | Lal Singh Traders Pvt. Ltd. |
| 26 | Prafula Agro Suppliers | 52 | Amit Pesticide Udhyog |

## 6.3 Amount of date expired pesticides stored at different warehouse

| Sl. No. | Location | Amount in m. tons | Remarks/storage condition |
|---|---|---|---|
| 1. | AIC, Amlekhganj | 50.900 | Packed in 200 lts steel drums. |
| 2. | NSC, Nepalgunj | 6.735 | Some packed in 60 lts HDPC |
| 3. | NARC, Khumaltar | 4.761 | Packed in 200 lts HDPC |
| 4. | AIC, Biratnagar | 1.660 | Stored in thatched house |
| 5. | SSD, Hetauda | 1.650 | Stored in rented room |
| 6. | RARS, Lumle | 1.625 | Dust spread over |
| 7. | CDB, Khajura | 1.485 | Liquid spilled over |
| 8. | AIC, Pokhara | 1.285 | Bags broken |
| 9. | AIC, Birgunj | 0.850 | Stored in small room, |
| 10. | NSC, Jankpurdham | 0.813 | Dust spread over. |
| 11. | AIC, surkhet | 0.442 | |
| 12. | RARS, Khajura | 0.387 | Products packed in aluminium foil. |
| 13. | DADO, banke | 0.370 | Stored in open garage |
| 14. | AIC, Kuleshwor | 0.214 | |
| 15. | AIC, Bharatpur | 0.181 | |
| 16. | NSC, Hetauda | 0.150 | |
| 17. | ARS, Pakhribas | 0.138 | |
| 18. | AIC, Ghorahi | 0.137 | |
| 19. | AIC, Sindhuli | 0.130 | |
| 20. | AIC, Gaighat | 0.110 | |
| 21. | AIC, lahan | 0.090 | |
| 22. | AIC, Illam | 0.083 | |
| 23. | AIC, Guleria | 0.051 | |
| 24. | NARC, Khumaltar | 22 cylinders | Methyl bromide |
| 25. | CHC, Kirtipur | 21 cylinders` | Methyl bromide |
| | **Grand Total** | 74.257m.tons + 43 cylinders of methyl bromide (each cylinder contains about 50 kg methyl bromide) | |

*Source: Manandhar, 2005*

## 7. List of different banned chemical pesticides, date of banning, cause of banning, proved health hazard due to those pesticides before banning

Nepal has banned 14 pesticides including **PIC** list pesticides (Methyl Parathion and Monocrotophos) in the country (Table 6). Before banning, PIC list pesticides (Methyl Parathion and Monocrotophos) were studied to prove health hazard. A study on Toxicity Evaluation of Monocrotophos and Methyl Parathion to Tomato Fruit Worm *Helicoverpa armigera* Hubner and Crop Environment was carried out in two successive years (2004/05 and 2005/06). The data of pesticides residues level of study is given as below.

### 7.1 Pesticides residues level (ppm) in tomato fruit in 2004/05 and 2005/06

| Pesticides | Pesticides Residues Level (in ppm) in tomato fruit | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 1st day | | 3rd day | | 7th day | | 15th day | |
| | 061/62 | 062/63 | 061/62 | 062/63 | 061/62 | 062/63 | 061/62 | 062/63 |
| Monochrotophos | 0.178 | 0.7588 | 0.153 | 0.6215 | 0.140 | 0.3603 | 0.087 | 0.3284 |
| Methyl-Parathion | 1.43 | 1.1325 | 0.745 | 0.8866 | 0.145 | 0.1809 | 0.005 | 0.0166 |
| Control | N.D | N.D | N.D | N.D | N.D | N.D | N.D | N.D |

**Maximum Residue Limits (MRL) of pesticides (ppm) in different commodity**

| Commodity | Maximum Residue Limits (MRL) and Acceptable Daily Intake (ADI) of pesticides (ppm) in different commodity | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Chlorpyrifos | | Dimethoate | | M. parathion | | Monocrotophos | |
| | MRL | ADI | MRL | ADI | MRL | ADI | MRL | ADI |
| Tomato | 0.5 | | 1.0 | | | | | |
| Vegetables and Fruits | | 0.01* | | 0.1 | 0.05 | 0.02* | 0.2 | 0.0006* |

*Source: Codex Alimentarius Commission, 2005, ESCAP/CIRAD, 1990*

The study revealed that in both years toxic residues of monocrotophos and methyl parathion analysed on tomato fruits at 1, 3, 7 and 15th day of treatment with respective pesticides were above MRL, which indicated that the use of monocrotophos and methyl parathion on vegetable crops is detrimental to consumers' health in Nepalese condition. So, the Government of Nepal has banned these two insecticides.

### 7.2 Banned pesticides

#### 7.2.1 List of banned pesticides

| Sl. No. | Name of pesticide | Banned date | Remarks |
|---|---|---|---|
| 1 | Chlordane | March, 2001 | Persistent organic pollutant pesticide |
| 2 | D.D.T | March, 2001 | Persistent organic pollutant pesticide |
| 3 | Dieldrin | March, 2001 | Persistent organic pollutant pesticide |
| 4 | Endrin | March, 2001 | Persistent organic pollutant pesticide |
| 5 | Aldrin | March, 2001 | Persistent organic pollutant pesticide |

| Sl. No. | Name of pesticide | Banned date | Remarks |
|---|---|---|---|
| 6 | Heptachlor | March, 2001 | Persistent organic pollutant pesticide |
| 7 | Mirex | March, 2001 | Persistent organic pollutant pesticide |
| 8 | Toxaphene | March, 2001 | Persistent organic pollutant pesticide |
| 9 | B.H.C | March, 2001 | |
| 10 | Lindane | March, 2001 | |
| 11 | Phosphamidon | March, 2001 | |
| 12 | Organo Mercury fungicide | March, 2001 | |
| 13 | Methyl parathion | June, 2006 | |
| 14 | Monocrotophos | June, 2006 | |

## 8. Available information on pesticide misuse, about environmental and health effects of different pesticides under local conditions and possible remedial options (if any) account on farmers practices in relation to health of their own and consumer health

### 8.1 Pesticide misuse/Abuse

Regular misuse of pesticides and especially the use of broad spectrum pesticides in Nepal cause pests to adopt and become resistant to the pesticides. Most pesticides are then required at higher doses to achieve the same level of control, though often these are not as effective as earlier. The high dosage is very critical with pesticides. Many cases have been recorded in tomato cultivation. Under dosing to save money results in no control as a threshold dosage must reach the pest for any mortality to occur. It is a known fact that farmers do not follow the pre-harvest waiting period. They apply pesticides near harvesting time while some even dip vegetables in pesticides before selling. Others treat food grain with pesticides against storage pests. Many misuses have been reported generally from farmers who do not realize the extent to which pesticides are poisonous and hazardous to humans and the nature. The concept of chronic poisoning and health risks is not fully understood by farmers, distributors and importers. Studies have shown that over 60% farmers using pesticides for over five years wait for less than two weeks after spraying pesticides before harvesting the crop. The environmental costs of pesticide misuse are potentially huge. Endosulfan is broad spectrum and has been restricted in many countries to non-aquatic habitats as it is highly toxic to fish. Farmers place pesticides into rivers and streams to catch fish. The negative health effects of pesticides are, therefore, serious problems requiring efforts to reduce pesticide misuse in Nepal.

Abuse and misuse of insecticides are common in Nepal and although the use of pesticides in Nepal represents a small fraction of the global total, abuse and misuse are disproportionately high factors that are attributed to the high levels of illiteracy and inaccessibility to reliable protective clothing. Smuggled products, unregistered products, open air sales, sale of banned products, cases of decanting and reweighing, faking of pest control products using counterfeit labels, sale of date expired products with modified expiry dates are among the misuse cases that have been reported in Nepal. There are certain crops like vegetables in which use of pesticides are taking place on commercial basis in the areas where farmers are doing commercial vegetable farming. In tea also, farmers use the pesticides. One can find rampant use of pesticides in cotton farming. Our researches have shown that cotton is the highest consumer of pesticides in Nepal. These are the crops where pesticides are either misused or overused. Overall, the total quantity of pesticides use in Nepal is low. Of the total amount, vegetable crops consume higher amount of pesticides as compared to cereal crops.

However, in Nepal, the situation is very different. Little monitoring is carried out and little information is available to farmers on how to select and use pesticides. The climate does not encourage the use of protective clothing, and the high cost of the newer and safer pesticides all contribute to the problem. There are frequent and widespread cases illustrating misuse of pesticides. Like many other developing countries, pesticide hazards on human health, persistence of toxic residues of pesticides in living organisms, impact of pesticides on non-target organisms, pest resistance due to pesticide use and other ill effects of pesticides have not been systematically studied and monitored in Nepal.

### 8.2 Pesticide risks

Effective registration, licensing, quality control, residue analysis in food and enforcement of other measures including monitoring and testing are important to minimize the risks caused by pesticides. Risk assessment program should be carried out whenever necessary. There is no coordinating team for research work on pesticides at field level for the recommendation of appropriate pesticides on crop production. Training and workshop about the use and safety of pesticide are organized for farmers, retailers and distributors regularly by Plant Protection Directorate and District Agriculture Development Office. In Nepal, very few or no work has been done on risk management. In Nepal, it is high time to develop Chemical Safety Programmes - risk management strategies and know-how for coping with chemical accidents and set up of a Central Authority for safety management of toxic chemicals, and Government needs to promote awareness of responsibilities under the Code of Conduct on Pesticides and relevant FAO Guidelines and should implement international agreements regulating trade and use of hazardous chemicals, and upgrade facilities for chemical analysis. Nepal Government has given IPM high priority to minimize pesticide risk.

- Emphasis has been on the important role of IPM in reducing pesticide risks, because IPM:
- reduces reliance on pesticides and encourages the application of other alternatives,
- encourages the use of low risk pesticides in cases of inevitable pesticide use,
- prevents development of diseases through proper plant management and preservation of useful natural enemies and parasites,
- raises farmers' knowledge about diseases and ecosystems in the fields.

## 9. Available information about pesticide residue on food, water, soil, environment etc., and methods of monitoring

### 9.1 Pesticide residue in soil

Very few studies were conducted in the past on the pesticide residues in the contaminated soil. A study done by Pro-Public in the year 2005 (MOEST 2007) taking only 5 composite soil samples of a site showed significant level of pesticides contamination in the same site. The Pro-Public, an NGO, did not study the relation between the health impacts and soil contamination at that time. However, the result of the present study when compared with the findings of the Pro-Public, an increase in some pesticides residues i.e endosulphan and mercury in the soil but in the meantime a decrease of DDT could be found. The residues of some pesticides i.e.-HCH had disappeared, whereas the new ones like heptachlor, cis and trans chlordane appeared in the soil.

### 9.2 Pesticide residues on food

There are numerous reports of excessive pesticide residues in food in Nepal. Annual Bulletins from the Central Food Research Laboratory (CFRL) routinely detected residues from their sampling program. From 1981 to 1986, the residues of organochlorine and organophosphate insecticides were

a more serious problem in cereal grains, legumes and vegetables but have declined in recent times. Residues surpassing legal limits set by Government of Nepal by the Food Standardization Committee were reported in the Annual Bulletins from 1992/1993 through 1995/96 in tea (Malathion, DDT, BHC), grapes (methyl parathion), rice (BHC), chickpea (DDT) and organophosphates on vegetables (greens, potato, cabbage, chickpea and pumpkin).

Waiting period is the duration after which the commodity treated with pesticides can be used. The waiting period of commonly used pesticides are generally 10-15 days up to 1 months in certain pesticides, but the common negligence among farmers, wholesalers and retailers prevails, which in turn, lead not to follow waiting period. Most of the farmers used highly toxic pesticides, which are already banned in Nepal.

A total of one thousand two hundred and fifty eight samples were analysed by DFTQC for the different food grains, water, tea, fruits, soft drink, milk, vegetables etc., in different years (DFTQC Annual bulletin) ( Table 7).

**Table 7. Year-wise sample analysis and detection of pesticides**

| Year | No of samples | DDT | BHC | Malathion | Parathion | Methyl parathion |
|---|---|---|---|---|---|---|
| 1995 | 34 | 2 | 13 | 10 | 4 | 3 |
| 1996 | 64 | ND | ND | 7 | ND | 2 |
| 1997 | 121 | ND | ND | 1 | ND | 10 |
| 1998 | 112 | ND | ND | 5 | ND | 8 |
| 1999 | 70 | ND | ND | 8 | ND | 4 |
| 2000 | 54 | ND | 1 | 10 | ND | |
| 2001 | 134 | 17 | 17 | ND | ND | 2 |
| 2002 | 106 | ND | ND | ND | ND | ND |
| 2003 | 36 | ND | ND | ND | ND | ND |
| 2004 | 303 | ND | 2 | ND | ND | ND |
| 2005 | 141 | ND | ND | ND | ND | ND |
| 2006 | | ND | ND | ND | ND | ND |
| 2007 | 58 | ND | ND | ND | ND | ND |
| 2008 | 25 | ND | ND | ND | ND | ND |
| **Total** | **1258** | **19** | **33** | **41** | **4** | **29** |

*Source : Annual Bulletin, 1995-2008, DFTQC (Data Compilation)*

Among all samples analysed, (10%) of the total samples were detected found with the residues of pesticides, which included malathion (3.25%), BHC (2.6%), Methyl parathion (2.3%), DDT (1.5%) and parathion (0.31%). Detection of pesticide residues showed the highest level of contamination in Leafy vegetables (34.9%) followed by root vegetables (27.7%). The number and type and range of pesticides detected in a particular food group are given below in Table 8.

**Table 8. Food Group and Range of pesticide residues detected**

| Type of foods | No of Samples | DDT | BHC | Malathion | Parathion | Methyl Parathion |
|---|---|---|---|---|---|---|
| Cereals | 131 | | 2 | 4 | 1 | |
| Pulses | 59 | | | 4 | | |
| Wheat flour | 10 | | | | | |
| Leafy vegetable | 478 | | 4 | 20 | | 20 |
| Fruit veg | 115 | | 1 | 6 | | 3 |
| Root veg | 151 | 17 | 17 | | | 1 |
| Fruits | 30 | | | 1 | | 2 |
| Tea | 91 | 1 | 9 | 6 | 3 | 3 |
| Water | 31 | | | | | |
| Soft drink | 69 | | | | | |
| Weaning food | 29 | | | | | |
| Milk | 5 | 1 | | | | |
| Herbal drugs | 7 | | | | | |
| Honey | 29 | | | | | |
| Junar peel | 1 | | | | | |
| Curd | 1 | | | | | |
| Ice cream | 1 | | | | | |
| Ritha | 2 | | | | | |
| Skim milk powder | 11 | | | | | |
| Unilitto | 3 | | | | | |
| Wai wai nooddles | 2 | | | | | |
| Miscellaneous | 2 | | | | | |
| Total | 1258 | 19 | 33 | 41 | 4 | 29 |

*Source : Annual Bulletin, 1995-2008, DFTQC (Data Compilation*

Among the DDT identified food samples, nearly ninety percent samples of root vegetables were found contaminated whereas one sample each of milk and tea were also with traces of DDT. Similarly, BHC was detected in more than a half (51.1%) of the samples of root vegetables followed by fruits (26.4%) and then leaf vegetables, cereals and fruit vegetables. Malathion was detected in the highest number of samples of leaf vegetables (48.7%) followed by tea (14.6%). The residue of malathion observed was the highest in the samples of tea (up to 10 ppm). Parathion was detected in only four samples and methyl parathion was detected in twenty nine samples. Methyl parathion was detected in the highest number of samples of leaf vegetables (68.9%).

A study was carried out by Plant Protection Directorate for eighteen samples of vegetables (7 samples of potato, 6 samples of brinjal, and 5 samples of tomato) collected in 2004, which were analyzed at the private accredited laboratory. The residue level in potato was recorded from 0.45 to 4.8 ppm (Mancozeb), ND (Endosulfan) and 0.017 ppm (Methyl Parathion). Likewise, the residue level in tomato was found from 1.48 to 8.6 ppm (Mancozeb), ND to 0.042 ppm (Cypermethrin) and ND (Dimethoate). Samples of brinjal were not found to be contaminated with any pesticide residue (Deltamethrin, Fenvalerate, Cypermethrin, Chlorpyrifos and Methyl Parathion).

The problem is more severe because of poor selection of pesticide and short harvesting interval of crops after pesticide application (Sharma, 1994). According to a survey of farmers using pesticide continuously for over five years or more, over 60% of the farmers do not wait even for two weeks between spraying pesticides and harvesting the crops (IUCN, 1994).

## 9.3 Pesticide issues in food safety

Pesticides are the potential health hazards, which have drawn attention to food quality control agencies, certification bodies, international community and trading partners. Due to the lack of regular monitoring of pesticides at the field level, the export of tea, honey and other food commodities are adversely affected in the recent years (Koirala, 2009). Pesticides analysis facility is limited in Nepal. Only few institutions are involved in it and the data available are not sufficient. The laboratories require sophisticated equipment to carry out the residue analysis. Laboratories require reference standard, valid analytical method and commitment to the tough jobs. No organized national survey has so far been conducted periodically. Therefore, a valid comparison on use pattern of pesticides cannot be made. The gap between the availability of manpower and other resource requirement is very high, which demands the infrastructure support to the government as well as to private sector from the donor agencies. Similarly, exchange visits, training and other supports by the donor agencies are necessary in order to improve the situation. The country like Nepal has export potentials for agriculture and processed products. This is not possible unless and until the country has safe food production. As Nepal has already become a member of WTO, export opportunity can be utilized. It will generate employment and earning to the local people. Being a member of WTO, Nepal must comply with the SPS requirements. Considering the present pace of implementation, it needs to do a lot to attain the goal with appropriate harmonization of standards, rules/regulations, guidelines as well as mechanism of inspection and certification of import/export of food commodities. In the emerging scenario, there is a need to have MRA at the regional and international level.

## 9.4 Environment effect

Systematic studies are lacking to monitor the effects of pesticides on human health and the environment. So there are serious data gaps due to lack of capability and capacity in monitoring data relating to health, environmental contamination and specific incidents. However, there is little information on environmental contamination, poisoning cases and the presence of several pesticides in crop and vegetables.

Pesticide residues, some of which even belong to POPs category, were found in the soil near the warehouse having adverse impacts on the human health and environment of the study area. The constant presence of such pesticides over a long time or even increasing level of some obsolete pesticides in the soil confirmed that the pesticides had persistence nature and their concentrations in the soil was increasing with time along with the potential of increasing health hazards. Among the students, 95% related their health problems to the soil contaminants of pesticides in the adjoining warehouse in Amlekhagang. If obsolete pesticides stored in Amlekhagang Warehouse, will not be disposed off safely in time, unavoidable accidents may aggravate the problem in the future. Since the pesticides have the property of bioaccumulation and biomagnifications, they will derive long lasting impacts on the environment and human health; especially the students need to be protected in time. Students spending 180 days in the school come in contact with such pesticides in soil or air for 1080 hours in a year and this is enormously high occupational exposure to any contaminant. An exposure of this degree at the growing and learning stage of the school children is actually a loss to the Nation. The complaints of the students indicated that there might be a significant level of these pesticides in their tissues, which needs to be verified by the future investigations. Moreover, similar research is also needed to be done in air samples to reach at the core of conclusions. Government needs to pay special attention towards the safer disposal of obsolete pesticides to protect the environment and

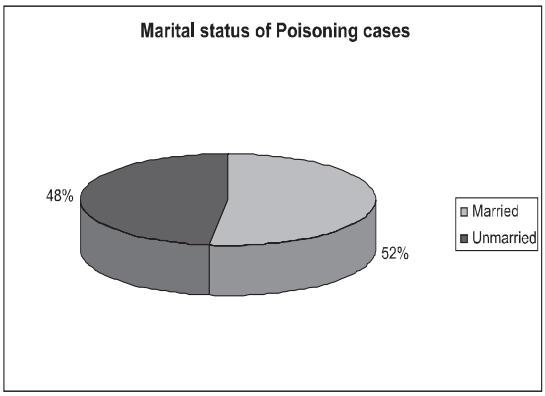
public health and to ensure clean and healthy environment, which is the basic right of the citizen and the state is responsible to guarantee it.

Though, environmental levels of pesticides were not reported, a survey conducted in 1995 in Nepal revealed that chemical pesticides such as aldrin were used for fishing baits in rivers, streams and ponds. These chemicals kill the fish, which after being surfaced are collected by fishermen. They even use pesticides (Endosulfan) in rivers and streams for catching fish in an easy way. A study on pesticide pollution in Nepal revealed that 52 percent of the respondents had no knowledge of the environmental effects of chemical pesticides.

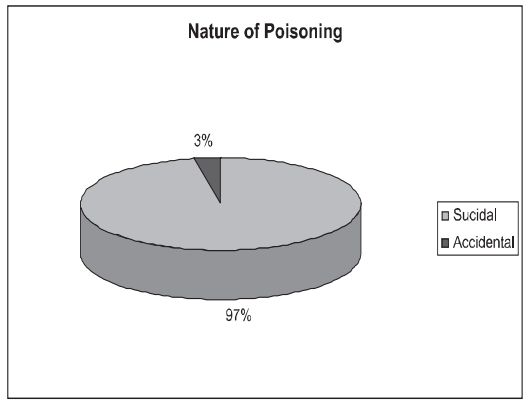
## 9.5 Pesticide poisoning

Use of pesticides in Nepal was introduced in about 1952 and its' use has been increasing over the years. It has been estimated that the use of pesticides in the developing countries approximately doubled every. There are around 107 common pesticides with 650 trade names in the market (annex III). Several available pesticides are possibly carcinogenic to humans. Before the enactment of Pesticides Act, 1991 and Pesticides Regulations, 1993 that came into enforcement from 16 July 1994, there was no law regarding pesticides in the country.

Simkhada (2007) reported that out of 21200 cases presented in emergency department, 61 (0.29%) were poisoning cases. The male and female ratio was 1.1:1. Young adult aged 20-29 years 30 (49.2%) comprised the most cases. Married persons, comprised 52% attempted to poisoning, was more often than unmarried ones (Graph 1). Student and house wives comprised majority of poisoning attempters, which comprised 47.5% and 25%, respectively. The commonest insecticides used for poisoning were organophosphorous agents. There were 19 cases (31.1%) of methyl parathion (metacid) poisoning. Other commonest poisoning agents were paracetamol, rodenticides and benzodiazepines, respectively. Of those who were presented with ingestion of poison, 59 (97%) had a history of doing so with suicidal intention (Graph 2). Family conflict and mental illness were the most common underlying reasons/associations of intentional poisoning.




*Graph 1*




*Graph 2*

The most common insecticides used for suicidal attempt are organophosphorous compounds followed by zinc phosphide and aluminium phosphide. Familial conflict, failed love affair, failure in examination and business, financial problems are usually the common causes of suicidal poisoning.

### 9.6 Accidental and occupational

A study on pesticide poisoning done by the World Health Organization in the SEARO countries revealed that among total of 258 cases of acute pesticide poisoning in Nepal, 91.5% were intentional cases followed by 6.2% occupational exposure cases and 1.16% accidental cases (Kathmandu University Medical Journal, 2003). All patients with intentional poisoning must be provided psychiatric consultation during their stay in the hospital and at the time of discharge. There is also an urgent need for strict implementation of the Pesticide Act, which regulates the import, manufacture, sale, transport, distribution and use of pesticides with a view to prevent risk to human beings and animals.

Prasad *et al*. (1997) reported that out of 171 cases hospitalized, housewives accounted for 25.84% followed by the students (17.41%) (Table 9)

**Table 9. Occupational Poisoning Cases**

| Occupation | Number | Percentage |
|---|---|---|
| Housewife | 46 | 25.84 |
| Student | 31 | 17.41 |
| Businessman | 5 | 2.80 |
| Farmer | 3 | 1.68 |
| Doctor | 1 | 0.56 |
| Labourer | 6 | 3.37 |
| Govt. employee | 8 | 4.49 |
| Unemployed | 2 | 0.11 |
| Not mentioned | 69 | 38.76 |

*Source: J. Inst. Med., Jan-Mar/Apr- Jun 1997*

## 10. Government initiative against pest outbreak, resistance, resurgence etc.

### 10.1 Pest outbreak

Insecticides are the first line of defense to protect food grains and vegetables from insects. On a worldwide basis, crops lost to pests are estimated to be about 35 percent. In Nepal, farmers use pesticides as a remedy for the outbreak of leap hopper, and bollworm in cotton, plant hopper in rice, army worm in maize, tuber moth in potato, aphids and scales insets in fruits, fruit flies in fruits and vegetables. Insecticides could rapidly bring large insect population under control with immediate knock down effect.

### 10.2 Secondary pest outbreak

In cotton, the number of sprays has been increased to ten to twelve in a crop season with an average of 8-10 L of insecticides application per hectare (Manandhar 2003). Because of frequent and overdose usage of insecticides with practice of cocktail sprays, a change in severity of certain insect was observed since 1987 with a clear departure from pink bollworm to American bollworm as a key pest (Manandhar 1997). The increased incidence of American bollworm was the secondary pest outbreak since 1987 and could be considered as an insecticide induced pest (Manandhar 1997).

Very little work has been done to find out the outbreak of pest in Nepal. To manage the outbreak of pest, Government Officials are advising the farmer not to apply high doses and highly toxic pesticides on the crops.

Neupane (1979) reported the outbreak of some of the major insect pests in Nepal (Table 9). Pokharel (2006) also reported that the White fly, *Aleurocybotus occiduus Maria* outbreak on main season rice in Chitawan valley in 2003.

Shreshtha (1990) reported the outbreak of some of the important diseases in vegetable in Nepal, which are given in Table 10.

Gundhibug, *Leptocorisa acuta* is regarded as the most serious insect pest of rice. It is serious in the early varieties of rice. Pesticides like metacid, endosulfan (thiodan) and cypermethrin are used to control it.

The hairy caterpillar, *Spilaractia casignata* is a serious polyphagous pest, which attacks several crop plants. It is very difficult to control this pest with any insecticides. Farmers apply deltamethrin and cypermethrin to manage this insect. Farmers also tried to kill them in boiling water.

Mustard saw fly, *Athalia proxima* is also a serious pest in mustard field. Farmers easily controlled it by using Metacid and Endosulphan.

*Pyrilla perpusilla* attacked sugarcane in all the sugar-cane growing areas of Nepal. Farmers practice to control them by using diemecron, metacid and endosulfan.

**Table 10. Outbreak of insect pests in different crops**

| Crop | Pest | Period of outbreak |
|---|---|---|
| Rice | *Dicladiapa armigera* | 1975 |
| | *Mythimna seprata* | 1974 |
| | *Leptocorisa acuta* | 1977 |
| | *Hieroglybhus banian* | 1988 |
| | *Nilaparvata lugens* | 1988, 1996 |
| Maize | *Mythimna separata* | 1973 |
| | *Heliothis sp.* | 1988 |
| Wheat | *Mythimna separata* | 1977 |
| Sugarcane | *Pyrilla perpusilla* | 1974 |
| | *Hieroglybhus banian* | 1988 |

**Table 11. Outbreak of diseases in vegetables**

| Sl. No. | Crops | Disease | Outbreak Period | Management practice |
|---|---|---|---|---|
| 1 | Cruciferae family | Alternaria leaf (*Alternaria brassicicola,A.brassicae*) | 1983 | -Selection of healthy seed and seedlings<br>-Sanitation practices<br>-Apply dithane M-45 and blitox-50 |
| 2 | | Sclerotina stalk (*sclerotinia sclerotiorum)* | 1981 | -Crop rotation<br>-Apply bavistin 0.1% |
| 3 | | Downy mildew (*Perenospora parasitica*) | 1983,1986 | -Sanitation<br>-Avoid dense planting<br>- Bavistin 0.1% seed treatment<br>- Apply dithane M-45 2 gm/l water |

| Sl. No. | Crops | Disease | Outbreak Period | Management practice |
|---|---|---|---|---|
| 4 | Tomato | Late blight (*Phytophtora infestans*) | 1965,1987 | -Seed treatment with bavistin 0.1%<br>-spray dithane M-45 ,2-3 gm/Blitox-50<br>-Spray metalyxis 2 gm |
| 5 | | Bacterial wilt (*Pseudomonas solanacearum*) | 1978,1988 | -Crop rotation with other family<br>-Plant healthy seedling<br>-Sanitation<br>-Resistant variety (CL-1131) |
| 6 | | Root knot nematode (*Meloidogyne incognita*) | 1967,1987 | Crop rotation with other family<br>-Deep plough in summer season<br>-Soil treatment with formaldehyde 5% solution |
| 7 | Brinjal | Phomopsis blight/fruit rot (*Phomopsos vexans*) | 1983,1988 | -Spray dithane M-45/ blitox-50<br>-Apply Brodeaux mixture 1% |
| 8 | Legumino us crops | Anthracnose disease (*Collectotrichum lindemuthianum*) | 1982 | -Disease free seed use<br>-Sanitation<br>-crop rotation 2-3 year<br>-Avoid dense planting<br>-seed treatment with dithane M-45<br>-Apply dithane M-45 |
| 9 | | Rust(*Uromyces phaseoli typical*) | 1978,1988 | -Sanitation<br>-Crop rotation 2-3 year<br>-Avoid dense planting<br>-seed treatment with bavistin 0.1%<br>-Apply bavistin 0.1%<br>-Dusting with sulfur and lime 1:2 ratio 2-3 time |
| 10 | | Powdery mildew (*Erysiphe polygoni*) | 1988 | -Sanitation<br>-Dusting with sulfur 15-20 kg/ha |
| 11 | Pumpkin | Powdery mildew (*Erysiphe cichoracearum*) | 1973,1979 | -sanitation<br>-Dusting with sulfur 20kg/ha<br>-Spray kerathen 1 ml/lit |
| 12 | Leafy vegetable | Alternaria Leaf spot ( *A. Brassicae, A. brassicola*) | 1988 | -Select Healthy seed<br>-Sanitation<br>-Seed treatment Dithane M-45 ,2-3/kg<br>-Spray Blitox,Dithane M-45 2-3 g/l |
| 13. | | Black rot | 1977, 1989 | -Select Healthy seed<br>-Sanitation |
| 14 | | Mosaic virus | 1983 | -Healthy seed<br>-Sanitation<br>-Aphid control apply malathion/metasistox. |

## 10.3 Pesticide resistance

In an attempt to achieve better or total pest control, resistance problems have increased because pesticides are applied more frequently and at higher dosage rates. These tactics have resulted in increased selection pressure. Naturally resistant individuals in a pest population are able to survive pesticide treatments. The survivors breed and pass on the resistance trait to their offspring. With each passing generation, the pest population becomes more difficult to control. Rice pests such as BPH and green leaf hoppers have developed high levels of resistance to pesticides. Pest resistance to chemical pesticides is major problems in Nepal as well and is increasing with the same pesticides as compared with earlier generations. Reducing pesticide use and alternating among classes of pesticides with different modes of action can help to lessen the possibility of pest resistance. Managing pest resistance is very important in helping to prolong the effective life of needed pesticides.

The pokhara strain of *H. armigera* collected from tomato field in 1994 showed moderate level of resistance to pyrethroids (53 to 56 folds), tolerance to endosulfan (three folds) and methomyl (two folds) and no resistance to monocrotophos and phosphorothionate. The pokhara strain showed five times (56 folds) higher level of resistance in 1994 as compared to 1993 [12 folds] in case of pyrethroids (Armes and pandey (1885). The Nepalganj strain of *arrmigera* collected from cotton field in 1995 showed much higher level of resistance to pyerthroids (103 to126 folds) moderately resistance to methomyl (11 folds) and tolerance to endosulfan (3 folds) and phosphorothionate (4 folds). The research results indicated that *H. armigera* developed high level of insecticide resistance particularly to synthetic pyrethroids within few years of its application (Manandhar, 2003). The resistance levels were probably driven by high selection pressure created by increased uses (frequent application and overdose) of insecticides.

By 1997, altogether 44 species of anopheles were recorded. Out of these, only 4 species were incriminated as the Vector of malaria in Nepal. Those 4 species are: *A. minimus, A. fluviatilis, A. annularis, A. dravidicus, A. willmori and A. pseudowillmori.* Among them, *A. annularis* has developed a high degree of resistance to DDT and dieldrin, which led to the adoption of malathion for its control in the Terai districts since 1976. Similarly the predominant species of mid-western region *A. subpictus, A. culcifacies,*and *A. vagus* were found to be resistant to DDT. *A. fluviatilis* also showed some level of tolerance to DDT (Rana 2001).

# 11. Past experience and present status of the use of ipm, natural enemies (predators and parasitoids) entomopathogenic microbes and fungi, insect sex pheromones, botanicals, bio pesticide, transgenic crops and indigenous knowledge in biological pest control

## 11.1 IPM in Nepal

In Nepal, a pilot programme on IPM in rice (after outbreak of BPH of early rice in Chitwan in 1996) was initiated based on season long Farmer Field School (FFS) approach in May 1997 through Technical Cooperation Programme (TCP) of Food and Agriculture Organization (FAO) of the United Nations under "Implementation of Integrated Pest Management in Rice" project (TCP/NEP/6712). This was followed by Nepal's participation in the FAO Regional Programme on Community IPM in Asia between 1998 and 2002 funded by the Government of Norway.

During the period, Nepal succeeded in training 104 officer level trainers for IPM in different crops, of which 70 were in rice, and 34 in vegetables. Similarly, 35 Junior Technicians (JT) and Junior Technical Assistants (JTAs) were trained as trainers. At the farmers' level, 301 farmers in 42 districts were trained as trainers. Among them, 56 were women trainers. Altogether, 633 different farmer field schools (FFSs) were organized involving 6,782 female and 9,684 male farmers.

Government succeeded in creating initial human resources to support IPM. Community IPM programme trained farmers and helped them to empower themselves to become experts in their own field by developing their ability to make critical and informed decisions rendering crop production system more productive, profitable and sustainable. This has led to the current situation where IPM is considered as the standard approach to crop husbandry and pest management in rice and vegetable production in Nepal. Subsequently, the government of Nepal incorporated IPM as an integral component of agricultural programme, which aims at achieving the poverty reduction goal through its development particularly focusing on farmer empowerment.

In view of the success of IPM in rice and increased demand for FFS in other high value crops, the Government of Nepal requested the Royal Norwegian Government for financial and technical support. The Government of the Kingdom of Norway in 2003 agreed to provide a grant to the Government of Nepal totalling US$ 1,284,444 to provide "Support to the National Integrated Pest Management (IPM) Programme (SNIMP)" in Nepal. The main objective of the programme was "To contribute to sustainable broad-based poverty reduction and food security while contributing to environmental protection". The specific objectives were: (i) To contribute to institutionalize a sustainable national IPM Programme in Nepal by strengthening the capacity of the PPD; and strengthening the capacity of National, Regional and District Level training and extension institutions, and (ii) To empower farmers to increase production and productivity efficiently, while protecting the environment. Then, Government of Nepal signed an agreement with the Food and Agriculture Organization of the United Nations to provide management assistance services under UTF/ NEP/055/NEP Project to implement the project.

The programme strategy is based on programme focus on past strength with major emphasis on “FFS”, “Farmer and Science”, networking and capacity building of farmers. It emphasizes on strengthening and broader dissemination of agro-ecosystem based crop management for sustainable production taking gender sensitization and mainstreaming. The programme also emphasizes capacity upgrading of IPM Facilitators, Technicians and Farmers. To achieve the stated objectives, programme focused on institutionalization of IPM activities within the existing extension networks, stressing quality implementation and adjustment of IPM activities through closer interaction among the stakeholders.

During this period, IPM programme extended to 69 districts and succeeded in training 77 officer and non-officer level trainers for IPM in different crops. At the farmers’ level, altogether, 662 FFSs (rice, vegetable and coffee), 45 Participatory Field Research under Farmer and Science on location and crop specific problems and 42 Pre- and Post harvest activities on cereal crops were organized.

At present, Government of Nepal and FAO/Nepal started IPM program: consolidation, upscaling and Institutional phase II in Nepal with the financial support of Royal Norwegian Government and technical support of FAO/Nepal for five years (2008-20013) periods. The development objective of II phase IPM program is to contribute to sustainable board-based poverty alleviation and food security while contributing to human health and environmental projection.

During the five years of the project, emphasis will be placed on putting in place all components of an Integated Pest Management, institutionalization of location specific market driven commodity following IPM principles as well as concentrate on the internalization of the program within Government and gradual phase out of the project support.

## 11.2 Biological control

Biological control is a natural control method, which indicates the use of control agents in which the active principles is living organisms or virus for regulating the incidence of pests. Biological control includes the use of parasites, predators, the sterile male method, micro-organisms and sex attraction.

The concept of use of bio-pesticide as a bio-control agent has recently emerged as a successful approach of pest management. Bio-pesticides are derived from animals, plants and micro-organisms such as bacteria and viruses. They are also known as third generation pesticides.

The commonly used bio-pesticides are *Bacillus thuriengiensis* (trade name: dipel, biolep), *baculoviruses*, neem, *trichograma*, *trichoderma* (an egg parasitoid), nuclear polyhedrosis, virus (NPV), Neem (margosom, econeem etc) etc.

## 11.3 Beneficial insects

Most farmers do not know the importance of natural enemies and also cannot identify them. Some times they kill our beneficial insects in the field.

Some of the beneficial insects, which are found in the field of Nepal are listed below.

| Sl. No. | Crop | Beneficial insects |
|---|---|---|
| 1 | Rice | Dragon fly, Damsel fly, Spider, Praying Mantidae, Tiger beetle (*Cicindela sexguttata*), Ground beelte (*Pasimachus deprassus*), Fire fly (Lamproporous spp), Mirid bug (*Cyrtorhinus lividipinnis*) |
| 2 | Maize | Praying Mantidae, Waps (*Cotesia ruficrus*) |
| 3 | Wheat | Spider |
| 4 | Potato | Tiger beetle (*Cicindela sexguttata*), Praying Mantidae, Fire fly (Lamproporous spp) |
| 5 | Oilseed | Lady bird beetle (*Coccinella septempuncata*), Tiger bettle (*Cicindela sexguttata*) |
| 6 | Beans | Lady bird beetle (*Coccinella septempuncata*), Tiger bettle (*Cicindela sexguttata*), Spider |
| 7 | Vegetable | Lady bird beetle (*Coccinella septempuncata*),Tiger bettle (*Cicindela sexguttata*), Spider, Praying Mantidae, Lace wing, Wasp (*Encarsia Formosa*) |
| 8 | Fruits | Lady bird beetle (*Coccinella septempuncata*),Tiger bettle (*Cicindela sexguttata*), Praying Mantidae, Hover flies (Syrphidae), Lace wing |
| 9 | Sugarcane | |
| 10 | Tea | Hover flies (Syrphidae) |

## 11.4 Botanical control

As most botanicals pose fairly lower toxicity than chemical pesticides and their residue do not pollute the environment Entomology Division, NARC (1994) made a preliminary screening of botanical insecticides against Maize grain weevil. Among a large group of reported plant species with insecticide properties 15 plant species were tested with celphos and malathion kept as standard check. Among the tested botanicals Bojho stem powder was seen as the most effective (95% dead weevils) followed by Eucalyptus leaf dust (78% dead weevils). Other botanicals significantly better than control treatment were Artemesia (Tite-pati) leaf powder, brassica (mustard) seed powder Acorus (Bojho) leaf powder, Azadirachta (neem) leaf, Litsea (Siltimbur) seed, Mentha spicata (pundina) and Lantana (Lantana) leaf also showed better control of weevil.

There is also a variety of natural botanical pesticides available to farmers. In the past, Nepalese farmers used these traditional methods of pest control and are still using them in hilly areas. Botanical pesticides are easy to grow and use and their costs are often minimal or free. Most botanical plants have low toxicity as compared to chemicals and their residues do not pollute the environment. The most common pesticidal value of Nepal's indigenous plants include *Allium sativum*

(insect repellent), a leaf extract of *Artemisia vulgaris* (for caterpillars & stored grain pests), *Urtica dioica* (stems and leaves for red ants and cutworms),

*Zanthoxylum armatum*'s fruit (insect repellent for: stored grain pests), *Acorus calamus* (insect repellent & contact poison) & *Chenopodium botrys* (insect repellent).

### 11.5 Plant species with pesticidal value found in Nepal

Nepal is rich in botanical diversity and there are many indigenous plants with pesticidal values. There is also a variety of natural botanical pesticides available in the farming community that could be alternatives to chemical pesticides for a variety of reasons. Such materials, however, may not attribute to the instant killing of pests but sufficiently induce the repealing, anti-feedant, or stomach effects to the varieties of pests. In many ways their use may be harmonized with the use of chemical pesticides, which may help in reducing the volume of chemical pesticides. The followings are some promising indigenous plant species found in Nepal having Pesticidal property.

| Sl. No. | Scientific Name | Common Name | Nepali Name |
|---|---|---|---|
| 1 | *Justicia adhatoda* | Malabar nut tree | Asuro |
| 2 | *Annona reticulate* | Custard apple | Ramphal |
| 3 | *Annona squamosa* | Sugar apple | Sitaphal |
| 4 | *Acorus calamus* | Sweet Flag | Bojho |
| 5 | *Ageratum conyzoides* | Goat weed | Gandhe |
| 6 | *Chrysanthemum spp.* | Pyrethrum | Godavari |
| 7 | *Tagetes spp.* | Marigold | Sayapatri |
| 8 | *Ricinus communis* | Castor bean | Andir |
| 9 | *Arachis hypoaea* | Ground nut | Badam |
| 10 | *Derris eliptica* | Derris | Deriu |
| 11 | *Azadirachta indica* | Neem Tree | Neem |
| 12 | *Melia azerach* | China Berry | Bakaino |
| 13 | *Piper nigrum* | Balck Berry | Marich |
| 14 | *Xanthxylum Spp.* | Xanthxylum | Timur |
| 15 | *Madhuca indica* | Mowra | Mahua |
| 16 | *Datura spp.* | Datura | Dhaturo |
| 17 | *Nicotiana spp.* | Tobacco | Surti |
| 18 | *Zingiber officinale* | Zinger | Adua |
| 19 | *Artenesia vulgaris* | Artemesia | Titepati |

## 12. Emerging issues and problems due to pesticides

### 12.1 Emerging problems

There are some issues and problems are raised during handling chemical pesticides in Nepal as:

- ❒ The majority of farmers being illiterate and ignorant of agrochemicals, have no clue to its proper handling and use. Farmers neither take precaution, nor do they protect themselves from pesticide poisoning. They have no knowledge of first aid and face the risk of pesticide poisoning.

- ❒ Knowingly or unknowingly, farmers do not care for the waiting period. Vegetables sprayed the day earlier are brought to the market the next day. Farmers have been advised to spray Dichlorovous (personal experience) for vegetable at about harvesting stage, and they have been advised to allow for a minimum waiting period of three days. It has been observed that while they follow the recommendation of spraying Dichlorovous, they do not pay particular attention to the waiting period.
- ❒ BPH (Brown plant hopper) occurrence in the Terai districts of eastern and central region is due to the high application of phorate, carbofuran and monochrotophos on rice crop.
- ❒ Pesticide poisoning is one of the commonest poisoning cases in Nepal. Organophosphates (methyl poralhion and dichlorovos) are the common cause of serious poisoning reported in hospitals. Zinc phosphate and aluminium phosphates have also been cited as major causes of poisoning. The Central Ohio Poison Centre has developed a poison prevention training programme called “Be poison and Smart” This programme is designed for professionals who are working with families with young children. At Ohio Poison Centre at Children’s Hospital, specialists receive an average of 200 poison exposed calls per day, more than half involve children under the age of five. These are mostly accident cases.
- ❒ Similarly pesticide poisoning effects have been reported by many farmers when interviewed during the study tour. Uneasiness, headache, burning skin, and vomiting were the general symptoms of health hazards experienced while applying pesticides on crops.
- ❒ The adverse effects of pesticide on crops such as burning of crop due to high dosage has been another common experience. Wrong choice of pesticide is common among farmers. To give an example, insecticides have been used for disease and fungicides for insects. This is due to ignorance, the same applies to dosage. Farmers follow the recommendations given by Agrovet rather than the technicians.
- ❒ Due to the open border with India, low-grade pesticides appear to have flooded the market. A survey done of pesticide dealers in some of the eastern districts and central districts (study districts), showed that the same dealer was also handling veterinary medicine, feed and pesticide in the same shop.
- ❒ Empty bottles of pesticides being used for other household purposes are common in villages. Such examples ultimately affect the user, consumer and environment. Agrochemicals and modern agriculture, in general, have contributed to a surplus of food. Even then, these chemicals if not properly used could prove fatal to the consumer, user and the environment. The Government of Nepal has put much effort to overcome these problems.

## 12.2 Incidental loss of life due to pesticide contamination

Pesticide contamination is increasing due to negligence and ignorance and in some cases intentional. And this has caused loss of life of human, wild animals, fishes and most commonly honey bees.

- Local residents of Palpa district reported that in June 2004, a 42 yrs old man who went for fishing in stream died while drinking water of Tinau stream. It was speculated that some one must have used insecticide at the upper level of the stream for killing fishes. It is learnt that it has been a usual practice to use insecticide for killing fishes in the route of Dumre to Dovan of Tinau stream.

- In 1990, some poachers used pesticides in Narayani river and killed most precious four one-horned rhinos (Kendal and Mainali 1993).
- Large no. of fishes were found dead due to misuse of pesticides and were found floating in Bargandi river near Lalpa district (Kandel and Mainali 1993).
- Record reveals that many people became sick while consuming fishes contaminated with pesticides near Bagmati and Rapti rivers.
- It is learnt that the level of fish population has been considerably reduced in Sunkoshi and Indrawati rivers due to ill practices of using insecticides and electric current for killing fishes. The local residents reported that Sunkoshi and Indrawati rivers are one of the well known rivers for availability of local species of fishes in ample quantities.
- Due to heavy use of pesticides, all colonies of domesticated bees were wiped out in Illam and nuwakot districts and many colonies were destroyed in Chitwan districts
- Many honey bees colonies were destroyed due to insecticide poisoning at Khumaltar, Lalitpur (Entomology Division 1997).
- In the winter season of 2005, the beekeepers of Pragatinagar Devchuli, Nawalparasi district suffered a heavy loss of almost 264 colonies of domesticated bees that amounts nearly twenty lakhs due to insecticide poisoning that was used in mustard field.

## 12.3 Stock of date expired pesticides and disposal activities in Nepal

An inventory of date expired pesticides was taken in 1990. The original figure of 180 m.tons estimated by Agriculture Inputs Corporation (AIC) was later reduced to approximately 150 m.tons by Asian Development Bank (ADB) Pesticides Disposal Expert (PDE). Through the efforts of AIC and PDE, some 114 m.tons were disposed comprising of 16 m.tons reused, 23 m.tons reformulated and 74.50 m.tons by land spreading or burying (SEA 1998). Of the 74.50 m.tons, almost 43 m.tons of dry and liquid formulations of toxic non-chlorinated insecticides and a fumigant (Aluminium phosphide) were buried at three sites (Amlekhganj, Bhairahawa, Nepalgunj) and some 39 m.tons of phenoxy herbicide granules and fungicide wettable powders were disposed of by broadcasting over the land at three sites. The PDE considered remaining 36 m.tons of organochlorine insecticides to be disposed through incineration at the Hetauda Cement Factory. However, this operation could not be completed due to protest by local community and environmental journalists. So this stock was stored at AIC warehouse, Amlekhganj. Additional amounts were added over the years by AIC, which later on totals to about 50.9 m.tons at AIC warehouse Amlekhganj alone. Data of date expired pesticides at other warehouse Amlekhganj alone and those at other warehouses were also collected. As of July 2002, the total amount reported was 74.165 m.tons+ 43 cylinders of methyl bromide.

Later in the year 2004, an extensive operation was carried out to verify and prepare the detail inventory of date expired pesticides (Annex V). As of May 2005, an updated amount of data of expired and obsolete pesticides is 74.265 m.tons + 43 cylinders of methyl bromide, each cylinder contains about 50 kg methyl bromide (Manandhar 2005). Most of the stocks have accumulated over a long period of time (more than three decades) and a substantial part of the stocks came under aid/ grant system. The stock is stored in warehouses/ stores at 24 locations. Most of the warehouses are located in urban and residential areas and some even just in front of the school where almost 800 students are studying. At most locations, the storage situation is the worst. Nearly one third of the stocks are left as such in the warehouse and need safe packaging. Moreover, the stock is posing a serious threat to human health and environment.

## 13. Suggestion and recommendations especially on possibilities on work sharing

Authorities have realized that use of pesticide is low from a national perspective. Nevertheless misuse/overuse in these areas has caused environmental pollution, and serious concerns over consumer health. To cope with these emerging problems the Government of Nepal had strategically introduced:

- The Pesticide Act 1991 and the Pesticide Rules 1993;
- The Plant Protection Act 1972 and the Plant Protection Rules 1975;
- The Environment Protection Act 1996 and Environment Protection Rules 1997;
- IPM as a strategy of Pest Control.

The Government of Nepal has already endorsed IPM as the pest control strategy and has launched IPM in different commodity such as rice, vegetables and recently in high value crops like citrus, apple, tea and coffee at national level. Hence there is no problem at policy level for its implementation. It has also been clear that the impact of IPM socially, economically and also ecologically has already proved viable in Nepal. There is also no question of its sustainability. To minimize the chemical pesticides IPM play important role in Neplease context.

Nepal is utilizing only 142 gram pesticides per hectare, which is significantly low as compared to other countries. However, the easy availability of pesticides in the market and the rapid privatization has the potential to fuel over use and misuse of pesticides, and adverse impact on the environment and ecological equilibrium. Farmers are using high dose and amount of pesticides in some crops like vegetables, cotton and tea. Therefore, our concern should go to minimize pesticides in those areas. Agrovets are the main source who recommend and advised to apply the pesticides to the farmers in Nepal. Therefore, our efforts should go to train the Agrovets for judicious and safe use of pesticides.

Nepali farmers make maximum use of pesticide called organophosphate that falls under poisonous category and has been largely misused. It is strongly recommended that the sale and purchase of such toxic and environmentally hazardous chemicals should be regulated by the concerned authorities, and only through authorized agents.

One of the primary objectives for managing and controlling pesticides is to ensure that the product is effective for the control of the target pest while causing little or no deleterious effect to man, non-target organisms and the environment as a whole. Like the other regions, this region has been using many environment unfriendly chemicals and processes, which has led to the pesticide problem. Government policies still favor pesticides and high subsidies exist, while newer IPM products are taxed at high rates. The government should foster IPM by removing subsidies on the least desirable pesticides while removing taxes from IPM products. These economic incentives would go a long way in changing the practices of farmers. This recommendation is in line with recent changes in government policy where IPM methods are to be preferred over pesticide usage. Pesticides should only be supplied that meet international standards of quality and are packaged and labeled as appropriate in the line with the code of conduct that is adequate for farmers to ensure safe and effective use. Alternatives should be safe and effective and new technologies should be provided at affordable cost. People of LD countries need to encourage and promote the development of indigenous technology and traditional method of the plant diseases, insect pest control and vector borne diseases control at national and regional level. Keeping in view the problem of residue of pesticides in different components including food items, the Government should educate and advocate an IPM and the methods don't go for demonstration only but validation on large scale. Effective registration, licensing, quality control, food residue analysis and enforcement of other measures including monitoring and testing will be needed. In Nepal, it is high time to develop Chemical Safety Programmers - risk management strategies and know-how for coping with chemical accidents and set up of a Central Authority for chemical safety management of toxic chemicals, and

Government needs to promote awareness of responsibilities under the Code of Conduct on Pesticides and relevant FAO Guidelines, and should implement international agreements regulating trade and use of hazardous chemicals and upgrade facilities for chemical analysis.

The use of banned or restricted pesticide cannot be prevented effectively because of illegal trans-boundary movement of pesticides. There is little or no information on such illegal movements regarding the name, quantities of chemicals sold. Therefore, it is urgent need for co-ordination and cooperation among and between countries within the same regions of SAARC.

Regulated management of current pesticide import and use should strictly implemented and preference should be given to least toxic, non persistent pesticides and ecological pest management (biological control) through manipulation of one or more natural factors so that crops are protected without upsetting the rest of the ecosystem or jeopardizing environmental and human health should be promoted.

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# 15. Appendixes

**Appendix 1**

***Pesticide Act, 1991***

**Preamble**

*Whereas it is expedient to have a provision with regard to import, export, production, marketing and use of pesticides meant for killing the harmful pests that appear in various seeds, plants, trees, animals, fowls etc.*

Now, therefore, His Majesty the King Birendra Bir Bikram Shah Dev has promulgated this Act on the advice and consent of Council of Ministers as per Article 129 of the Constitution of kingdom of Nepal, 2047 (1990).

**Short Title and Commencement :**

(i) This Act shall be called "Pesticides Act, 2048".

(ii This Act shall come into force in the areas and from the date at prescribed by His Majesty's Government by issuing a notification on Nepal Rajpatra (Gazette).

**Definition:** Unless otherwise indicated, in this Act.

(a) "Pesticides" shall mean the poisonous medicines (pesticides) used for killing or destroying the harmful pests that appear in seeds, plants, trees, animals, fowls etc.

(b) "Committee" shall mean the Pesticide Committee formed as prescribed under section 3 of this Act.

(c) "Listed Pesticides" shall mean those pesticides listed by His Majesty's Government through a notification as per section 10 of this Act.

(d) "Prescribed" or "As prescribed" shall mean facts prescribed or as prescribed under this Act.

**Formation of Pesticides Committee :**

(1) In order to provide counseling to His Majesty's Government with regard to formulation of national policy for pesticides and its implementation, a Pesticide Committee shall be formed.

(2) The Committee shall comprise of the following members :

| | |
|---|---|
| Secretary, Ministry of Agriculture and cooperatives | chairperson |
| Joint Secretary, Ministry of Population and Environment | member |
| Director General, Department of Agriculture | member |
| Director General, Nepal Bureau of Standards and Metrology | member |
| Executive Director, Nepal Agriculture Research Council | member |
| Chief, Epidemiology and disease control division, Department of Health Service | member |
| Agriculture Scientist nominated by His Majesty's Government Nepal | member |
| Program Director, Industrial Entomology Directorate, DOA | member |
| Animal Scientist, nominated by HMG/N | member |
| Forest Scientist, nominated by HMG/N | member |
| Pesticide Entrepreneur, nominated by HMG/N | member |
| User farmer, nominated by HMG/N | member |

| | |
|---|---|
| Chief, Food quality control Division, Department of Food Technology and quality control member | member |
| Chief, Plant Pathology Division, NARC | member |
| Chief, Entomology Division, NARC | member |
| One Person designated by HMG/N | member-secretary |

(3) The Tenure of office for the members nominated by His Majesty's Government as per (g), (i), (j), (k), and (l) under sub-section (2), shall be of 2 years, but they shall be eligible for renomination.

(4) Notwithstanding the facts mentioned under sub-section (3) above, the members nominated by His Majesty's Government as per (g), (i), (j), (k) and (l) under Sub-section (2) may be separated from the membership by His Majesty's Government prior to expiry of their tenure of office.

(5) His Majesty's Government shall hold the authority of making necessary alterations or changes for the committee members by issuing notification in Nepal Rajpatra (Gazette), if it deems necessary to do so.

(6) The committee may invite any national or foreign specialist or advisor to attend the Committee meeting as observers, if it deems necessary to do so.

**Committee Meetings and Decisions** :

(1) The Committee meetings shall be held on the day time and venue as prescribed by the Chairperson of the Committee.

(2) The attendance of fifty percent of the total number of Committee members shall be considered to be adequate quorum to hold the meeting.

(3) The Committee meeting shall be presided over by the Chairperson. In the absence of the Committee Chairperson, it shall be presided over by one of the Committee members selected from among the members present in the meeting.

(4) The opinion expressed by the majority shall be acceptable to the Committee and in case of a tie, the Chairperson of the meeting shall cast the deciding vote.

(5) The decision of the meeting shall be attested by the Member-Secretary of the Committee.

(6) Other working procedures of the Committee meeting shall be as determined by the Committee itself.

**Functions, Duties and Responsibilities of the Committee :** The functions, duties and responsibilities of the Committee shall be as follows :

(a) To advise His Majesty's Government on formulation of a national policy for pesticides.

(b) To establish coordination between public and private sectors on production and distribution of pesticides.

(c) To encourage the private sector for investment on pesticide industry.

(d) To regularize or control the quality standard of the pesticides produced by pesticides industries operated under both private and public sectors.

(e) To determine the quality standard of pesticides.

**Provision for Formation of Sub-committees :**

(1) In order to carry out import, export, production and marketing of pesticides, the Committee may form various Sub-Committees, as and when required.

(2) The functions, duties and responsibilities of the Sub-committees and procedures for holding the meeting shall be as prescribed.

**Establishment of the Pesticides Registration Agency :** His Majesty's Government, on publication of a notification on Nepal Rajpatra (Gazette), May establish a Pesticides Registration Agency for registering the pesticides.

**Functions, Duties and Responsibilities of the Pesticides Registration Agency :**

(1) The functions, duties and responsibilities of the Pesticides Registration Agency shall be as follows :

(a) To register appropriate pesticides and issue certificates after having scrutinised the applications submitted to get the pesticides registered.

(b) To prepare necessary guidelines for effective, thoughtful and proper use of pesticides.

(2) Other functions, duties, responsibilities and procedures for registering the pesticides shall be as prescribed.

**Certificate to be obtained after getting the pesticides registered :** An individual, organisation or agency should obtain the certificate after getting the pesticides registered, on payment of prescribed fee to the Agency, prior to carrying out import, export, production, utilization and marketing of pesticides.

**Listed Pesticides :** The name of pesticides registered as per section 9 above shall be listed and published in Nepal Rajpatra (Gazette) by His Majesty's Government on recommendation of the Committee.

**Restriction to use the pesticides other than the ones listed:** There shall be restrictions on the import, export, production, use, purchase or sale of any pesticide other than those listed by His Majesty's Government as per section 10 above.

**License to be obtained:** It shall be necessary to obtain license from the Committee on payment of the prescribed fee by an individual for formulation, marketing or professional use of listed pesticides.

**Appointment of Pesticide Inspector :** To meet the purpose of this Act, His Majesty's Government may appoint Pesticides Inspectors as the when required. In the event that any such Inspector has not been appointed His Majesty's Government may delegate any other staff to carry out the responsibility of a Pesticides Inspector.

**Functions. Duties and Responsibilities of the Pesticides Inspector:** The functions, duties and responsibilities of the Pesticides Inspector shall be as prescribed.

**Punishment :**

(1) Anyone violating the regulations laid down in section 9 above shall be liable to be fined upto two thousand rupees with confiscation of the concerned pesticides.

(2) Anyone violating the regulations laid down in Sections 11 or 12 above shall be liable to be fined upto five thousand rupees with confiscation of the concerned pesticides.

(3) Except as indicated in sub-section (1) and (2) above, anyone directly or indirectly involved in violating the regulations laid down in this Act or subsequent regulations formulated in connection with this Act, shall be liable to be fined upto one thousand rupees.

**Government to be plaintiff :** His Majesty's Government shall be the plaintiff to any legal case relevant to this Act.

**Investigation and suing the case :**

(1) The Pesticides Inspector shall make necessary investigations with regard to cases of offense liable to be punished under this Act and shall submit the case to the concerned official on completion of the investigations.

(2) While investigating and suing the cases as mentioned in sub-section (1) above, the Pesticides Inspector may seek the advice of the prosecuting attorney.

**Authority to formulate regulations:**

His Majesty's Government may formulate necessary regulations in order to execute the objectives of this Act.

## The Pesticides Rules, 1994 (Revised 2007)

In exercise of the powers conferred by section 18 of the pesticides act, 2048(1991), Nepal Government has framed the following rules:

**1. Short title and commencement:**

1. These rules may be called the "Pesticides Rules,1994 ( Revised 2007)
2. These rules shall come into force from the date on which the act shall come into force.

**2. Definitions:** Unless the subject or context otherwise requires, in these Rules :

(a) "Act" means the pesticides act, 2048(1991)

(b) "Office" means the office established by Government of Nepal.

(c) "Container" means a utensil or box or pouch to be used to contain, cover, seal, include or pack the pesticides.

(d) "Label" means information on the pesticides written, printed or drawn by line on the pesticides or on the container keeping the pesticides or on the outer part of such container or on the pouch of pesticides.

(e) "Inspector" means the pesticide inspector appointed pursuant of Section 13 of the Act.

**3. To submit application for pesticide registration:**

1. Persons/institutions or bodies intending to import, export produce any pesticides, before carrying our such business, shall have to submit an application to an officein such a form as prescribed by the committee along with one thousand rupees as the registration fee for getting registered such pesticides under Section 9 of the Act.
2. The persons, institutions or bodies submitting the application in order to get registered the pesticides pursuant to sub-rule(1) above, shall have to furnish necessary technical and other information related with the pesticides as required by the office in connection with the registration.

**4. To register the pesticides:**

1. If an application is made in order to register the pesticides pursuant to Rule 3above, the office shall, after making necessary enquiries thereabout and taking into consideration the effect to be caused on human beings, animals, birds and environment from such pesticides,register the pesticides with or without imposing any condition and grant to the applicant the pesticide registration certificate in such a form as prescribed by the committee.
2. The pesticide registration certificate granted under sub-rule (1) above, shall be valid for a period of five years.
3. Notwithstanding anything contained in sub-rule (1) above, the office shall not register the pesticide, unless and until it receive the data related with the pesticides as required by it from the applicants in regard to the registration of such pesticides.

**5. Denial of registering the pesticide:**

1. In case the applicant, who submits an application for getting registered any pesticide,fails to prove the utility of such pesticide in the Kingdom of Nepal or, the office is of the opinion that the use of such pesticide is likely to cause adverse effect on human beings, animals, birds or environment, the office may, by assigning the reason there of, deny to register such pesticide.
2. If the office denies to register any pesticide pursuant to sub-rule (1) above, a notice accompanied with the reason there of shall be given to the applicant.
3. The applicant who receives the notice pursuant to sub-rule (2) above , may file a petition in writing before the committee to review such decision, and the decision made by the committee in regard to such petition shall be final.

**6. The pesticides registration may be cancelled or suspended:**

If the committee is of the opinion that the continual use of the pesticide registered pursuant to Rule 4 above, is prove to be ineffective or even the general use of such pesticide is likely to cause adverse effects on human beings or birds and animals or environment, the committee may at any time, cancel the registration of such pesticide or suspend the registration for any specific period of time. Anotice of such cancellation or suspension shall be published in the Nepal Gazette.

**7. To furnish particulars of pesticide import:**

1. Every person, institution or body having obtained a license to import the pesticide shall have to furnish to the office the particulars of the pesticides imported within a fiscal year, describing the quantity and price thereof, in such a form as prescribed by the committee within three months from the end of each fiscal year, or earlier to that time if so required by the committee.
2. In case the importer fails to furnish the particulars of import pursuant to sub-rule (1) above, the committee may, on the recommendation of the office cancel the registration of such pesticides.

**8. Approval of container and label:**

1. Any person, institution or body intending to sell and distribute any pesticide shall have to submit an application to the office in such a form as prescribed by the committee, along with the sample of container and label., for obtaining the approval of such container and label.

2. If any application is submitted pursuant to sub-rule (1) above, the office shall approve the container and label, after confirming whether the container is in compliance with the standards fixed by the committee and whether the label has contained all information to be contained or not.

**9. Not to sell and distribute:**

1. No pesticides imported for the purpose of scientific use or research shall be sold or distributed.
2. No pesticide shall be sold or distributed without keeping it in the container approved by the office.
3. No pesticide shall be sold or distributed by keeping it in the container upon which the label as approved by the office is not affixed.

**10. To obtain license:**

Any person, institution or body intending to carry out the business of selling formulating or spraying the pesticides shall have to obtain a license from the committee.

**11. Application to be submitted for the license:**

Any person, institution or body intending to obtain a license under Rule 10 above, shall have to submit to the committee an application in such a form as prescribed by the committee, along with fifty rupees for the pesticide retailer, five thousands rupees for pesticide spraying entrepreneur and ten thousands rupees for pesticide formulator the license fee.

**12. To grant license to pesticide retailer**

1. If any person , institution or body submits to the committee an application pursuant to Rule 11 above, for obtaining a license to retail the pesticide, the committee may, subject to the standards fixed by it in regard to pesticides and knowledge of its use, if it deems fit to grant a license after making necessary enquiries in this regard, grant a retailer license in such a form as prescribed by the committee.
2. The pesticide retailer shall have to abide by the terms and conditions specified in the license.

**13. To grant license to pesticide spraying entrepreneur:**

1. If any person, institution or body submits to the committee an application pursuant to Rule 11 above, for obtaining a license to spray the pesticides for the commercial purpose, the committee may, subject to the standards fixed by it in regard to the use of the pesticides, if it deems fit to grant a license after making necessary enquiries in this regard, grant a license of the pesticide spraying entrepreneur in such a form as prescribed by the committee.
2. The pesticide spraying entrepreneur shall have to abide by the terms and conditions specified in the license.

**14. To grant license to pesticide formulator**

1. If any person , institution or body submits to the committee an application pursuant to Rule 11 above, for obtaining a license to formulate the pesticides, the committee may, subject to the standards fixed by it in regard to the formulations of the pesticides, if it deems fit to grant a license after making necessary enquiries in this regard, grant a license to the person formulating the pesticides in such a form as prescribed by the committee.
2. The person formulating the pesticides shall have to abide by the terms and conditions specified in the license.

**15. The validity period of license and its renewal**

1. The validity period of license granted under Rules 12,13,or 14 above shall be of three years.
2. The license shall be required to have renewed by submitting an application for this purpose upon payment of the renewal fee two hundreds rupees for pesticide retailer, one thousand rupess for pesticide entrepreneur and two thousands rupees for pesticide formulator required for obtaining the license, within 35 days after the termination of validity period of license under sub-rule (1) above. If the license is not renewed it shall ipsofacto be invalid.
3. The license shall be required to have renewed by submitting an application for this purpose upon payment of the renewal fee add more two hundreds rupees for pesticide retailer, add more one thousand five hundreds for pesticide entrepreneur and add more three thousand rupees for pesticide formulators, required for obtaining the license, within 30 days after the termination of validity period of license under sub-rule (2) above shall be for two years.
4. The license shall ipsofacto be invalid under sub-rule (3) above if the license is not renewed.

**16. To revoke license :**

If it is found that the person, institution or body having obtained a license under Rules 12,13 or 14, has not fulfilled the terms to be observed by them, the committee may revoke the license obtained by such person, institution or body.

**17. Pesticide inspectors to be provided with identity cards:**

1. Nepal government shall provide the pesticide inspectors, being appointed pursuant to Section 13 of the act, with the personnel identity cards for their identification.
2. If any person requires the inspector to show his identity card, in performing his duties or exercising his powers under the Act or these Rules, the inspector shall show the identity card obtained by him pursuant to sub rule (1) above.

**18. Power, function and duty of the inspector**

1. The inspector may in course of performing his duty, enter into any building, land, vehicle, aircraft, factory, commercial centre, storage, shed etc. at any time and may investigate or inspect any documents or records.
2. If anyone sells or imports the pesticides in contravention of the provision of the Act and these Rules, the inspector may take such pesticides in his custody.

**19. Functions, duties and powers and procedures of the meetings of sub-committee:**

1. The functions, duties and powers of sub-committees constituted under Sub-Section (1) of Section 6 of the Act shall be as follows:-
    a. To provide necessary advice to the committee for properly carrying out the works of importing, exporting, producing and selling and distributing the pesticides.
    b. To perform such other functions as may be prescribed by the committee for properly carrying out the works of importing exporting, producing and selling and distributing the pesticides.
2. The procedures of the meetings of the sub-committees shall be as prescribed by the committee.

**20. To make and implement the directives :**

In order to efficiently implement the Act and these Rules, the committee may frame and issue the directives, as per necessity, in regard to the matters related with the pesticides; and it shall be the duty of all concerned to observe the directives so issued.

**Appendix 2**

**Persons engaged/involved in Pesticide related activities with their mailing address and contact numbers**:

Mr. Dilli Ram Sharma, Senior Plant Protection Officer, RPPL, Hariharbhaan, Kathmandu,

sharmadilli@yahoo.com

Mr. Dhrub Narayan Manandhar, Pesticide Expert.

Mr. Bhakta Raj Palikhe. Entomologist, Sericulture Development Division, DoA, Khopasi,Kavre

Mr. B.P Upadhaya, CEAPRED, Kathmandu.

Dr. Samundra L. Joshi, Entomologist, Plant Protection Society, Harihar Bhawan Nepal

Mr. B.K. Gywali. Entomologist Plant Protection Society, Harihar Bhawan Nepal

Dr. Sribaba Pradhan, Senior Entomologist, Entomology Division, NARC, Khumaltar.Nepal

Dr. Raju Raj Pandey, Entomologist, Plant Protection Society, Harihar Bhawan, Nepal

Prof. Dr. F.P. Neupane, Entomologist, Plant Protection Society, Harihar Bhawan, Nepal

Prof. Dr. Resham Bahadur Thapa, IAAS, Rampur Chitawan, Nepal

Mr. Ram Charitra Sah, Centre for Public Health and Environmental Development (CEPHED)

**Appendix 3**

**Major crops and their pest in Nepal**

| Major Crops | Common Name | Scientific Name |
|---|---|---|
| **Cereal Crops** | | |
| Rice | White Tip | *Aphelenchoides besseyi* |
| | Seedling Blight | *Drechslera oryzae* |
| | Foot Rot | *Fusarium Moniliformes* |
| | Grasshopper | *Heirieoglyphus banian, Heirieoglyphus forcifer* |
| | Brown Leaf Spot | *Helminthosporium Oryzae* |
| | Rice Hispa | *Hispa armigera* |
| | Rice Bug | *Leptocorsia varicornis* |
| | Rice Leaf Hopper | *Nephotettix bipunctatus* |
| | Glume Blight | *Phoma sorghina* |
| | Blast | *Pyiricularia oryzae* |
| | Sheath Blight | *Rhizoctonia solani* |

| Major Crops | Common Name | Scientific Name |
|---|---|---|
| | Sheath Rot | *Sarocladium oryzae* |
| | Rice stem Borer | *Schoenobius incertellus* |
| | Stem Rot | *Sclerotium oryzae* |
| | Rice weevil | *Sitophilus oryzae, Calandra oryzae* |
| | Swarming Caterpillar | *Spodoptera mauritia* |
| | False Smut | *Ustilagonaidae virens* |
| | Bacterial Blight | *Xanthomonas campestris pv. oryzae* |
| | Bacterial Leaf Streak | *Xanthomonas translucens* |
| Wheat | Ear Cockle Disease | *Anguina tritici* |
| | Powdery Mildew | *Erysiphe graminis tritici* |
| | Karnal Bunt of Wheat | *Neovossia indica* |
| | Stem Borer | *Nonagriauniformis* |
| | Yellow Rust | *Puccinia glumarum* |
| | Black or Stem Rust | *Puccinia graminis* |
| | Brown Rust | *Puccinia recondite* |
| | Bunt or Stinking Smut | *Tilletia caries, Tilletia foetans, Tilletia indica* |
| | Flag Smut of Wheat | *Urocystis tritici* |
| | Loose Smut of Wheat | *Ustilago nuda, Ustilago tritici* |
| Maize | Stalk Rot of Maize | *Erwinia carotovora* |
| | Downey Mildew | *Sclerospora sacchari, S. rayssiae, S. macrospora, S. phillipinensis, S. sorghi, ravassiae* |
| | Seed and Seedling Blight | |
| | Cob Rot | *Fusarium monaliforme* |
| | Wilt | *Fusarium monaliforme* |
| | Southern Leaf Blight | *Helminthosporium maydis* |
| | Brown Spot | *Physoderma maydis* |
| | Smuts | *Ustilago maydis* |
| | Head Smut | *Sphacelothaca railiana* |
| | Common Smut | *Puccinia sp.* |
| Sorghum | Ear Head Bug | *Calcoris augustatus* |
| | Mite | *Paratetranychus indicus* |
| | Stem Borer | *Chilo zonellus* |
| Finger Millet | Blast | *Pyricularia spp.* |
| | Seedling Blight and Foot Rot | *Helminthosporium nodulosum* |
| | Wilt | *Sclerotium rolfsii* |

| Major Crops | Common Name | Scientific Name |
|---|---|---|
| **Tuber Crops** | | |
| Potato | Soft Rot and Black leg | *Erwinia carotovora, Bacillus clostridium, B. mesentrichus, E. Roidae* |
| | Late Blight | *Phytophthora infestans* |
| | Potato Wart | *Synchytricum endobioticum* |
| | Brown Ring Rot | *Pseudomonas solanacearum* |
| | Early Blight | *Alternaria solani* |
| | Potato tuber moth | *Pthorimaea operculella* |
| | | |
| **Fruits** | | |
| Apple | San Jose Scale | *Quadraspidiotus perniciosus* |
| | Wooly Aphis | *Eriosoma lanigerum* |
| | Codling Moth | *Laspeyresla pomonella* |
| | Sooty Blotch and Fly Speck | *Leptothyrium pomi* |
| | Pink Disease | *Pellicularia salmonicolor* |
| | Rot | *Phytophthora cactorum* |
| Citrus | Stem Borer | *Arbela tetraonis* |
| | Stem Borer | *Chloridolum alcamene* |
| | Pink Disease | *Corticium salmonicolour* |
| | Citrus Psylla | *Diaphorina citri* |
| | Trunk Borer | *Monohammus versteegi* |
| | Pumpkin Bug | *Nezara Viridula* |
| | Citrus Fruit Sucking Moth | *Ophideres sp.* |
| | Lemon Caterpillar | *Papilio demolens* |
| | Citrus Leaf Miner | *Phylloenistes citrella* |
| | Greening (Huanglongbing) | *Candidatus Liberibacter asiaticus.* |
| | Citrus Canker | *Xanthomonas citri* |
| Mango | Black Spot | *Bacillus magniferae* |
| | Brown Rot | *Physalospora perseae* |
| | Die-back | *Botryosphaeria ribis* |
| | Fruit Anthracnose | *Colletotrichum gloeosporiodes* |
| | Fruit Fly | *Chaetodacus incisus* |
| | Hopper | *Idocerus niveosparsus* |
| | | |

| Major Crops | Common Name | Scientific Name |
|---|---|---|
| **Vegetables** | | |
| Major Vegetables | Virus | Yellow Vein Mosaic virus) |
| | Diamond Back Moth | Plutella xylostella |
| | Borer | Helicoverpa armigera) |
| | Aphid | *Myzus persicae, Aphis gossypii, Lipaphis erysimi* |
| | Shoot and fruit borer | *Leucinode orbonalis* |
| | Caterpillar | *Spodoptera litura* |
| | Cabbage butterfly | *Pieris brassicae* |
| | Fruit fly | *Bactrocera cucurbitae* |
| | Club root | *Plasmodiophora brassicae* |
| | Alternaria Leaf spot | *Alternaria spp.* |
| | Powdery mildew | *Erysiphe spp.* |
| | Damping off | *Pythium spp.* |
| | Wilt | *Psuedomonas spp., Pythium spp.* |
| | | |
| **Plantion Crops** | | |
| Coffee | Leaf rust | *Hemileia vastatrix* |
| | Pink rot | *Corticium salmonicolor* |
| | Collar rot | *Rhizoctonia solani* |
| | White stem borer | *Xylotrechus quadripes* |
| | Coffee berry borer | *Hypothenemus hempel* |
| | Green scale | *Coccus viridis* |
| Tea | Red spider mite | *Oligonychus coffeae* |
| | Tea mosquito | *Helopeltis theivora* |
| | Blister blight | |

# Part - V

## Pesticide Information of Pakistan

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# 1. Introduction

## 1.1 Pakistan Agriculture

Inspite of structural shift towards industrialization, agriculture sector is still the largest sector of the economy of Pakistan with the deep impact on socio-economic set up. It is the source of the livelihood of almost 44.7 percent of the total employed labour force in Pakistan. With the present contribution to GDP at 21.8 percent, agriculture sector is the main stay of the rural economy around which socio-economic privileges and deprivations revolve. Thus given for its stretched distinct forward and backward linkages particularly with industrial sector, a large impact on balance of payment and the highest share in employment, agriculture sector has assumed an added significance in backdrop of global food crunch and food security. No strategy of economic reforms can be realized in Pakistan without sustained and broad based agricultural development, which is critical for raising living standards, alleviating poverty, assuring food security, generating buoyant market for expansion of industry and services, and making substantial contribution to the national economic growth of Pakistan.

Agriculture has grown at an average rate of 4.1 percent per annum since 2002-03 with variation from 6.5 percent to 1.1 percent. The fluctuation in agriculture has largely stemmed from a fluctuation in major crops, which in turn, is the result of the behaviour of Mother Nature and pest attack on crops.

The performance of agriculture sector has been stronger than expected during 2008-09 as against the target of 3.5 percent and last year's performance of 1.1 percent. Overall agriculture this year is estimated to grow by 4.7 percent due to bumper production of wheat, rice, and maize crops estimated at 23.42, 6.9 and 4.0 million tons respectively. Hence major crops accounting for 33.4 percent of agricultural value added registered stellar growth of 7.7 percent as against negative 6.4 percent last year. Minor crops contributing 12.0 percent to overall agriculture grew by 3.6 percent as against 10.9 percent last year. The performance of livestock-the single largest contributor to overall agriculture (51.8 percent) grew by 3.7 percent in 2008-09 as against 4.2 percent last year. The fisheries sub-sector performed positively at 2.3 percent through the previous year's growth stood at 9.2 percent. Forestry has been experiencing negative growth since 2003-04 and this year too has posted negative growth of 15.7 percent in a row.

Pakistan's agricultural output is closely linked with the supply of irrigation water. As against the normal surface water availability at canal heads of 103.5 million acre feet (MAF), the overall (both for Kharif and Rabi) water availability has been less in the range of 2.5 percent (2005-06) to 20.6 percent (2004-05) against the normal availability. Relatively speaking, Rabi season faced more shortage of water than Kharif during these years.

During the current fiscal year (2008-09), the availability of water for Kharif 2008 (for the crops such as rice, sugarcane and cotton) has been 0.3 percent less than the normal supplies and 5.5 percent less than last year's Kharif. The Water availability during Rabi season (for major crop such as wheat) is, however, estimated at 24.9 MAF, which is 31.6 percent less than the normal availability and 10.7 percent less than last year's Rabi.

The domestic production of fertilizers during the first nine months (July-March 2008-09) of the current fiscal year was up by 3.6 percent as compared with corresponding period of last year. On the other hand, the import of fertilizers decreased by 51 percent, the total availability of fertilizers also decreased by 11.9 percent during the same period last year. Agricultural loans amounting to PKRs.151.9 billion were disbursed during (July-March, 2008-09) as against PKRs.138.6 billion during the corresponding period of last year thereby registering an increase of 9.6 percent (Pakistan Economic Survey 2008-09).

## 1.2 Use of Pesticide in Pakistan

Increased use of pesticides has threatened human health and lives of other species. According to an estimate, 10,000 people in developing countries die each year from pesticides poisoning and another 400,000 suffer acutely from its effects (Sandhu, 1993). South East Asia accounts for nearly 40 percent of the pesticides used in the developing world. Excessive use of pesticides, lack of appropriate legislation, wide spread ignorance of the risk involved, poor labeling, inadequate and/or less effective extension services and the discomfort of the wearing protective clothing in hot climates all account for the increased risks of poisoning to both agricultural worker and the general public in the developing countries, like Pakistan. Furthermore, most of the pesticides used in developing countries in general, and particularly in Pakistan, are insecticides (74 percent), which are more toxic to humans.

In Pakistan, the use of pesticides is continuously increasing (Table-1) being only 665 metric tons in 1980 went up to 39,186 metric tons in 2008, and so is the sprayed area. Thus the major pest control strategy in Pakistan is the use of chemicals some of which belong to WHO categories A and B (extremely hazardous). Moreover, all of these pesticides are hand sprayed on the ground.

Such an extensive use of pesticides, especially in the cotton belt of Pakistan where two-third of the total pesticides are used within 4 months (July-October), has created problems like development of resistance and consequently requiring more chemicals to be sprayed, pesticides residues in drinking water and to a very high degree in fruits, vegetables and edible oils, killing of non-target beneficial organisms, bioaccumulation in the food chain, occupational hazards, and direct pesticides poisoning to humans (Matin, 2002).

**Table-1: Pesticide use in Pakistan during 1992 to 2008**

| Year | Quantity (Million Tonnes) | | | Value (Million PKRs) |
|---|---|---|---|---|
| | Imports | Production | Total | |
| 1992 | 6691 | 16748 | 23439 | 6554 |
| 1993 | 6128 | 14151 | 20279 | 5384 |
| 1994 | 10693 | 14175 | 24868 | 5808 |
| 1995 | 20136 | 23239 | 43375 | 7274 |
| 1996 | 24151 | 19068 | 43219 | 9987 |
| 1997 | 24168 | 13836 | 38004 | 9904 |
| 1998 | 22765 | 18811 | 41576 | 6960 |
| 1999 | 27210 | 18470 | 45680 | 7324 |
| 2000 | 19764 | 41535 | 61299 | 4971 |
| 2001 | 20678 | 26914 | 47592 | 7741 |
| 2002 | 27103 | 42794 | 69897 | 6790 |
| 2003 | 24028 | 54105 | 78133 | 8138 |
| 2004 | 40482 | 89116 | 129598 | 12592 |
| 2005 | 28371 | 76792 | 105164 | 10379 |
| 2006 | 12721 | 30855 | 43576 | 5906 |
| 2007 | 17939 | 76326 | 94265 | 10534 |
| 2008 | 9282 | 29904 | 39186 | 6940 |

Source: Department of Plant Protection, Karachi; Agricultural Statistics of Pakistan (2008-09)

## 2. Brief history of chemical pesticide use and trends in pesticide use

### 2.1 Pest Management and Pesticide use in Pakistan: a historical perspective

Pakistan at the time of independence in 1947, like the other newly independent states in the region, did not have a plant protection service. While during the earliest times crop protection was marked by traditional methods, the use of preventive non-chemical control to reduce pest pressure has almost disappeared since the 1960s. Also, no research was conducted on the economics of plant protection during that period.

Use of pesticides was initiated in Pakistan in the 1950s by the Government primarily for locust control. The government of Pakistant imported an amount of 254 metric tons of formulated pesticides in 1954 for the first time (Habib, 1996). This was the beginning of the pesticide business in the country. In 1960-61, 4,979.4 tonnes of pesticides worth of 19.52 Million PKRs were imported in Pakistan, which increased up to 26,970 tonnes and worth of 8,980 Million PKRs in 2008-09 (Table-2). Until 1980, the Plant Protection Department was responsible for pesticide imports and their distribution in the country through the national agricultural extension network. Most of the imported pesticides were used for aerial spraying to control locust, pests of sugarcane, cotton, rice, tobacco and fruit crops. There was a price subsidy on pesticides and aerial spraying was free of charge to farmers.

In 1980, the pesticide business was transferred to the private sector and the Government of Pakistan allowed registered companies to import, manufacture and market pesticides in the country. Since then there has been steady increase in pesticide import and consumption.

In the past the economics of plant protection measures was not at all taken into consideration. The pressure to “grow more” rendered the traditional methods inadequate. Worsening pest problems from 1970s have led the country into the "pesticide spiral". As a result, consumption of pesticides in Pakistan has increased manifold but such increase in pesticide use has not contributed to proportionate increase in the crop yields.

Insecticides share 90% of the total pesticides consumption in the country followed by herbicides 7%, fungicides 3% and others (acaricides, fumigants) 0.2%. The consumption of insecticides remained constant althrough with slight decline during 1982. However, there is a steady increase in herbicide use. Particularly, herbicide use has increased in wheat and rice crops, which share 53% and 14 % of the herbicide used, respectively, during 1998.

Of the pesticides used to control pests of various crops, on an average, cotton crop shares the highest proportion and almost 54% pesticides are used to control cotton pests followed by 16% on rice, 13 % on sugarcane and 10 % on fruits and vegetables. The percent treated area under cotton crop is now declining but steadily increasing under fruits and vegetables. During year 1999-2000, the cotton shared 53% of the treated area while fruits and vegetables shared 17%. Particularly, pesticide use on fruits and vegetables has increased in Balochistan, Khyber Pakhtunkhawa and Sindh provinces.

The private sector has played a major role in promoting the use of pesticides in Pakistan. It was able to take advantage of the government’s pesticide oriented policies. Aggressive media campaigns on TV and radio helped convincing farmers that pesticides were indispensable. Private companies provided incentives in the form of credit. They undertook extensive campaign among farmers and motivated them to use pesticides. The private extension services promoting their products were more effective than the staff of the Agriculture Extension Department.

**Table-2: History of Pesticide Policy in Pakistan**

| | |
|---|---|
| 1954 | Import of pesticides to control locust. |
| 1954-65 | Distribution of pesticide free of cost by public sector. |
| 1966-74 | Subsidized price up to75% from Rs.0.25/lit. |
| 1971 & 73 | Pesticide Ordinance and Rules. |
| | 50% subsidy on EC's/ WP's and 75% subsidy on granules; 25% |
| | distribution by public sector and 75% by private sector. |
| 1980 | Import, distribution and sale transferred from public to private sector |
| 1992 | Amendment in Pesticide Ordinance; relaxation in pesticide import: |
| | i) Introduction of generics |
| | ii) Import of Pesticide registered in the country of origin without local registration. |
| 1992-93 | Duty and surcharge on herbicides reduced (10%). |
| 1993 | Sale tax exemption on pesticides. |
| 1994 | Ban on the import of 21 hazardous pesticides. |
| 1995 | Liberalization on import and registration laws. |
| 1997 | Amendment in the Pesticide Ordinance to strengthen the punishment provision for pesticide adulteration. |
| 2000-2001 | Pesticide Policy Study for the rational use of pesticides |
| 2002 | Review of Pesticide Ordinance & Act and Rules for adoption |
| 2005 | Agriculture Pesticides Act of 2005 |

Unfortunately, the widespread use of chemical-based control programs in crops has probably increased pest problems (Ahmad et al, 2001). Excessive and inappropriate pesticide use created imbalance in the agro-ecosystem killing non-target and environment friendly organisms including birds (Azeem 2000). Such imbalance of the agro-ecosystem has induced pest resurgence and secondary pest outbreak in the naturally occurring pest populations. Moreover, inappropriate use of pesticides has induced resistance in a number of target pests. A review of studies on pest resistance reveals seven (7) important insect species resistant to a wide range of pesticides (Irshad, 1999). Indiscriminate use of pesticides has also destroyed the bio-control agents in agro-ecosystems. The populations of natural enemies in cotton growing areas have declined as much as 90% during the last decade (Hasnain, 1999).

**Table-3: Import of Pesticide in Pakistan during 1960 to 1985**

| Year | Import of Pesticides | | Year | Import of Pesticides | |
|---|---|---|---|---|---|
| | Quantity (Tonnes) | Value (Mln PKRs) | | Quantity (Tonnes) | Value (Mln PKRs) |
| 1960-61 | 4979.4 | 19.52 | 1985-86 | 17498.9 | 1416.81 |
| 1961-62 | 1980.3 | 8.39 | 1986-87 | 20647.8 | 1878.39 |
| 1962-63 | 4594.3 | 22.09 | 1987-88 | 15765.4 | 1769.27 |
| 1963-64 | 1670.3 | 6.64 | 1988-89 | 11326.5 | 1382.90 |
| 1964-65 | 826.0 | 7.08 | 1989-90 | 10543.5 | 1249.27 |
| 1965-66 | 882.9 | 11.26 | 1990-91 | 13030.1 | 1489.43 |
| 1966-67 | 2443.5 | 1.65 | 1991-92 | 15258.3 | 1945.98 |
| 1967-68 | 5153.1 | 18.44 | 1992-93 | 14434.8 | 1730.60 |
| 1968-69 | 1465.1 | 3.87 | 1993-94 | 12100.4 | 1706.30 |
| 1969-70 | 1998.0 | 10.49 | 1994-95 | 21776.1 | 2978.10 |
| 1970-71 | 2248.0 | 41.77 | 1995-96 | 30479.0 | 5080.70 |
| 1971-72 | 2438.0 | 39.65 | 1996-97 | 30855.9 | 5272.49 |
| 1972-73 | 18484.0 | 78.72 | 1997-98 | 29224.9 | 4801.19 |
| 1973-74 | 6473.6 | 171.6 | 1998-99 | 31893.4 | 5515.12 |
| 1974-75 | 6927.6 | 257.68 | 1999-00 | 26123.9 | 4691.71 |
| 1975-76 | 13758.3 | 310.42 | 2000-01 | 2155.0 | 3476.50 |
| 1976-77 | 16225.7 | 460.64 | 2001-02 | 31783.2 | 5320.49 |
| 1977-78 | 12754.4 | 254.64 | 2002-03 | 22241.7 | 3440.86 |
| 1978-79 | 7727.3 | 188.81 | 2003-04 | 41406.4 | 7156.66 |
| 1979-80 | 4419.1 | 167.66 | 2004-05 | 41561.4 | 8260.60 |
| 1980-81 | 7105.0 | 224.74 | 2005-06 | 33953.9 | 6804.00 |
| 1981-82 | 5481.0 | 230.62 | 2006-07 | 29089.4 | 5848.40 |
| 1982-83 | 8860.3 | 396.71 | 2007-08 | 27814.2 | 6330.20 |
| 1983-84 | 10662.5 | 685.84 | 2008-09 | 26970.0 | 8980.00 |
| 1984-85 | 15889.2 | 1196.62 | | | |

Source: Federal Bureau of Statistics; Agricultural Statistics of Pakistan (2008-09)

**Table-4: Use of Pesticide by Size of Farm in Pakistan**

| Size of Farm (Hectares) | Total Farm | Farms Reporting Use of Plant Protection | |
|---|---|---|---|
| | | Number | % of Total |
| All Farms | 6620224 | 1805106 | 27 |
| Govt. Farms | 170 | 85 | 50 |
| Private Farms | 6620054 | 1805021 | 27 |
| Under 0.5 | 1290098 | 171711 | 13 |
| 0.5 to under 1.0 | 1099330 | 260639 | 24 |
| 1.0 to under 2.0 | 1425370 | 424293 | 30 |
| 2.0 to under 3.0 | 966411 | 317381 | 33 |
| 3.0 to under 5.0 | 890755 | 301074 | 34 |
| 5.0 to under 10.0 | 580200 | 214150 | 37 |
| 10.0 to under 20.0 | 260791 | 85643 | 33 |
| 20.0 to under 40.0 | 77773 | 21701 | 28 |
| 40.0 to under 60.0 | 15277 | 4126 | 27 |
| 60.0 and above | 14054 | 4294 | 31 |

Source: Census of Agriculture, 2000; Agricultural Statistics of Pakistan (2008-09)

## 3. Pakistan in relation to major crops, crop losses due to insect pests and diseases attack

Insect pests, diseases and weeds cause, on an average, losses of around 20% annually in the Country. The major insect pests include bollworms, white flies, aphids and jassids, cutworm, stem borers, codling moth, and fruit flies. The major diseases include rusts, foliar spots, root and crown rots, leaf curl and bunchy top viruses, powdery mildew, and malformation. Wild oats and Phalaris are the notorious weeds (Table-5). Moreover, pests in stores, yards and on trade commodities are encountered.

**Table-5: Main Pests of economically important crops in Pakistan**

| Crops Attacked | Pests |
|---|---|
| Wheat | Brown Rust (*Puccinia recondita*)<br>Yellow Rust (*Puccinia striiformis*)<br>Phalaris minor |
| Cotton | Bollworms (various species)<br>Sucking insects:<br>Jassid (*Amrasca devestans*)<br>Thrips (*Thrips tabaci, Scirtothrips dorsalis*)<br>White Fly (*Bemisia tabaci*)<br>Cotton leaf curl virus (CLCuV)<br>Cyprus rotundus |
| Rice | Yellow stem borer (*Scripophaga incertulas*)<br>Plant hopper, Leaf folder<br>Cyprus rotundus |
| Potato | Late blight ( *Phytophthora infestans*)<br>Early blight (*alternaria*)<br>Black scurf (*Rhizoctonia solani*)<br>Aphid (various species)<br>Potato viruses (various) |
| Sugar cane | Stem borer (various species)<br>Leaf folder (*Pyrilla perpusilla*)<br>Red rot (*Colletotrichum falcatum*) |
| Fruits and Vegetables | Diamond back moth, codling moth, root knot nematodes, Bunchy top virus, thrips, downy mildew, powdery mildew, root and crown rot, foliar blights |
| Various crops | Bandicoot rat (*Bandicota bengalensis*)<br>Wild bore (*Sus scrofa*)<br>Sparrow (*Passer domesticus*)<br>Parakeets (*Psittacula kremeri*)<br>Aphids (various species)<br>Termites (various species) |

Overtime pest problems in various crops have considerably changed due to change in cropping patterns, introduction of technologies and changing environments. This is well illustrated in case of cotton, which is a key crop in Pakistan's economy sharing 60% of export earning and over 71% of domestic edible oil production (Ahmad and Poswal, 2000). Since 1980, minor pests have become

major and new pests have appeared on cotton (Irshad, 2000). For example, before 1980, jassid was the only key pest in cotton. But the extensive use of pesticides since 1982 changed the pest complex and thus beside jassid, bollworms & white fly began to appear as major pests of cotton (Inayatullah 1997; Ahmad 2000). American bollworm, aphid and tea mites were originally not pests of cotton in Pakistan but they became pests as the direct effect of large scale and indiscriminate use of pesticides, which consequently resulted in increased crop losses.

**Table-6: Changes in Insect Pests of Cotton**

| Year 1980 | Year 1999 |
|---|---|
| Jassid | Jassid |
| White fly | White fly |
| Thrips | Thrips |
| Spotted Bollworm | Spotted Bollworm |
| Pink Bollworm | Pink Bollworm |
| Spider Mites | Spider Mites |
| | Aphids |
| | American Bollworm |
| | Tea-mite |
| | Spiny bollworm |

Source: Ahmad and Poswal, 2000

While the easy gains in acreage and yields through the adoption of Green Revolution technologies have been made in the past, the agricultural sector now faces the challenge to further increase its productivity in a sustainable way. Due to ever increasing population pressure, demand for agricultural commodities will increase in near future. Further, Pakistan has to maintain its competitiveness in international export markets and to adapt to increasingly stringent demands from foreign countries in terms of food safety, environmentally sound production processes and a functioning quality control system. To achieve all these, pest management practices have to be focused on use of methods that rationalize the use of pesticides.

## 4. Authorities, agencies and research institutes related to pesticide in Pakistan

The Ministry of Food, Agricultural and Livestock (MINFAL) has the control of pesticides regulation in Pakistan. The Department of Plant Protection in Karachi is responsible for the registration and other regulatory aspects of pesticides. As a consequence of the promulgation of the 1971 Pesticides ordinance and authentication of Pesticides Rules 1973, Agricultural Pesticides Technical Advisory Committee (APTAC) was set up inter-alia for registration of pesticides. Federal Secretary MINFAL is the Chairman of APTAC. The APTA sub-committee headed by the Plant Protection Advisor and Director General, Department of Plant Protection, is the actual recommending authority for the registration of any pesticides in Pakistan. APTA sub-committee obtains detailed information about the product including name, structural formula, active ingredient, technical grade material, formulated product, flammability, efficacy, toxicological data, residue data, prediction of environmental effects, disposal of surplus pesticides, and pesticide container, lebeling, and direction for use, packaging and methods for analysis in prescribed Form. The requisite information is submitted to APTAC for consideration/approval of pesticides registration. Initially, each product is registered for three years and registration may be renewed after three years. Similar procedure is adopted for registration of biological pesticides (Soomro, *et al*., 2001).

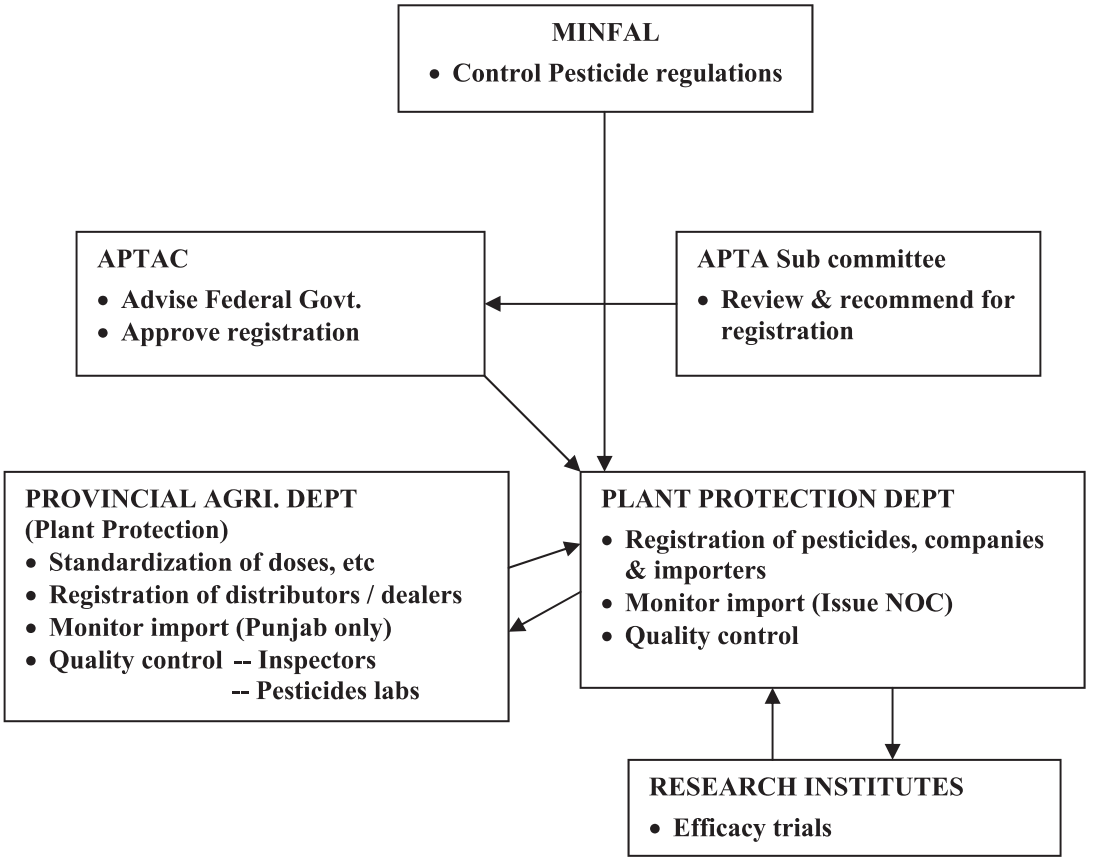



**Figure-1: Pesticides Management System in Pakistan**

**Table-7: Composition of Agricultural Pesticides Technical Advisory Committee**

| | |
|---|---|
| 1. | The Secretary to the Government of Pakistan Ministry of Food, Agriculture And Livestock Islamabad |
| 2. | The Vice President Pakistan Central Cotton Committee Moulvi Tamizuddin Road Karachi. |
| 3. | The Member (Plant Science) Pakistan Agricultural Research Council Islamabad. |
| 4. | The Secretary Ministry of Health Islamabad. |
| 5. | The Secretary Department of Agriculture Government of PunjabLahore. |
| 6. | The Director General Agriculture (Ext. A & R) Government of Sindh Department of Agriculture, Shahbaz Building Thandi Sarak Hyderabad. |
| 7. | The Director General Agriculture Extension Peshawar. |
| 8. | The Director General Agriculture Research Institute Saryab, Quetta. |
| 9. | The Professor Bio-Chemistry Jinnah Post Graduate Medical Centre Karachi. |
| 10. | The Chairman CropLife Pakistan 909-910-Park Avenue, P. E. C. H. S. Block – 6, Shahreh-e-Faisal Karachi. |
| 11. | The Chairman Pakistan Crop Protection Association 907 – B, Faisal Town Lahore. |
| 12. | Plant Protection Advisor & Director General Department of Plant Protection Karachi. |
| 13. | Deputy Secretary MINFAL, Islamabad. |

**Table-8: Composition of Agricultural Pesticides Technical Advisory Sub-Committee**

| | | |
|---|---|---|
| 1. | Plant Protection Advisor & Director General Department of Plant Protection Karachi. | Convener |
| 2. | Director General Agricultural Research Institute Faisalabad. | Member |
| 3. | Director Plant Protection Department of Agriculture Hyderabad. | Member |
| 4. | Director General Agricultural Research System NWFP Agricultural University Peshawar. | Member |
| 5. | Director General Agricultural Research Institute Quetta. | Member |
| 6. | Director Research Plant Protection Pakistan Agricultural Research Council Islamabad. | Member |
| 7. | The Chairman Department of Entomology University of Agriculture Faisalabad. | Member |
| 8. | Chairman Quality Control Ministry of Health Islamabad. | Member |
| 9. | Representative Crop Protection Association of Pakistan Islamabad. | Member |
| 10. | Chairman Pakistan Agricultural Pesticides Association Karachi. | Member |
| 11. | Chairman Pakistan Crop Protection Association Lahore. | Member |
| 12. | Representative Farmers Association of Pakistan | Member |
| 13. | Director Technical Department of Plant Protection Karachi. | Member / Secretary |

**Table-9: Pesticides Research Laboratories in Pakistan**

| Institute | Year of Establishment | No. of Scientists | No. of Publications | Activity |
|---|---|---|---|---|
| Pesticide Research Laboratory, TARI*, PARC*, Karachi | 1954 | 6 | 50 | Pesticide quality control, Pesticide residues in food, crops, water, soil and human tissues. |
| Pesticide laboratory, NIAB*, Faisalabad. | 1969 | 2 | 14 | Pesticide residues in food and soil especially through radio-tracers techniques. |
| Nutrition Division, NIH*, Islamabad | 1975 | 2 | 4 | Pesticide residues in food and tissues. |
| Federal Pesticide Research Laboratory, PARC*, Multan | 1998 | 2 | | Pesticide quality control |
| Ecotoxicology Research Institute, NARC*, Islamabad | 1994 | 8 | 10 | Pesticide residues in food-chain and environmental compartments, Impacts of pesticides on non-target organisms. |
| Pesticide Laboratory, Chemistry Dept. UAF*, Faisalabad | 1982 | 2 | 8 | Academic |
| Chemistry Dept. NWFP Univ. of Agriculture, Peshawar | | 2 | - | Academic, dissipation pattern & half-lives |
| Chemistry Dept. Peshawar Univ. Peshawar | | 2 | - | Academic |
| Pak-EPA, Islamabad. | 1993 | 2 | - | Legislation, Industrial & vehicular pollution |
| Pesticide Division, Faisalabad | 1971 | 10 | 8 | Quality Control |
| Pesticide Quality Control Laboratory, Lahore | 1984 | 3 | - | Quality Control |
| Pesticide Quality Control Laboratory, Multan | 1984 | 2 | - | Quality Control |
| Pesticide Quality Control Lab., Tarnab, Peshawar | | 3 | - | Quality Control and residues in crops |
| Grain Quality Testing Lab. NARC, Islamabad | 2004 | 8 | - | Grain quality testing including pesticide residues |
| Grain Quality Testing Lab. PARC, Karachi | 2004 | 6 | - | Grain quality testing including pesticide residues |
| Pesticide Residues Lab. Kala Shah Kaku, Lahore | 2007 | 5 | - | Quality Control and residues in crops |

Source: i. Jabbar, A. and Mallick, S. (1994). Pesticides and Environmental Situation in Pakistan. SDPI Working paper series# 19. ii. Feenstra, S., Jabbar, A., Mashi, R., and Jahangir, W. A. (2000). Health Hazards of Pesticides in Pakistan. PARC, Islamabad/IWMI, Lahore. Plus personal communication.

*TARI-Tropical Agricultural Research Institute, UAF- University of Agriculture, Faisalabad, PARC- Pakistan Agricultural Research Council, NIH- National Institute of Health, NARC-National Agricultural Research Centre, NIAB- Nuclear Institute for Agriculture & Biology, Pak-EPA- Pakistan Environmental Protection Agency

**Table-10: List of Firms having Pesticides Laboratories/ Formulation Plants (Private Sector)**

| | |
|---|---|
| 1 | Agricides (Pvt.) Ltd, Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi 75600. |
| 2 | Bayer CropScience (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900. Ph. 021-5060721-23, 5055041-42 Fax: 5060638. |
| 3 | Bayer DAS (Private) Limited, 18 / III, Flench Street, Off Bleak House Road, Civil Lines, Karachi. Ph. 21-567-2262-5 Fax: 5685619 |
| 4 | Data Universal (Pvt.) Ltd. Suit # A- 5, D-9 Bath Island, Clifton, Karachi. |
| 5 | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. |
| 6 | FMC United (Private) Limited, 61-A Main Gulberg, Lahore. Ph. 42-5765100, 5098, Fax: 42-5764909, E-mail: sarwar_rahi@fmc.com. |
| 7 | Famy Industries, Plot No. 161, Sector 24, Korangi industrial area, Karachi. |
| 8 | Granulars (Pvt.) Ltd, Kassam Manzil, 1 st Floor, 1 / 29, Randal Road, KarachI -74400. Ph. 7728046-47-48, Fax: 92-21-7724908, 7732965 |
| 9 | National Insecticide Company (Pvt.Ltd. 28-Abdullah Haroon Road, P.O.Box. 7129, Karachi.74400, Ph. 5687171, 5689254-57, Fax: 21-5670073 |
| 10 | Syngenta Pakistan Limited. S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. Ph. 92-61-539603, 539658-59, Fax: 92-91-538515, 539660 |
| 11 | Pak China Chemicals, 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. Ph. 042-5321461-7, Fax: 042-5321324-5, E-mail: aagace@wel.net.pk, pakchina@wel.net.pk. |
| 12 | Pakistan Agro Chemicals(Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. Ph. 4534870-74, Fax: 4548232, E-mail: pakagro@breeze.net.pk. |
| 13 | Marvi Agrochem (Pvt.) Ltd,. 12-M, Block-6, P.E.C.H.S, Karachi. |
| 14 | R.B. Avari Enterprises (Pvt.) Ltd, B-329,Sasi Arcade, Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main+B334 Clifton, Karachi. |
| 15 | Reliance Chemicals (Pvt.) Ltd, Lakson Square Bldg.No.2, Sarwar Shaheed Road, Karachi. |
| 16 | Union Industries, D-5 Sector, 22-a, Korangi, Karachi.Ph. 5067202, 5067203 Fax:5067202, 6634513. |
| 17 | Warble (Pvt.) Ltd, Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. Ph. 061-562596, 55696, Fax: 564567, E-mail: warble@mul.paknet.com |
| 18 | Welgreen Chemical (Pvt) Ltd., 202, Latif Plaza, 103 - Ferozpur Road, Lahore. Ph. 42-757-3568, 7580766, 7596275, Fax: 7574580, 7596275 E-mail: auvangzeb@ifti.brain.com.pk |
| 19 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. |

# 5. Regulatory framework (Policies, regulations and laws)

## 5.1 Introduction

The pesticides are very important inputs in modern agriculture where the crops have to be protected from the attacks of pests and diseases by all possible means for increased productivity. But pesticides are deadly toxic chemicals, and a slight negligence in their import, manufacture, formulation, sale, storage, and use may result in dangerous consequences and loss of lives. Therefore, it is the responsibility of the government to regulate import, manufacture, formulation, sale, storage, and use of pesticides to protect the environment and human lives.

In this part of the world, even during British Government some provisions were made as early as 1898 (Act-IV) about penalties for adulteration. “The Poison Act XII” was passed in 1919, and amended in 1940.

In Pakistan after independence, the use of pesticide was initiated in 1954 with the import of 254 metric tons of formulated pesticides and some minor Acts were passed now and then but the major ordinance to regulate the import, manufacture, formulate, sale and use of pesticides was promulgated in 1971, which was called "The Agriculture Pesticides Ordinance, 1971" (Shahid, 2003).

Pesticide legislation was promulgated well in advance of the launch of FAO's International Code of Conduct on the distribution & use of Pesticides. An Agricultural Pesticide Technical Advisory Committee (APTAC) was established to advise the central government on technical matters related to the administration of this ordinance. The ordinance was further amended in September 1992 to allow pesticide import under generic names rather than brand names and was again amended in December 1997 to strengthen the punishment provision for pesticide adulteration.

## 5.2 Registration of Chemical and Biological Pesticides

The department of Plant Protection in Karachi is responsible for registration and other regulatory aspects of pesticides. After authentication of pesticides rules 1973, Agricultural Pesticide Technical Advisory Committee (APTAC) was set up inter-alia for registration of pesticides. The APTA sub committee headed by the Plant Protection Advisor and Director General, Department of Plant Protection, is the actual recommending authority for the registration of any pesticide in Pakistan. Once a pesticide is registered, its registration is reviewed periodically. During 198O's, the issue of internationally banned products was raised in APTAC meetings for their deregistration in the country. Initially, each product is registered for three years & registration may be renewed after three years. Similar procedure is adopted for registration of biological pesticides. Some more pesticides classified as extremely hazardous (1- A category) and highly hazardous (1-B category) by WHO, were recommended for de- registration from their use in agricultural crops (Qasmi, 1997).

## 5.3 Registration under Trade Name

Under the law (Rule-4) of the Agricultural Pesticides Rules 1973, the application may be sent to laboratory for tests or analysis within one month from the date of receipt of the sample. The Agricultural Pesticides Rules require that efficacy evaluation trials should be conducted for two crop seasons by at least two agencies. The efficacy report is first evaluated by the Technical Committee of the respective province and then by Provincial Standardization Committee. The efficacy data received from Federal/ Provincial Government are examined by the Department of Plant protection and then placed for the consideration of the APTA Sub- Committee and pesticides recommended by the Sub- Committee are finally approved by the APTAC headed by the Secretary MINFAL.

## 5.4 Registration under Generic Scheme

Pesticides already registered under trade names can be imported under generic names. Under the provision of the Agricultural Pesticides (Amendment) Act, 1992 and Amendment made in the Agricultural Pesticides Rules in March 1993, applications are submitted on prescribed Form-16 along with relevant samples.

## 5.5 Import Permission for Pesticide Registered in the Country of Manufacture

Under the provision of Agricultural Pesticides (Amendment) Act, 1992 and Amendment made in the Agricultural Pesticides Rules in March 1993, applications are submitted on prescribed Form-17. The application should fulfill the following requirements:

- Documentary proof of the pesticides registered in the country of manufacture.
- Proof of the use of pesticides in any member country of the OECD or China.
- Documentary proof of the pesticide extensively used on relevant crop and its pests in the country of origin or any OECD member country or China.

## 5.6 Registration Fee

The registration/renewal fee was Rs.500/ in 1973. This was revised to Rs. 1000/ in 1980 and further revision was made to Rs. 2500/ in 1990. The registration fee was enhanced from Rs. 2500/ to Rs. 25000/ per formulation in 1996. And renewal fee was also changed from 2500/ to 5000/. The registration fee may be increased up to 10% or 1% of the actual value of sale, which may be charged to raise funds for pesticide related research and development work.

## 5.7 Pesticide Regulation and Its Implementation

Legislation and regulation are only effective depending upon their proper enforcement, which is major constraint in most of the countries and Pakistan is not an exception. It is clearly stated in the ordinance that the government may register pesticide, if it is satisfied that it *is not generally detrimental or injurious to vegetation (except weeds), or to human or animal health, even when applied according to direction.* This clearly empowers the registeration authority to get all the information from applicant as per Form-1. Applicant Company should execute field trials in Pakistan for efficiency and determination of maximum residue limit and should bear all the expenses of this work. Multinational companies consider that Quality of pesticides under generic scheme is unsatisfactory, right from the port of landing up to delivering to the farmers. Bhambro (1995) indicated that the diversified sources of pesticide supply under generic system have increased the chances of supply of sub- standard and adulterated pesticides. However, according to national companies, the quality of pesticides under generic scheme is satisfactory. Under the simplified process of registration, import and distribution the two years testing can be avoided, if products are already registered in the country of origin. This also has some severe implications because exporting countries are providing false documents to help unscrupulous traders who are bringing in spurious products (Mustafa and Shah, 1998). Under such circumstances, it becomes the responsibility of the government to ensure adequate and effective testing of pesticides along with detailed information of the various anticipated conditions prevailing in the country. It was reported that more than 30% of the Asian countries were unable to enforce restrictions on highly toxic pesticides and about 75% reported inadequate resources for enforcement (Weibers, 1993). Thus, government should take responsibility in stopping the production and promotion of these pesticides.

## 5.8 Legal Requirement for Production, Distribution, Storage, Application and Disposal of pesticides (Standards)

Under the Article 11 of Agricultural Pesticide Ordinance 1971, no person shall store or use any pesticide except in accordance with rules made under this Ordinance. Similarly, under section 2-I of the Ordinance, it is clearly stated that any person who holds stock for sale or advertises for sale an adulterated or sub-standard pesticide shall be guilty of an offence. There is severe punishment and fine for the adulterators. The storage requirements are as under:

- Storage should be away from populated areas.
- Storage should be properly ventilated.
- Should have fire-fighting equipment.
- Storage should be equipped with protective and safety clothing.

The destruction and removal of the empty packages and pesticide remains shall be made in such a way that sources of water supply is not contaminated. The un-cleaned packages shall be destroyed in a way as to preclude the possibility of their being reused for any purpose other than as base material.

In Pakistan still there is no local manufacturing of basic & active ingredients except DDT & BHC, which are also banned now. However, there are 23 local formulating / repackaging plant in the country. The official figure shows that 190 registered pesticide companies are doing business in the country. However, according to Pakistan Agricultural Pesticide Association (PAPA) there are more than 300 players in pesticide enterprise. There are around 200, 55, 60 & 67 registered distributors in Punjab, Sindh, NWFP & Balochistan respectively.

## 5.9 Environment and Human Health protection Regulations and Standards

Environmental protection agency with prior approval of the Pakistan environmental protection council made notification in SRO549 (1) 2000 regarding the national environmental quality standards for municipal and liquid industrial effluents. According to the notification, the required environmental quality standard for pesticide is 0.15 mg/l in inland water, in sewage treatment and in sea water.

## 5.10 Monitoring and Enforcement of Regulation and Standards

Under the provision of section 15-18 of agricultural pesticides ordinance 1971, the designated inspector is authorized to enter any premises where pesticides are kept stored and draw samples of pesticides. Under the provision of section 20 of agricultural pesticides (ordinance) act 1971, any person who has purchased a pesticide and has doubt about quality may apply to a government analyst to conduct a test or analysis and analyst is bound to analyze an issue or report to him. In reality, hardly any farmer has made such request to the analyst. Most probably, the illiterate farmers are ignorant of these rules. The adulterator can be imprisoned up to seven years together with fine amounting to one million rupees (Agricultural Pesticide Amendment Ordinance, 1997).

## 5.11 Pesticide Quality Control

The check on the quality of pesticides for curbing the practice of sale of adulterated / sub-standard pesticides, is maintained through the network of inspectors and pesticides laboratories. Officers of provincial Agriculture Department are appointed as inspectors. The number of such inspectors is as follows:

| | | |
|---|---|---|
| Punjab | – | 232 |
| Sindh | – | 074 |
| N. W. F. P | – | 157 |
| Baluchistan | – | 092 |
| Federal | – | 015 |

*(Source Department of Plant Protection)*

## 5.12 Pesticide Marketing System

Pesticides are mainly marketed through distributors and dealers. Some companies sell pesticides from their own shops, e.g. Naya Sawaira sells Novartis products. Distributors have storage points in strategic locations around the country from which the demand of dealers is met. Most of the farmers purchase pesticides from dealers, while in some cases, neighboring farmers purchase/collect pesticides from farmers or stockiests. Storing pesticides along with other articles, including food items is reported as a common practice. The shopkeepers or their employees normally sit in the premises in which pesticide are kept for sale which enhances the risk of slow poisoning.

According to Pakistan Environment Protection Agency (PEPA), unwanted stocks of obsolete pesticides are around 4687 metric tons in 1700 different stores in the country. The large quantities of out-dated pesticides can present special problems for disposal particularly where suitable disposal technology does not exist. It is important to safeguard both the environment and general public from such stocks in full compliance with national and international regulations

## 5.13 Pesticide Usage

Sustainable agriculture offers a philosophy and a set of practices & modus operandi to plunge pesticide impacts. One of the most successful ways to address the issues like costs of pesticide reliance, and the health and environmental externalities, is through participatory Integrated Pest Management (IPM) training for farmers and extension staff. Farmer Field Schools (FFSs) have a proven track record in plunging pesticide use, usually by more than 50% (Table 1). Participating farmers in IPM projects generally shift to less toxic and less persistent products and a much greater reliance on physical, biological and other control methods. Moreover, IPM based FFS approach enabled farmers to enhance their net income, often by improving yields or quality, and farmers could also find new and more reliable markets.

**Table-11: Pesticide Use Reduction due to IPM Based FFS Training**

| Crop | Country | Pesticide use reduction |
|---|---|---|
| Cotton | Pakistan | At least 68% |
| Pistachio nut | Iran | From six, down to one or zero sprays per season |
| Rice | Bangladesh, Vietnam, Philippines | Up to 100% |
| Vegetables, rice, plantain | Ghana | Up to 95% |
| Cabbage | Philippines | 55-80% |
| Tomato | Kenya | 92% in insecticides, 42% in fungicides |
| *Source: IPM in Developing Countries and Lessons for Europe, S. Williamson, Paper presented at the MRDGF/PAN Europe colloquium on Alternatives for Reducing or Eliminating the Use of Synthetic Pesticides in Agriculture: IPM and Organic Farming, 30 May 2003, Beauvais, France.* | | |

As Government of Pakistan is cognizant of the situation that irrational use of pesticide has been increased by the farming suburb, which has not only destroyed the beneficial insects, animals and environment but also has adverse effect on the human health. Likewise, the irrational use of pesticides had badly affected the efficiency of Honey bees not only in term of production of honey but also in crop pollination. Therefore, it is necessary to protect human, plant and animal health as well as the environment from adverse effects resulting from the use of pesticides. Keeping in view the present scenario, the Act was revised in 2005 to regulate the import, export, manufacture, formulation, repackaging, sale, distribution, disposal, advertisement and use of pesticides is attached as **Annexure-3.**

# 6. Registered chemical pesticides

**Agricultural Pesticides Ordinance** (APO) was promulgated in 1971 to regulate import, manufacture, formulation, sale, distribution, use and advertisement of pesticides. **Agricultural Pesticides Rules** were made thereunder in 1973 and the pesticide business was brought under regulation and registration with the help of Provincial Agriculture Departments. Pesticides are registered in the trade name (Form -1) after efficacy evaluation trials of two crop seasons by at least two research agencies including Provincial and Federal ones. The products approved under this scheme are first standardized by the provincial Governments with final approval granted by the Federal Government on advice of Agricultural Pesticides Technical Advisory Committee (APTAC). It normally takes three years to get a product approved under Form - I scheme.

In 1993, two new kinds of registration as per Form-16 & Form-17 for Generic Scheme and Permission / Registration Abroad Scheme were launched. Generic name registration is granted to products designated by the Federal Government, which have no valid patent right and are already

tested and trialed on Farm-1. Permission (Registration Abroad) Scheme is conditional to the registration of new molecules that are prior registered and used in any of the OECD countries or China. The result of liberalized policy of 1992 has been phenomenal. Import from diversified sources and induction of more than 350 new entrepreneurs as against about 30 until 1993 have given the desired results i.e. enhancement of healthy competition and the availability of effective and inexpensive pesticide products. Pesticide is the only agricultural input where the prices of frequently used products are either contained or have declined by 30-40% generally and in few cases even up to 62% specially reduction in price despite devaluation of Pak Rupee.

The registration position of pesticide compounds under various schemes is as follows:

- Form-1 472 (Detail attached as **Annexure-IV**)
- Form-16 (Generic) 1585 (Detail attached as **Annexure-V**)
- Form-17 (Registered Abroad) 977 (Detail attached as **Annexure-VI**)

Department of Plant Protection under the policy advice of the Ministry of Food, Agriculture & Livestock has the mandate of registration and management of pesticides meant for the plant/crop protection or agriculture purpose.

Recently the Federal Government has taken up the revision of Agricultural Pesticides Act (APA) to make it abreast with the recent developments in the world. Draft of APA 2005 is ready for approval of the competent authority (Mazari, 2004).

## 7. Banned chemical pesticides in Pakistan

### 7.1 Introduction

During 1980s the issue of internationally banned pesticide products was raised in APTAC meetings for de-registering such pesticides in Pakistan. Ultimately, 23 pesticides were deregistered and their imports either in technical grade or formulation were banned in 1994. Further, some more pesticides classified as extremely hazardous (1-A category) and highly hazardous (1-B category) by WHO, were recommended for deregistration from use on agricultural crops (Qasmi, 1997). Despite their ban, such pesticides are still used on limited scale due to various reasons, including smuggling from Afghanistan, Iran, India, and other countries. In October, 2000, a case of Methyl Parathion 50 EC was discussed in a meeting on “Rational Use of Agro-Pesticides for Ensuring Environmental Safety” in the Department of Plant Protection, Karachi. Despite the fact, Methyl Parathion has been placed on the Prior Informed Consent (PIC) list of FAO/UNEP. The said pesticide was imported (96,000 liters) by a leading national pesticide company in the country, without any consent of the designated national authority. However, Pakistan agrees to the FAO Code of Conduct and Prior Informed Consent (PIC) and efforts were made to follow the Code of Conduct in the regulatory set-up. In Pakistan, about 17 different products have been placed under PIC list of FAO/UNEP. In 1997, ban was imposed on the import of 21 hazardous pesticides that included POPs pesticides.

## 7.2 List of Pesticides Banned in Pakistan

**Active Ingredients**

1. B.H.C
2. Binapacryl
3. Bromophos ethyl
4. Captafol
5. Chlordimeform
6. Chlorobenzilate
7. Chlorthiophos
8. Cyhexatin
9. Dalapon
10. DDT
11. Dibromochloropropane + Dibromochloropropene
12. Dicrotophos
13. Dieldrin
14. Disulfoton
15. Endrin
16. Ethylene dichloride + Carbontenachloride
17. Leptophos
18. Mercury Compound
19. Mevinphos
20. Toxaphene
21. Zineb
22. Heptachlor
23. Methyl Parathion
24. Monocrotophos (all formulations)
25. Methamidophos (all formulations)

**Formulations**

1. Dichlorvos (above 500 g / l)
2. Phophamidon (above 500 g / l)
3. Monocrotophos (above 400 g / l)
4. Methamidophos (above 600 g / l)

**Pesticides Not Registered**

Aldrin (POP/PIC)
Mirex (POP)
Chlordane (POP/PIC)
Dinoseb (PIC)
Ethylene di bromide (PIC)
Parathion (PIC)
Fluroacetate (PIC)

## 7.3 Inventories of Obsolete and POPs Agricultural Pesticides

Pakistan at present holds one of the largest stocks of obsolete Pesticides in the world. According to book inventories and surveys, the quantity of expired pesticides is in between 2000 to 5000 tons. According to provincial sources, the quantities of out dated pesticides have been estimated at 2016 tons in Sindh, 3805 tons in Punjab,179 tons in NWFP and 128 tons in Balochistan. An obsolete stock of 178 tons lies with the federal Department of Plant Protection. Out of these 178 tons, 2.54 tons belong to POP pesticides (Brief to Committee on disposal of obsolete Pesticides, MINFAL, 2003; unpublished).

In 1997, under a GTZ assisted project, inventory of out-dated pesticides was prepared for the NWFP province. The main quantities were 40 tons of Gusathion (azinphos methyl) stored by the federal Department of Plant Protection at Jamrud, Peshawar and 60 tons of Dimethoate at Nizampur, Peshawar. The project took initiative and lead in the safeguarding and disposal of obsolete pesticides in the North West Frontier Province of Pakistan. The pesticides at Jamrud and Nazampur were safeguarded and storehouses were cleaned. Stock of 40 tons containing Gusathion was taken back to Europe for incineration with the help of M/S Bayer AG and GTZ. The remaining stocks of 60 tons of Dimethoate could not be lifted due to non-availability of write off by the competent authority. The stock of Dimethoate was, therefore, shifted to the stores of federal Department of Plant Protection at Quetta and Larkana.

The Government of the Netherland had also supported a project for disposal of obsolete pesticides in 1997, and 317 tons of obsolete pesticides were disposed of from the province of Punjab (Brief to Committee on disposal of obsolete Pesticides, MINFAL, 2003; unpublished).

## 7.4 Regulation and Mechanism

Except legislation for regulation of pesticides, no other mechanism exists in the country for banning the import / production of chemicals. As a consequence of the promulgation of the Agricultural Pesticides Ordinance, 1971, Agricultural Pesticides Technical Advisory Committee (APTAC) was set up for registration of pesticides.

Presently none of the POPs pesticides is registered under the Agricultural Pesticides Ordinance, 1971. Hence they cannot be manufactured, formulated, imported, sold, held in stocks for sale, advertised or used in Pakistan. The position of POP pesticides in terms of registration in Pakistan is as under:

- Aldrin had never been registered.
- Toxaphene was deregistered in 1992.
- DDT was deregistered in 1992.
- Chlordane had never been registered.
- Dieldrin was deregistered in 1983.
- Endrin was deregistered in 1996.
- HCB was deregistered in 1996.
- Heptachlor was deregistered in 1997.
- Mirex had never been registered.

## 7.5 Concerns and Remedial Action

In Pakistan the storage of obsolete pesticides, mostly under dangerous conditions, has resulted in major environmental problems, including air, water and soil pollution, and present a real danger to the public in the vicinity of the stores. The main hazard is the acute toxicity of the pesticides. Due to the rough handling of the packaging, most of the containers are damaged and sacks are rotten. During

the long storage time, thousands of metal drums are corroded; the liquid pesticides are leaked out or are continuing to leak resulting in large quantities of contaminated soil. Disposal of such stocks needs attention. Recent case study shows such an evidence of intra and inter-sectoral leakage and perhaps illegal import of banned POPs especially DDT (Azeem and Ahmad, NARC, 2003 unpublished).

Pakistan is a signatory to the Stockholm Convention on POPs since the 23rd May 2001. To demonstrate her concern to protection of the environment and human health from POPs, Pakistan may ratify the Stockholm Convention.

Disposal of obsolete stocks requires substantial financial and technical support. At a minimum estimated cost of US$ 2,000/ton, the total requirement for disposing an estimated 5000 tons in Pakistan would be US $ 10.00 million. The amount depends on many factors such as cleaning strategy, remediation and decontamination of affected sites, repacking of the wastes, destruction and other related factors. The problem is thus colossal and the financial requirement is enormous. It is, therefore, an issue that cannot be left to one single donor or institution. A concerted effort and mobilization of donors will be required. There are two possible options:

1. One is through the Global Environment Facility (GEF), which considers projects aimed at developing National Implementation Plans (NIPs) within the framework of the Stockholm Convention on POPs. This provides a sum of US$ 500,000 for enabling activities, leading to a second stage for the development of a major project, provided the country has signed the convention. Environmental Protection Agency, Ministry of Environment is executing a POPs enabling Project that may lead to development of such a National Implementation Plan and help obtaining the second stage project.

2. The second solution can run simultaneously with the above. The Government may hold a meeting of donors locally involving the donor community represented through embassies and all other stakeholders. Such a meeting needs to be chaired by a senior minister from the Ministry of Agriculture or the Environment (or jointly) to successfully appeal to donors. FAO can also participate in such a meeting and in collaboration with the Government present the obsolete stocks issue to donors both from the national point of view and from the global perspective.

## 7.6 General POPs management issues:

Pakistan has several laboratories that can be used for POPs identification. The laboratory of National Agricultural Research Centre carries out pesticide residue analysis in food chain, water and soil samples and has the capacity to analyze POPs. Pakistan Environmental Protection Agency has suitable laboratory and equipment for POPs analysis, except dioxins, but is further equipping and putting up trained manpower for such analysis. The Atomic Energy Commission has conducted some dioxin measurements in ambient air in the framework of trials for incineration of hospital wastes.

No systematic environmental monitoring system has so far been established in Pakistan. A comprehensive new initiative in this regard has commenced, through JICA funding. This initiative is not planned to include POPs specifically, but there may be scope to add these in the monitoring schemes.

The overall awareness about environmental issues is increasing in Pakistan. Many government entities and NGOs are actively informing and educating the general public on environmental hazards. However, awareness of POPs issues or wider chemical safety issues remains rather poor resulting in many incidents of poisonings especially among the farming population.

# 8. Measures adopted for pesticide safety and information on the evaluation of the pesticides risk.

## 8.1 Major problems associated with pesticides in Pakistan

### 8.1.1 Lack of awareness

The farmers in Pakistan have inadequate knowledge about pesticides as to their suitability, application techniques and safety measures. This is one of the reasons of poor pest control, environmental pollution and health problems in some areas. Programs for guidance of the farmers in this respect are far and few. The pesticide industry does not put sufficient resources on dissemination of knowledge on pests, pesticides, environment and management techniques. In this area there is great scope of extension work in the public sector.

### 8.1.2 Identification of pest problem

The stage of a particular insect pest is extremely important while determining the need for chemical treatment. Few insects can only be controlled at a particular stage where they have weak links in their life cycle. Care should be taken that the chemical sprays are directed where the pests and their vulnerable stages are available. Clean cultivation helps achieve better pest control. Those farmers, who pay attention to these points, get more yields.

### 8.1.3 Selection of pesticides

Normally selective chemicals appear to offer an almost ideal means of pest control. However, only a few such chemicals have been discovered and developed for commercial use. The pesticides that are harmless to predators and parasites are ideal for IPM program. Although their numbers are limited, they are being widely recommended. Pesticides like Emamectin Benzoate, Abamectin, indoxacarb and spinosad are known to be selective in their mode of action. Until more selective pesticides are commercially available at reasonable expenses, pesticides should be used more judiciously.

### 8.1.4 Under dosing

Under dosing of pesticide brings more harm than benefit in the shape of triggering development of resistance in the pests. To get good control of pest the recommended doses should be used. Sometimes the farmers reduce the dose thinking that the pest pressure is not much. Under dosing helps causing resurgence of the pests. The problem of pest control is aggravated. Insects develop resistance to insecticides more rapidly if under dosing is used. Small farmers tend to use less dose of pesticide.

### 8.1.5 Indiscriminate use of pesticides

Plant protection has become very specific and objective oriented. It is important to identify the problem first and then buy the chemical otherwise the money will go waste. Indiscriminate use will eliminate natural enemies and cause secondary pests to develop. Field biologists have studied the effects of improper pesticide use. The indiscriminate use of pesticides results in unsatisfactory pest control, environmental pollution and health problems (Mazari, 2004).

## 8.2 Preventive measure among farmers

In two different studies in the Punjab, it was found that of the female interviewed, only 5 percent took precautionary measures. Low educational level of female in the rural areas was the main reason for the low awareness of the health hazards of pesticides (Jabbar and Mohsin, 1992).

In another study carried out in the southern Punjab, small farmers from seven villages in a cotton growing area were interviewed on the use of pesticides. A sample of 30 people, including both men and women, was taken from each village. Most of the respondents were not aware of the hazards posed by pesticides. The only method of protection during spraying seemed to be a piece of cloth wrapped around face. Only in very rare cases, spectacles, gloves or other protective clothings were used.

The common practice is to take bath in the canal after spraying with pesticide soaked clothes still on. The pesticides are mixed with water near water sources in the village. These last two practices present a high risk for pollution of water sources, which are used for domestic purposes and drinking. During the first month, cotton picking is usually done by women and children without precautions, while pesticides are still being applied, which make working conditions unhealthy. After cotton picking, women start reporting complaints such as sneezing, muscular pain, dizziness, nausea, skin burning, itching, coughs, headache and blisters on the body. Weeding, which is done 5 to 6 times a season also leads to contact with pesticides as these are sprayed 6 to 7 times per season (Habeeb, 1996).

# 9. Resistant pest species

## 9.1 Resistance status in Pakistan

Prior to nineties, little work was done in Pakistan on sound scientific basis on resistance. There is no mention of resistant problem in various lead papers of the country (Ahmed, 1978, Chaudhry, 1981, Huque, 1971). Private pesticide companies established Insecticide Resistance Action Committee Cotton (IRAC) in 1990. The companies that formed IRAC–Cotton Pakistan were Chemdyes Pakistan Limited, Ciba Geigy (Pakistan) Limited, DowElanco B.V., FMC International S.A., Granulars (Pvt) Limited, Hoechst Pakistan Limited, ICI Pakistan Limited, Jaffer Brothers (Pvt) Limited, Shell Pakistan Limited and Rhone Poulence (Pvt) Limited. Their objectives were to establish resistance monitoring starting with American boll worm and whitefly with a view to establishing baseline data, establishing the resistance status of key cotton pests against different groups of pesticides, to create awareness on the issue of resistance through communication elements or education programs, to propagate the basic rules of good plant protection practices, to devise strategies to avoid the development of resistance and to protect existing insect control products as the introduction of new chemicals is costly and time consuming. Their findings are not available. In Pakistan, the first confirmed record of resistance was of *Pyrilla* in 1967 (Khan, 1967). However, Ashrafi (1971) quoted examples of resistance in *Pyrilla* to endrin in the Peshawar region during 1968, in cotton whitefly to dimecron in Faisalabad and Multan during 1970. Afterwards, few other examples became available. Pesticidal resistance problem of Pakistan was reviewed by Irshad (2000) and preliminary information was provided by Matin and Jabbar (1988) and Jabbar (1988).

### 9.1.1 Insecticides

Pesticides in Pakistan comprise 74% insecticides, 14% herbicides, 9% fungicides, 9% acaricides and 1% fumigants. Crop wise pesticides uses include 76% on cotton, 4% on rice, 3% on sugarcane and 17% on other crops (Khan, 1998). Thus among all categories of pesticides use of insecticides predominates. According to Ghouri (1967) sporadic aerial spraying and ground spraying could only kill a part of pest population and hence did not give good results in cotton of Punjab. This hit and miss method was not expected to give effective control. Therefore, a campaign was started where 0.2 million acres of superior cotton received treatment after every 15 days throughout the growing period (7 sprays). This gave good results. This blanket spraying situation existed at that time.

The literature survey showed that only in 7 insect species resistance has been confirmed uptill now (Table-17). Of these, 4 species attack crops in the pre harvest phase while 3 are problem in the grain storage.

**Pre Harvest**

Only in four species, {*Amrasca devestans* (Distant), *Bemisia tabaci (*Genn.), *Helicoverpa armigera(*Hub.)*, Pyrilla perpusilla(*Wlk. )} resistance has been confirmed. This does not mean that resistance problem is only confined to these pests but actually studies have not been conducted on other pests of agriculture crops.

**Post Harvest**

Substantial information, regarding resistance in storage insects to pesticides is available in the world. The problem of resistance has grown from 3 species in 1960, through 8 in 1964, 14 in 1970, 19 in 1979, 23 in 1984 (Champ,1986). About 102 pesticides and related compounds (18 chlorinated hydrocarbons/pyrethin, 14 synthetic pyrethroids, 43 organophosphorus, 5 carbamates, 5 juvenile hormone mimics, 1 organo- tin compound, 1 organosulfite, 12 fumigants) have shown resistance to grain pests. Information is still not comprehensive for Asia. Uptill now only 3 stored grain pests have been found resistant to insecticides in Pakistan.

### 9.1.2 Rodenticides

Variation in sensitivity to warfarin has been reported in different populations of Karachi (Greaves and Rehman, 1977). They also considered the Sindh populations of *Bandicota bengalensis* as more tolerant to warfarin and could not obtain complete mortality of them until 41 days of exposure to 0.025 % of the compound. According to Hussain (1999), rat population naive to anticoagulant rodenticides in no choice feeding resulted in complete mortality of 10 males after 6-day feeding period. However, one female that survived after 5-day feeding on 0.003 % warfarin was exposed to 0.025% warfarin survived following consumption of 79.1 mg /kg of warfarin. This suggests that tolerant individuals existing in the nature may be selected by killing of the susceptible in the population after the treatment of anticoagulants. It could be speculated that unchecked use of anticoagulant rodenticides could select a resistant population of bandicot rat, in a similar manner to UK, Europe, and USA and elsewhere where there has been resistance to different rodenticides.

### 9.1.3 Fungicides and Herbicides

Very little work has been done on resistance to fungicides in Pakistan. Some work is underway at Cereal Disease Research Institute, NARC Islamabad. On the basis of Co- efficent of Mycelial Growth Inhibitor (CMGI) sensitive isolates (CMGI value of 0.9 or more),intermediate (less than 0. 9 and more than 0.4) and resisatnt (0.4 or less) of *Phytopthera infestans* to metalaxyl were recorded from potato growing areas of Pakistan during 1997-9. The highest frequency of resistant isolalets in 1997-98 was observed from the Punjab (17%) and lower frequncy from Azad Jammu Kashmir and Kaghan valley (6.2 and 8.3 % respectively) The pattern changed during next year (1998-99) and frequency of resistant isolates decreased to 4 % in the Punjab and increased to 107 % in Kaghan valley (Batool, et al., 1999).

Resistance in weeds is also recent but is now detected with increased frequency. LeBaron and McFarLand (1990) found herbicide resistant weeds to be 273. Weeds like *Ranunculus acris* to 2, 4-D in Germany, *Erechtites hieracifolia* and *Commelina diffusa* to 2,4-D in Hawaii and *Cynodon dactylon* to TCA and dalapon in Hawaii are known to be resistant ( FAO,1970). According to Georghiou, (1983) 2 species of dicot and 13 of monocot showed resistance to the triazine herbicides in the world. No work has been done in Pakistan.

**Table 12: Resistance in Insect Pests to insecticides in Pakistan**

| Species / Pesticide | Locality | References |
|---|---|---|
| **Coleoptera** | | |
| Tenebrionidae | | |
| *Tribolium castaneum* (Herbst.) | | |
| Maiathion | allover Pakistan | Irshad & Gillani (1989) |
| | | Alam et al. (1991) |
| Fenetrothion | Karachi | Alam et al. (1991) |
| Actellic | Karachi | Alam et al. (1991) |
| Phosphine | Karachi,Mansehra | Taylor, (1986), Irshad & |
| | Okara | Iqbal, (1994), |
| **Dermestidae** | | Iqbal, (1994), Alam et al. |
| Trogoderma granarium Everts | | (1991) |
| Phosphine | Muzffargarh, Karachi, | |
| | Multan | Alam et al. (1991) |
| **Curcullonidae** | | |
| Sitophilus oryzae L. | | |
| Maiathion | Attock, Chakwal, | |
| | Faisalabad, Rawalpindi, | Irshad & Gillani (1992) |
| | Multan, D.I Khan, | |
| | Abbottabad, Karachi, | |
| | Islamabad | |
| Fenetrothion | Karachi, | |
| Actellic | Karachi, | Alam et al. (1991) |
| Phosphine | Karachi, | Alam et al. (1991) |
| **Bostrychidae** | | Alam et al. (1991) |
| Rhyzopertha dominica F | | |
| Malathion | Karachi, | |
| Fenetrothion | Karachi, | Alam et al. (1991) |
| Actellic | Karachi, Sargodha | Alam et al. (1991) |
| Phosphine | Hyderabad, Mashehra, | Taylor, (1986), |
| | Lahore, Peshawar, | Taylor, & Halliday, (1986), |
| | Multan, Karachi. | Alam et al. (1991) |
| **Leidoptera** | | |
| **Noctuidae** | | |
| *Heliocoverpa armigera Hubner* | | |
| Cypermethrin | Southern Punjab, | |
| | Hyderabad, Dadu, Kaghan. | Ahmad, et al. (1997) |
| Deltamethrin | Southern Punjab, | |
| | Hyderabad, Nawabshah, Dadu. | -do- |
| Cyfluthrin | –do- | |
| Bifenthrin | Southern Punjab, Hyderabad, | -do- |
| | Dadu, Kaghan. | -do- |
| Lembdacyalothrin | –do- | |
| Endosulfan | Central & southern, | -do- |

| Species / Pesticide | Locality | References |
|---|---|---|
| | Punjab, Muzaffrabad, Kaghan, Hyderabad. | Ahmad, et al. (1995) |
| Monocrotophos | Southern Punjab, Kaghan, Hyderabad. | -do- |
| Chlorpyrifos | –do- | |
| Profenofos | –do- | -do- |
| Thiodicarb | Central & southern Punjab, | -do- |
| | Islamabad, Kaghan. | -do- |

## 10. Pesticide misuse (environmental and health effects)

### 10.1 Consequences of reliance on chemical control

A comprehensive study (UNDP, 2001) provides a first assessment of the effects of pesticides on human health, natural resources and the environment. Most serious among these are occupational health problems as a direct consequence of pesticide applications (Table-13). In fact, in terms of health hazards from pesticides Pakistan occupies a disadvantageous place (Qasmi, 1997). Over- and misuse of pesticides have led to tremendous economic losses and hazards to human health. It is estimated that annually thousands of farmers and farm workers are poisoned from exposure to pesticide (Tahir, 2000). Pesticide effects in terms of sickness, loss of workdays or treatment costs, nearly affect two thirds of all surveyed households.

**Table-13: Quantitative Evidence of Externalities of Pesticide use in Pakistan**

| | | |
|---|---|---|
| Exposure during application at farm level [1)] | - Households affected per season<br>- Work days lost per crop season per person<br>- Health treatment costs per person<br>- Number of deaths | 63%<br>2-90 days<br>100-3000 Rs/year<br>1/8000 households |
| Exposure during cotton harvest [2)] | - Pickers experienced sickness<br>- Average work days lost per crop season per person<br>- Treatment costs<br>- Value of Work lost | 87%<br>5<br>105 Million Rs.<br>660 Million Rs. |
| Exposure at local pesticide refilling facilities [3)] | - Labourers experiencing sickness<br>- Work days lost per year per person<br>- Treatment cost Value of Work lost | 50%<br>6 days<br>0.46 Million Rs.<br>0.09 Million Rs. |

1) Estimated for 217 million households of 9 major cotton districts in Punjab.
2) Estimated for 5127 thousand tons of cotton picked by 2.6 million women
3) Estimated for 1000 labourers working at 25 plants in Multan City

Source: UNDP 2001

Information on pesticides poisoning in Pakistan is limited. However, an overview of some of the reports of acute and chronic pesticides poisoning is given (Table-14 and 15).

**Table-14: Outbreak Reports**

| Sl. No. | Year | Pesticides | Description |
|---|---|---|---|
| 1. | 1963 | Mercury | - 34 people were affected<br>- 4 people died after eating grain treated with mercury |
| 2. | 1972 | Phorate | - Workers with improper clothing<br>- Unloading a consignment of phorate |
| 3. | 1976 | Malathion | - Field workers of malaria control<br>- Excessive skin contact<br>- 37 percent of field workers (2,800) affected |
| 4. | 1984 | Endrin | - Shipment of contaminated sugar<br>- Acute convulsions<br>- 194 affected in 18 villages: 19 died |

Source: Feenstra *et al.* 2000

**Table-15: Report from Hospitals and Doctors**

| Sl. No. | Year | Pesticide (s) | Description |
|---|---|---|---|
| 1. | 1972 | Organophosphates, esters, DDT | - Mayo Hospital, Lahore<br>- 12 children of junk dealers seriously Affected |
| 2. | 1976-85 | Organophosphates | - Postgraduate Medical Centre, Karachi<br>- 755 cases<br>- 480 tried to commit suicide<br>- 265 accidental poisoning: 73 died |
| 3. | 1986 | Various insecticides | - Nishtar Hospital, Multan<br>- 84 acute insecticide poisoning cases<br>- 77 percent accidental: 33 died |
| 4. | ---- | ---- | - Interviews with doctors<br>- 448 pesticides poisoning cases<br>- 205 accidental<br>- 243 suicidal: 85 deaths |

Source: Jabbar and Mohsin, 1992.

## 10.2 Community Survey

In a pilot survey in some cotton growing districts, male (pesticides sprayers) and female (cotton pickerts) were randomly selected to find the acute health effects of pesticides. Of the respondents, 77 percent experienced health problems; 16 percent complained of blisters on the skin, 42 percent of vomiting, 49 percent of headache and 26 percent of itching and allergic reactions (Jabbar and Mohsin, 1992).

### 10.3 Cause of Acute Poisoning

In Southeast Asia in general, and in Pakistan in particular, the cause of pesticides poisoning is mainly occupational. Suicide with pesticides is also a major problem. Lack of precaution and regulations for storage make these poisonous chemicals often easily accessible for intentional poisoning. However, in Pakistan knowledge on this subject is limited due to socio-cultural and religious factors, which makes research difficult (Feenstra *et al*., 2000).

Famous hospital in Pakistan reported that most common poison used for suicides were pesticides (up to 40 percent). Female cases are mostly higher (53-59 percent). The women attempting suicide were younger (between 11 and 30 years) and more often married (Matin, 2002).

## 11. Pesticide residue on food, water, soil, environment *etc.*, and methods of monitoring

### 11.1 Pesticide Residues in Food and the Environment

Although monitoring of residues in domestically consumed food products is rather irregular the few available analyses provide a cause for concern. In one recent study (Ahad et al, 2001) samples were taken of four different vegetables: okra (*Hibiscus esculentus*), brinjal (*Solanum melongena*), gourd (*Citrullus vulgaris*) and bitter gourd (*Momordica charantia*) (see table-16). Not surprisingly, pesticide residues were found in all vegetable samples. In 63% of the samples contamination exceeded the respective maximum residue limits (MRL). Pesticides found to be above their MRL values were carbofuran, dichlorvos, methyl-parathion, fenitrothion and azinphos-methyl. However, pyrethroids such as deltamethrin and cypermethrin recommended for use on cotton were not detected in any sample.

**Table-16: Pesticide Residues in Food Chain**

| Type of Sample | % of samples contaminated | % of samples >MRL |
|---|---|---|
| Vegetables (Brinjal, okra, bitter gourd, gourd) | 100 | 60 |
| Fruits (apples) | 100 | 60 |
| Cotton seed oil | 100 | 65 |
| Cotton seed cake | 100 | 65 |
| Shallow ground water | 100 | 30 |

Source: Ahad et al, 2001

### 11.2 Chronic Pesticide Poisoning in Pakistan (a few examples)

The acetylcholinesterase (AChE) levels in blood can be used to measure chronic poisoning with organophosphorus pesticides. Measuring the amount of pesticides residues in fatty tissues, maternal milk and blood is the other method.

In Multan, AChE levels were measured in cotton pickers, who pick the first cotton when insecticides are still being sprayed. The study showed that out of 88 females. Only one percent had normal AChE level in their blood. In 74 percent of the women there was 12-50 percent inhibition of AChE and 25 percent women had an inhibition of 50-88 percent. This is a serious problem, as an inhibition of 30 percent can already be fetal. Out of 33 male cotton workers, 12 percent had normal AChE levels, 51 percent had blood AChE inhibition between 12-50 percent and 36 percent had inhibition between 50-88 percent (Masud, 1991).

**Table-17: Pesticides Residues in Blood and Breast Milk of Cotton Pickers fromMultan, Pakistan**

| Pesticid Detected | Blood (ppm) | Milk (ppm) | Hazard to Humans (FAO/WHO) |
|---|---|---|---|
| **Synthetic Pyrethroids** | | | |
| - Alphamethrin | Traces - 0.340 | 0.325 - 1.210 | Moderately Toxic |
| - Cyhalothrin | Traces - 2.471 | 0.241 - 0.629 | Moderately Toxic |
| - Cyfluthrin | ----- | Traces | Moderately Toxic |
| - Cypermethrin | Traces - 1.201 | Traces - 0.327 | Moderately Toxic |
| - Deltamethrin | Traces - 0.780 | ----- | Moderately Toxic |
| - Fenpropathrin | 0.012 - 2.528 | ----- | Moderately Toxic |
| - Fenvalerate | Traces - 0.821 | Traces | Moderately Toxic |
| **Organophosphates** | | | |
| - Chlorpyriphos | Traces | 0.012 - 0.417 | Moderately Toxic |
| - Dimethoate | 0.310 - 1.178 | 0.510 - 2.964 | Moderately Toxic |
| - Methamidophos | Traces - 1.020 | 0.712 | Highly Toxic |
| - Monocrotophos | Traces - 1.317 | 0.302 - 2.050 | Highly Toxic |
| - Profenofos | Traces - 1.618 | Traces - 0.810 | Moderately Toxic |
| - Quinalphos | Traces – 1.590 | 0.558 – 1.003 | Moderately Toxic |
| **Organochlorines** | | | |
| - a-BHC | ----- | 0.019 | Moderately Toxic |
| - g-BHC | 0.027 – 0.640 | 0.410 | Moderately Toxic |
| - d-BHC | 0.210 – 0.291 | 0.114 | Moderately Toxic |
| - Dieldrin | Traces | ----- | Highly Toxic |
| - Endosulfan | Traces – 1.032 | 0.134 – 0.732 | Moderately Toxic |
| - p,p-DDT | Traces - 0.640 | Traces – 0.903 | Moderately Toxic |
| - o,p-DDD | Traces – 1.440 | 0.413 – 1.410 | Moderately Toxic |
| - p,p-DDE | Traces – 0.432 | Traces – 1.210 | Moderately Toxic |
| - Diafenthiuron | ----- | 0.767 – 5.230 | Moderately Toxic |

Source: Masud, 1991, and Masud and Parveen, 1998

In another study, serum AChE levels in males aged 18-80 were measured in a village in the Punjab. It was reported that out of 45 males, 3 had quite low AChE levels, whereas 6 had moderately low levels. Serum AChE from 17 control subjects was normal. Although the selection procedure of villagers (exposed) and control (non-exposed) subjects was not described, the author concluded that the low levels of serum cholinesterase in villagers were due to actual exposure to organophosphorus pesticides used in the agricultural fields around the village (Khan and Khan, 1991).

Pesticides monitoring studies on blood samples of cotton pickers in Multan district in 1992 showed that 22 samples out of 25 (88 percent) contained pesticides residue. The different pesticides found were cypermethrin, methamidophos, profenofos, endosulfan, cyhalothrin, dimethoate, monocrotophos, gamma-BHC, deltamethrin, DDT, DDD and DDE, chloropyrifos, fenpropathrin and alphamethrin.

In 29 out of 40 (73 percent) samples of human milk, residues of pesticides were found in 1992 and 1993 (Masud and Parveen, 1998) (Table-17).

In a study in Karachi, thirty random blood samples were taken for pesticides determination from three different laboratories. All samples were found to contain pesticides. Organochlorine compounds were the most frequently found chemical residues (Matin, 2002).

# 12. Past experience and present status of IPM in Pakistan

## 12.1 Status of IPM in Pakistan

In Pakistan, research and development on IPM were initiated in 1971 by PARC-IIBC station, Rawalpindi (now CABI Bioscience Regional Centre-Pakistan). A seven-year project on cotton bollworms, a three-year project on cotton whitefly, and an institutional three-year support project on IPM, funded by Asian Development Bank, were the first IPM projects. Similarly, other IPM activities like introduction of natural enemies of sugarcane *Pyrilla* in Sindh and NWFP, cultural control of Gurdaspur borer in sugarcane, pheromones (methyl eugenol) to control fruit fly and effective & environment friendly use of pesticides against cotton pests, were successfully carried out on large scale by various researchers. *Coccinallids* sp was used to control mango hopper and apple scales. Biological control based IPM technologies for cotton, sugarcane, maize, fruits and vegetables have also been developed recently. A project on "Cotton IPM Implementation through Training of Trainers (TOT) and Farmers Field Schools (FFS) were also undertaken in the Punjab by CABI Bioscience Centre (Poswal and Williamson, 1998). At present the centre is running IPM projects on fruits and vegetables in Balochistan and NWFP provinces.

A number of plant protection related institutes in the National Agricultural Research System (NARS) are involved in developing IPM technologies for major crops. IPM technologies comprising of cultural practices, resistant varieties, use of bio-control agents and selective use of pesticides have been developed for managing rice pests in Pakistan. The technology is being disseminated on farmers' fields and pesticide application has considerably been reduced in IPM fields.

Many progressive farmers and Sugar Industries are successfully rearing and augmenting *Trichogramma* sp. and *Chrysoperla* sp. to control pests of cotton and sugarcane. *Chrysoperla* sp. has played an important role in the control of whitefly during the last cotton seasons in the Punjab where chemical control measures had failed. Control of *Helicoverpa* sp. has been demonstrated on small scale with *Trichogramma* sp. on chickpea, sunflower and cotton. Pesticides of plant origin like "Triaimol", "Nimboli" and "Nimbokil" have been locally developed and are being used to control important pests.

## 12.2 National IPM Programme

Although, work on research and development, and IPM practice was initiated a long time ago in Pakistan and has gained momentum in 1990s through both national and international cooperation projects, IPM was not institutionalized as in other countries. It needed to be placed as a coherent programme including all components at the federal and provincial level. There is awareness and commitment at the highest level in the Government to rationalize the use of pesticides and to adopt the alternative approaches and strategies based on IPM rationale. To achieve this, it was necessary to translate the Governments strategy into action plan whereby the IPM moves from project approach to a viable and sustainable national programme.

IPM was identified as a key element of sustainable agricultural development in the Policy and Strategy for Agriculture developed by Government of Pakistan as part of its response to increasing misuse/overuse of pesticides and their negative impacts on the society in the Country. A consultative process among potential stakeholders was begun, which culminated in the launching of the National Integrated Pest Management Programme (Nat-IPM) in December 2000.

The National IPM Programme (www.nat-ipm.gov.pk) is led by the National Focal Point for IPM as the overall Coordinator and assisted by five component coordinators, one each for policy analysis, education, information dissemination & public awareness, research & development and field implementation (Annex-VII). The Nat-IPM works under the guidance of IPM Inter-Ministerial Advisory Committee (IPM-IMC) and is technically supported by the National Expert Committee (NIPMEC). It keeps close liaison with NIPMEC members, relevant federal and provincial research and extension departments, committees and IPM units. It encourages interaction between various institutions.

The overall goals of the Programme are established in the light of the policy statement given in the policy and strategy document, "Agricultural Strategies for the First Decade of New Millennium" issued in June 2000. The agreed IPM programme is being implemented by partner organizations and coordinated by Nat-IPM. The Programme operates from National Agricultural Research Centre Islamabad under the auspices of Pakistan Agricultural Research Council – an apex body of the Ministry of Food, Agriculture and Livestock. Various federal and provincial public sector research and development organizations, NGOs and international organizations are participating actively in the Nat-IPM activities. The National IPM Programme has following vision and objectives:

**i. Vision Statement:**

Achieve environmentally sound and sustainable agricultural production ensuring food security, social equity, self-reliance and economic welfare of the producer.

**ii. Goal:**

Large scale and sustainable implementation of IPM in Pakistan, rationalizing the use of pesticide while maintaining production levels and increasing farmers' profit.

**iii. Objectives:**

The overall objective is to ensure better coordination and adoption of effective IPM approaches that are more responsive to the needs of practitioners and clients.

**iv. Specific Objectives**

a. Enhance communication and coordination and strengthen collaboration among IPM stakeholders.
b. Promote the adoption of holistic, ecologically sound and issue oriented IPM approaches.
c. Facilitate the formulation and execution of projects, ensuring optimum use of available resources and maximum impact of IPM efforts on productivity of cropping systems.
d. Communicate the results of these efforts, the benefits of IPM and relevant policy decisions to the public widely.
e. Establish International Linkages.

The National IPM Programme is pursuing its goal and objectives through establishment of following components:

i. Policy analysis
ii. Education
iii. Information dissemination and public awareness
iv. Research and development
v. Field implementation (IPM Practice)

The Programme is undertaking following strategic steps and actions to ensure progress of IPM at the National level within the framework of above components:

i. Facilitate review of plant protection and IPM policies.
ii. Introduce/promote IPM philosophy in educational institutions by pursuing respective departments for inclusion of IPM policies and syllabi in schools, colleges and universities.
iii. Enhance public awareness and establish IPM information network (IPMIN) to provide updated science based information to the stakeholders.
iv. Promote and coordinate research and development in IPM including study of various agro-ecosystems and indigenous knowledge.
v. Facilitate and coordinate IPM implementation by provincial extension departments and promote cooperation and collaboration between institutions and provinces.

### 12.2.1 Key Issues and Challenges

The National IPM Programme in Pakistan faces following challenges:

i. Make participatory IPM training available to a larger number of farmers. Within these training programmes special attention needs to be paid to enabling and encouraging

farmer initiative to continue experimenting after their Farmer Field Schools (FFS's) and spread IPM through their communities.

ii. Develop special programmes to ensure involvement of women in IPM activities at the grass root level.

iii. Improve the policy environment for IPM through reform of policies and practices that directly or indirectly provide irrational support to chemical pest control.

iv. Reform crop protection research and extension to be responsive to support farmer initiatives in IPM.

v. Enhance coordination and cooperation among government, NGO's, donors and international organizations to achieve a high degree of coherence among different projects and initiative to optimize the benefits.

vi. Integrate participatory IPM into policies on sustainable agriculture and link the FFS approach to other development fields such as natural resource conservation, and community development etc.

The Nat-IPM is developing task forces, led by individual research and development organizations, to organize a coherent response to key issues and challenges affecting IPM research and implementation in the country. Under the umbrella of National IPM, currently initiatives are being executed with international support in an integrated strategy to forge a unified sustainable IPM Programme:

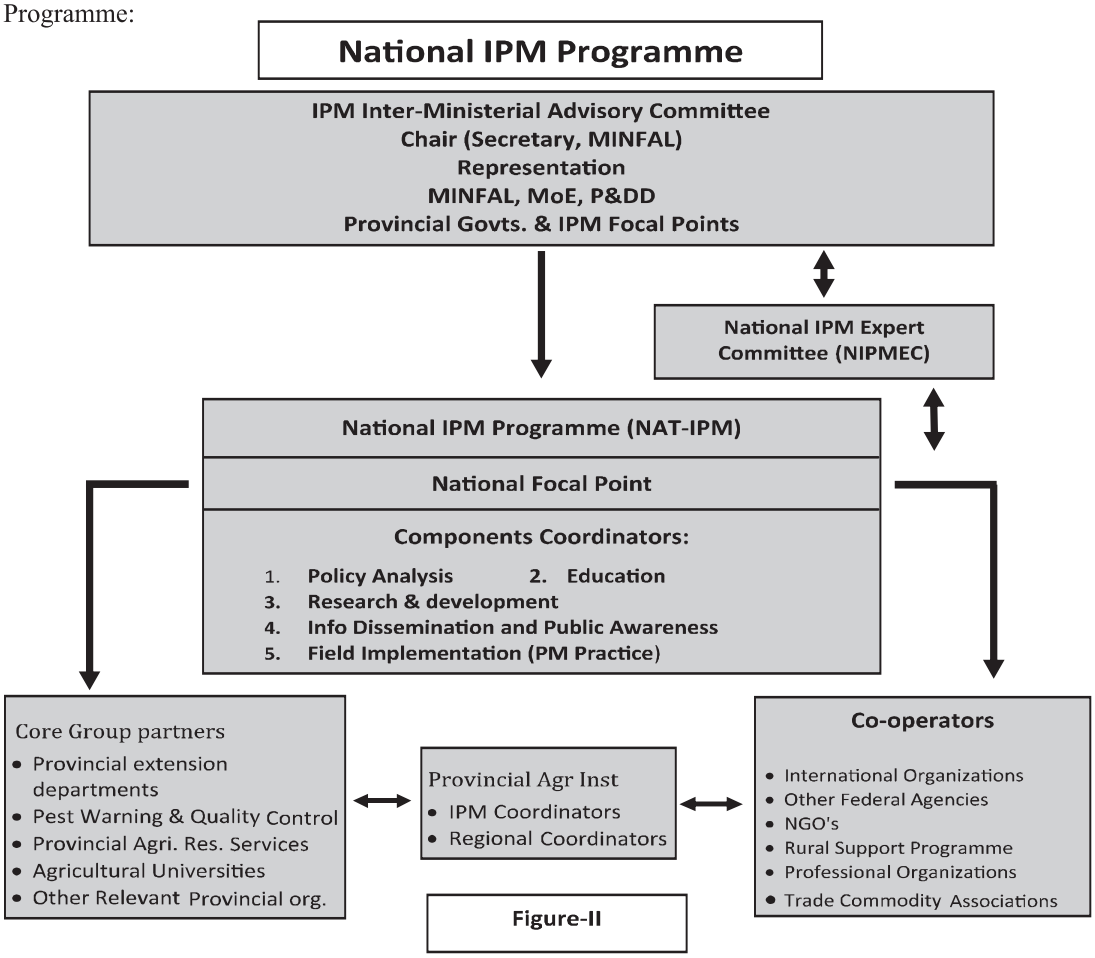



Figure-II

### 12.2.3 Overall Progress of National IPM Programme, NARC, PARC

**Human Resource Development under IPM based FFS approach in Pakistan**

In order to rationalize the pesticide use and other inputs, the National IPM Programme, NARC/ PARC has contributed in following two ways:

**1. Direct Contribution (Implementation of IPM Projects):**

- Trained 48,815 Farmers through 2031 Crop Season long Farmer Field Schools (FFSs) & Women Open Schools (WOSs) in the Punjab, Sindh, NWFP and Balochistan on Rice, Cotton, Fruits and Vegetable crops.
- Development of country–wide trained cadre of 901 IPM Facilitators belonging to Agriculture Extension, Research, IPM Farmer Organizations and NGOs through 34 Crop season-long Training of Facilitators/ Trainers courses (ToF/ ToT).
- Organized 24 IPM Farmer Organizations (Registered at district and regional level), who are working on sustainable basis.

**2. Collaborative Contribution:**

- Provided technical backstopping and support to Federal, Provincial Institutions, NGOs and Farmer Organizations in the implementation of IPM/FFS based projects, resulted in trained cadre of 2129 IPM facilitators through 82 ToF.
- Capacity building of 1,05,077 Farmers (including man & women) through 5211 Farmer Field Schools (FFSs) & Women Open Schools (WOSs) throughout the country.

### 12.2.4 Output & Benefits/Impact of IPM Activities

*National IPM Programme is executing a five years PSDP Project titled "National Integrated Pest Management (Nat-IPM) Project". It is being implemented as per its objectives and targets mentioned in its PC-I. The main objective of the project is large scale and sustainable implementation of IPM in Pakistan, rationalizing the use of pesticides while maintaining production levels and increasing farmer's profit.*

An IPM impact assessment study was carried out in Feb, 2009. Some findings of the study are given as under:

**1. At National Level *(Data Source: Agricultural Statistics of Pakistan 2006-07)***

- The average pesticides reduction during the years i.e. 2005, 2006 and 2007 is **38.42%** as compared to the consumption of pesticides during 2004.
- The average cotton production [13380.1 (000, bales)] during the years 2005, 2006 and 2007 increased by **33.16 %,** as compared to the cotton production 10047.7 (000, bales) in 2004
- *(Such development / change in the pesticide consumption and cotton production have transpired due to the GOP initiatives on implementation of IPM-FFS based activities in Pakistan, these activities were initiated in 2001, boosted up in 2005 and onward.)*

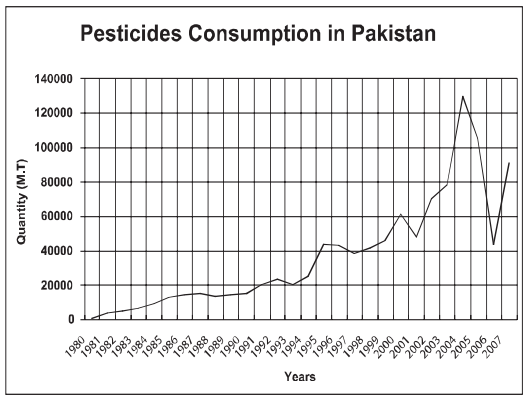
**2. AT IPM/FFS trained Farmer's Field Level (*Source: Primary Data, Nat-IPM, NARC)***

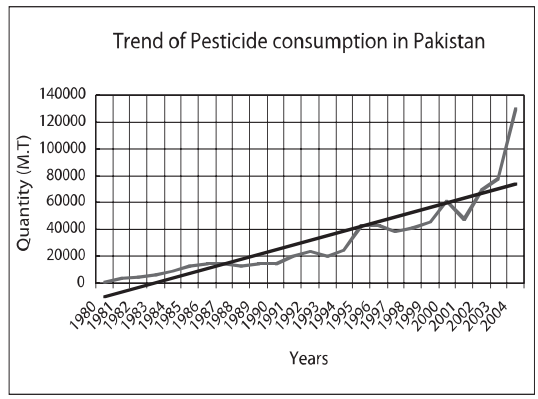
- Farmers trained in IPM through Farmer Field Schools (FFS) have reduced pesticide use overall by **72.81%** as compared to the non FFS farmers.
- With reference to Cotton crop, FFS Farmers have reduced an average pesticide use by **58.06%** as compared to Non FFS Farmers.
- FFS Farmers have achieved **10.5%** more cotton yield / acre, as compared to non FFS Farmers.
- FFS Farmers have achieved more Net profit by **25.54%** as compared to Non FFS Farmers.
- As compared to Non FFS Farmers, the FFS farmers reduced input cost by **73%** expenditure on Pesticides, **11%** on Fertilizers and **39%** saving on Irrigation expenses.

### 12.2.5 IPM Impact Assessment Study Report part

**1. Impact on the trend of Pesticides consumption (Import &Production)**

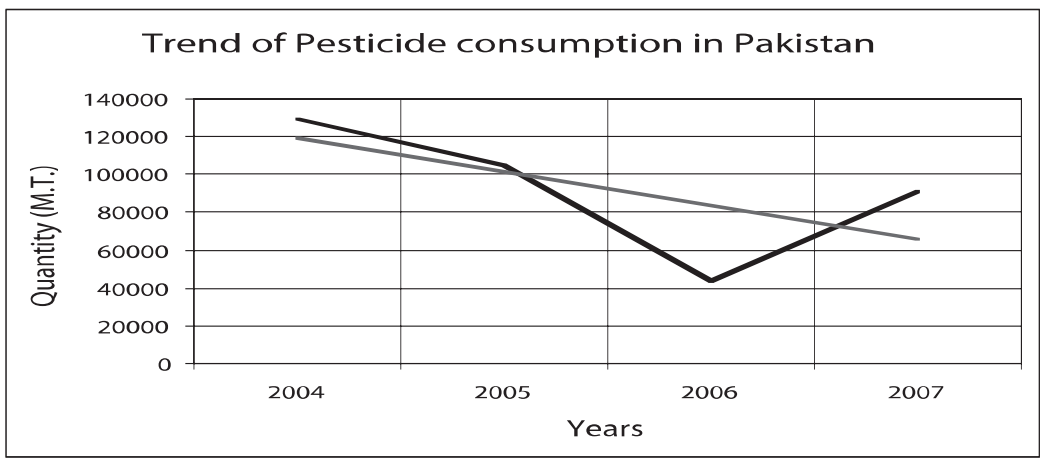
(a) The trend of pesticides consumption since 1980 (665 M.T) to 2004 (129598 M.T) remained continuously increased. However from 2005 and onward up to 2007 it is decreasing.




Source: Agricultural Statistics of Pakistan 2006-07, MINFAL

(b) The average pesticides reduction during the years i.e. 2005, 2006 and 2007 is **38.42%** as compared to the consumption of pesticides during 2004. Such development has occurred due to the change in the Government policies and initiatives in implementation of IPM-FFS based activities in Pakistan. These activities were initiated in 2001, were boosted up in 2005 and onward. Therefore, the change in the trend of pesticide consumption has transpired due to the above mentioned intervenes. However, the other factors might have a part in this change can be observed by a thorough study on impact assessment may be conducted by any professional / social scientist (Third Party).

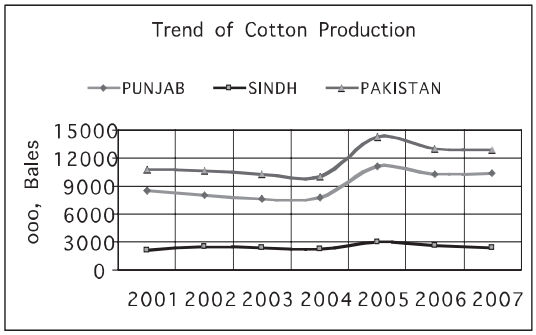



Source: Agricultural Statistics of Pakistan 2006-07, MINFAL

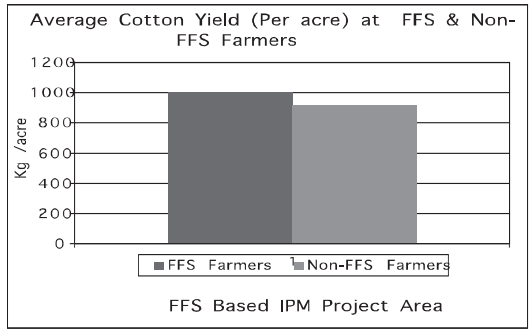
### 12.2.6 The Trend of Cotton Production

(a) The trend of cotton production in Pakistan remained decreasing from 2000 to 2004. But during the years 2005, 2006 and 2007, the average cotton production [13380.1 (000, bales)] increased by **33.16 %,** as compared to the cotton production 10047.7 (000, bales) in 2004. Similarly, in the Punjab and Sindh it was increased by **37.48 %** and **19.83 %** respectively.

(b) Farmers trained in IPM through Farmer Field Schools (FFS) have achieved **10.5% more cotton yield / acre**, as compared to non FFS Farmers.




Source: Agricultural Statistics of Pakistan 2006-07,

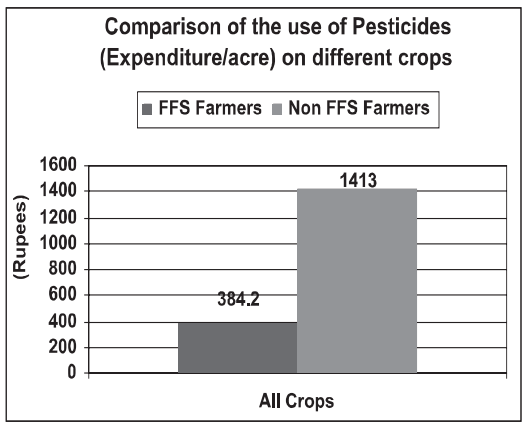


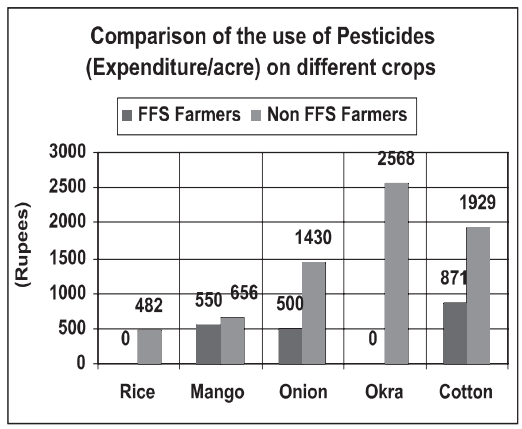

Source: Primary Data, Nat-IPM, NARC

### 12.2.7 Use of pesticides reduced by IPM/FFS trained farmers

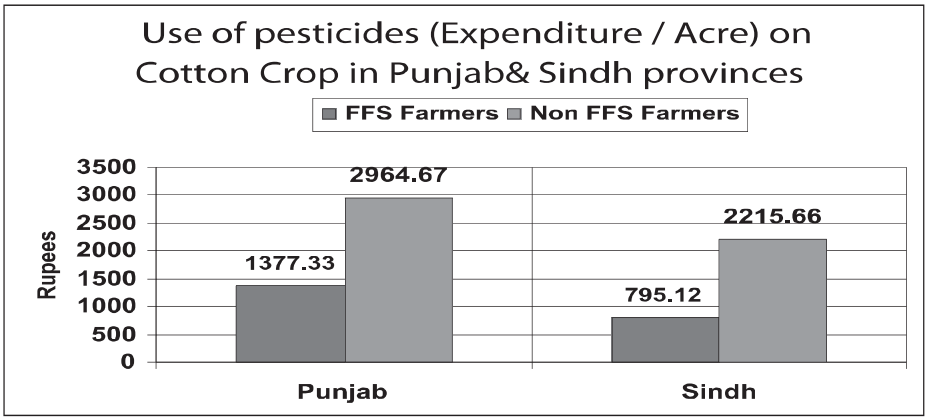
(a) Farmers trained in IPM through Farmer Field Schools (FFS) have reduced pesticide use overall by **72.81%** as compared to the non FFS farmers. Crop wise pesticide reduction is 100% in both Rice & Okra crops, 65% in Onion crop, 58.06% in Cotton crop and 16.16% in Mango orchards.

(b) With reference to Cotton crop, FFS Farmers have reduced an average pesticide use by **58.06%** as compared to Non FFS Farmers. In the project area of Punjab and Sindh, the pesticide use on cotton crop is reduced by **53.54%** and **64.11%** respectively.



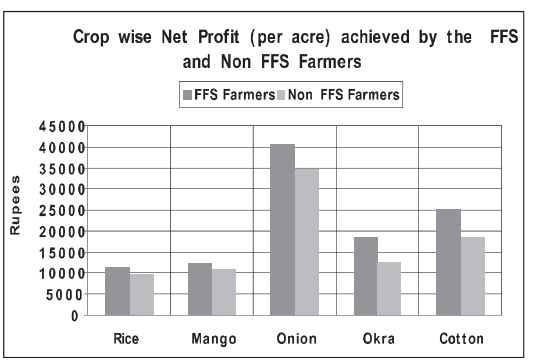

Source: Primary Data, Nat-IPM, NARC

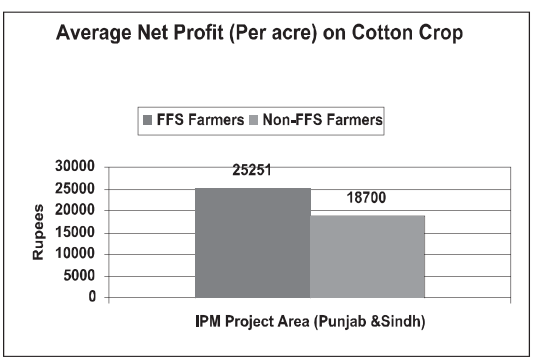



Source: Primary Data, Nat-IPM, NARC

### 12.2.8 Impact on Farmer's Net Profit

(a) Farmers trained in IPM through Farmer Field Schools (FFS) have achieved more net profit by **25.54%** as compared to Non FFS Farmers. Crop wise results showed that, they have got more net profit by 48.7% in okra, 35% in cotton crop, 18.38% in onion, 17.8% in rice crop and 12.36% more net profit in mango production.



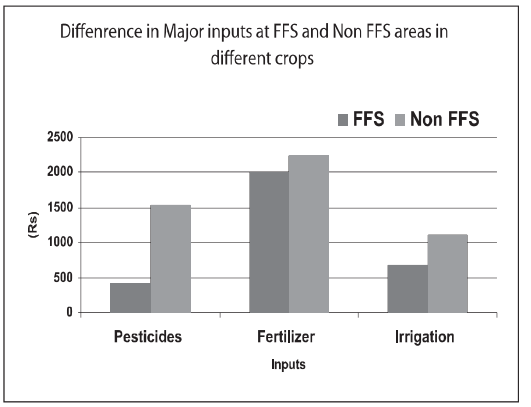

Source: Primary Data, Nat-IPM, NARC

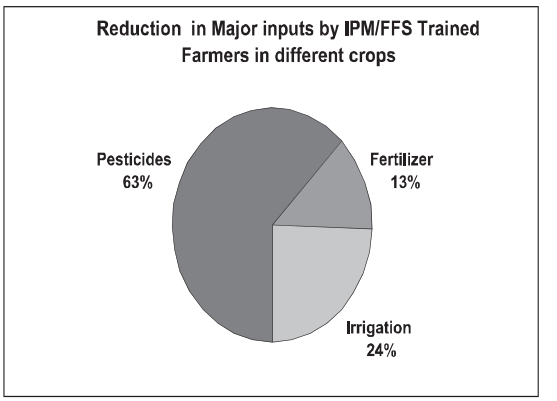
### 12.2.9 Impact on cost of production

(a) As compared to Non FFS Farmers, th**e FFS** trained farmers have reduced input cost by **73%** expenditure on Pesticides, **11%** on Fertilizers and **39%** saving on Irrigation expenses.
   (i) With reference to cotton crop the reduction in Pesticides expenditure is **59%**, in fertilizers it is **20%** and in irrigation reduction is **35%**.
   (ii) In mango orchards FFS farmers have reduced pesticide expenditure by **16%**, while for getting better yield they have used more fertilizers by **58%** as compared to Non-FFS Farmers. Even then they have achieved 12.36% more net profit.
   (iii) In Rice crop the reduction in pesticides expenditure is **100%**, in fertilizers it is **7%.**
   (iv) In okra crop the reduction in pesticides expenditure is **100%**, in fertilizers it is **19%** and in irrigation reduction is **40%**.
   (v) In onion crop the reduction in pesticides expenditure is **65%**, in fertilizers it is **19%** and in irrigation reduction is **52%**.

(b) The proportional values of the expenditures reduced by the IPM/FFS trained farmers are shown in the chart. Where out of 100, the reduction in pesticides expenditure is 63%, in fertilizers it is 13% and in irrigation reduction is 24%.

(c) FFS trained farmers have reduced the cost of production by practicing IPM approach in various crops. They have reduced 30.66% in okra crop, 25.65% in cotton, 23.61% in onion and 12.28% in rice crop. While they have incurred more input cost 30.44% for mango crop, even then they have got more net profit by 12.36%.




Source: Primary Data, Nat-IPM, NARC

***Source: IPM impact study report (Feb, 2009), and information is based on the Agricultural Statistics of Pakistan 2006-07 and Primary Data, Nat-IPM, NARC).***

The National IPM Programme, PARC and other likeminded organizations like KHOJ-Society for People Education (www.khoj.edu.pk) are observing No Pesticides Day. The detail of the No Pesticides Day 2009 observed by the National IPM Programme with the slogan *Say! No to Pesticides* is attached as **Annexure-VIII**.

### 12.2.10 IPM Community Organizations (Registered) Developed in Pakistan

| | | |
|---|---|---|
| 1 | **SOFT** | Pakistan- Society of Facilitators and Trainers, Islamabad www.softpakistan.org |
| 2 | **LIFE** | Linkages Initiatives for Farmers Educations, Gilgit |
| 3 | **KWA** | Kissan Welfare Association, Bahawalpur |
| 4 | **KWA** | Kissan Welfare Association, Muzafar Abad, AJK |
| 5 | **KF** | Kissan Foundation, Rahim Yar Khan |
| 6 | **KF** | Kissan Foundation, Multan |
| 7 | **KF** | Kissan Foundation, Muzafargarh |
| 8 | **FIDA** | Farmer Integrated Development Association, Vehari |
| 9 | **KDA** | Kissan Dost Association, Khanewal |
| 10 | **KDO** | Kissan Dost Organization, Bahawalpur |
| 11 | **SAO** | Sustainable Agriculture Organization, Khairpur |
| 12 | **WADO** | Women Agriculture Development Organization, Khairpur |
| 13 | **WADO** | Women Agriculture development Organization, Balakot, |
| 14 | **FFO** | Farmer Facilitator Organizations, Khairpur |
| 15 | **IDF** | Indus Development Foundation, Khairpur |
| 16 | **SAFE** | Sustainable Agriculture & Friendly Environment, Shaheed Benaziarabad |
| 17 | **RADO** | Regional Agriculture Development Organization, Noshero Feroze |

| | | |
|---|---|---|
| 18 | **NAFO** | Natural Agriculture Farming Organization, Sanghar |
| 19 | **FAIDO** | Farmer Agriculture Innovative Development Organization, Mirpur Khas |
| 20 | **IFWA** | Indus Farmer Welfare Association, Ghotki |
| 21 | **GALA** | Ghotki Agricultural & Loyal Association, Ghotki |
| 22 | **MAWA** | Moan Jo Daro Agriculture Welfare Association, Larkana, |
| 23 | **SAFWA** | Sindh Agriculture Farmer Welfare Association, Sukkur |
| 24 | **RDSA** | Rural Development Support Association, Bala Kot |
| 25 | **SOFT** | Pakistan- Society of Facilitators and Trainers, Islamabad |
| 26 | **LIFE** | Linkages Initiatives for Farmers Educations, Gilgit |

## 13. Suggestions and recommendations specially on possibilities on work sharing

It has been argued that the United Nation has lost its due importance. Its significance is diminishing as most of the member countries are taking their own issues outside its frame work. Therefore, the regional arrangements like SAARC have become popular and it is assumed that the regional organizations are deeply concerned with all problems. SAARC has played an important role in promoting social and economic co-operation in the region.

### 13.1 Suggestions and Recommendations

- The SAARC countries should review mechanisms for strengthening the enforcement of existing legislation in pesticides for import, registration, formulation, distribution, advertising, usage and disposal. Legislation should be amended where health and the environment are endangered to an un-necessary high degree.
- Pesticides tax should be considered as an instrument of IPM Policy. Financing of control and monitoring may be assured by a targeted cess on pesticide products. The governments should be giving increased emphasis to create a favourable incentive system including the use of economic instruments in reducing uneconomic pesticide use and promotion of market mechanisms for the production of food and fibre with reduced pesticides use and safety measures or risk reduction.
- True costs including external costs of pesticides must be explicit to everybody for the benefits of respective country's people and the national economy. Hiding such information will cause unnecessary risks for the people and endanger the international competitiveness of the respective country's future export markets.
- The governments should create an enabling environment for transforming the existing pesticides market into a market for crop protection information. In this regard the role extension staff and NGOs in farm level extension work have to be strengthened. The governments should set targets for environmental quality and human health related to pesticides.
- The governments should support capacity building of economic analysis of pesticides use and assessment of externalities. IPM may be taken as farming approach rather than a commodity approach. Instead of having a separate research systems, IPM research should be agreed on common ecological framework among SAARC countries in support of local decision making.
- National IPM Programmes of the SAARC countries should develop strong coordination.
- Events like NO PESTICIDES DAY must be observed by all the SAARC countries.

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# 15. Appendix

## 15.1 Policies, ordinance, laws or regulations pertaining to pesticide use, registration *etc.*

## Annexure-I : Proposed agriculture pesticides act, 2005 (revised)

### Introduction

This Act is called as Agriculture Pesticides Act, 2005. It extents to the whole of Pakistan, Federal Administrative Territorial Authority, Northern Areas and its territorial waters, exclusive economic zone and historic waters. The Act will come into force at once.

### Important Definition:

(a) Adulterated in relation to a pesticide means a pesticide with which,

1. Spurious, deleterious or harmful substances have been mixed; or
2. Any substances have been mixed which either render it wholly or mainly ineffective for the purpose for which it is intended; or
3. Its physical and/ or chemical properties are so altered debased or corrupted so as to render it wholly or mainly ineffective.

(b) Active ingredient means the biologically active part of the pesticide

(c) Advertise means to promote the sale and use of pesticides by printed and/ or electronic media, signs, displays, gifts, demonstrates or word of mouth.

(d) Brand means the trade name applied for registration purposes by an importer, exporter or vendor of a pesticide for identification or tracking purposes and is shown on the label only.

(e) Banned means a pesticide for which all uses have been prohibited under this Act in order to protect human or animal health or the environment. It includes a pesticide (i) that has been refused approval for first-time use or has been withdrawn by its manufacturer or producer from the domestic market or is placed under consideration under the provisions of this Act and where there is clear evidence that such action has been taken in order to protect human health or the environment; (ii) or which is declared banned by the Federal Government; or (iii) is banned in the OECD, People's Republic of China or under FAO and World Health Organization guidelines.

(f) Department means the Federal Department of Plant Protection;

(g) Director General means the Plant Protection Advisor and Director General, Federal Department of Plant Protection;

(h) Environment means all natural surroundings and includes air, water, soil, their interrelationship as well as their relationship with human beings and any other living animal or organism; this definition is complimentary and in addition to the meaning in the Pakistan Environmental Protection Act, 1997.

(i) Expired pesticide means a pesticide for which the date of expiry as printed on the label has lapsed;

(j) Equivalence means the determination of the similarity of the impurity and toxicological profile, as well as the physical and chemical properties, presented by supposedly similar technical material originating from different manufacturers;

(k) Fake means, when used with reference to a pesticide, any substance claimed to be a pesticide carrying less than 30% of the active ingredient as required or is labeled to mislead as to its content's or which is an imitation of or sold under the name of another pesticide;

(l) FAO means the Food and Agricultural Organization of the United Nations;

(m) Federal Government means the Ministry of Food, Agriculture & Livestock;

(n) Formulation means the combination of various ingredients designed to render the product usable and effective for the purpose claimed and the form of the pesticide as purchased by users;

(o) Good agricultural practice includes recommended or authorized uses of pesticides for effective and reliable pest control.

(p) Government Analyst means a government analyst under the provisions of this Act.

(q) Guarantee means the statement indicating the strength, effectiveness and other qualities of a pesticide which an importer, manufacturer, formulator, vendor or person holding a pesticide in stock for sale is required to submit under the rules at the time of applying for the registration of the pesticide.

(r) Inspector means an inspector appointed under Section 22 of this Act.

(s) Ingredient means any material used in manufacturing or formulation of a pesticide.

(t) Label means any printed or graphic matter, and includes any written statement on a tag, leaflet, brand, stamp, mark or stencil attached to a container or wrapping material for retail packaging of a pesticide;

(u) Maximum residue limit means the maximum concentration of a residue that is legally permitted or recognized as acceptable in or on a food or agricultural commodity or animal feedstuff by FAO, USDA, OECD countries or China;

(v) Obsolete pesticide means a pesticide which no longer meets the registered specifications and can not be revalidated and is unsaleable or unusable.

(w) Off Specification means, when used with reference to a pesticide, any pesticide which when tested according to the prescribed methods is marginally different from its registered specifications and is still mainly effective for the purpose for which it is intended and its deficiency is not due to any intentional or deliberate act including physical and chemical characteristics, emulsion stability and the active ingredient contents vary + 50% of the FAO tolerance limits due to accidental reasons or weather conditions.

(x) Packaging means any container including to any protective wrapping used is to facilitate the safe delivery of the pesticide product.

(y) Person means any natural or legal entity and includes a person, an association of persons, firm, partnership, society, group, a public or private limited company, corporation, co-operative society or any other body corporate.

(z) Pesticide means any substance or mixture of substances intended for preventing, destroying or controlling any pest, including vectors of human or animal disease, unwanted species of plants or animals causing harm during or otherwise interfering with the production, processing, storage, transport or marketing of food, agricultural commodities, wood and wood products or animal feedstuffs, or substances which may be administered to animals for the control of insects, arachnids or other pests in or on their bodies. The term includes substances intended for use as a plant growth regulator, defoliant, desiccant or agent for thinning fruit or

preventing the premature fall of fruit, and substances applied to crops either before or after harvest to protect the commodity from deterioration during storage and transport but does not include a substance which is a 'drug' within the meaning of the Drug Act, 1976 or a 'hazardous substance' within the meaning of the Pakistan Environment Protection Act, 1997;

(aa) Pesticide laboratory means a laboratory notified or prescribed by the Federal Government.

(bb) Prescribed means prescribed by rules make under this Act.

(cc) Recipe means the 100% breakup of the registered technical material or formulation specifying the chemicals of active ingredients free from extraneous impurities to the extent of permissible international/ FAO standards, solvents, emulsifiers, stabilizers and other ingredients;

(dd) Registration means the process whereby the Federal Government approves the registration for the purposes specified following the evaluation of comprehensive scientific data demonstrating that a pesticide is effective for the intended purposes and does not pose an unacceptable risk to human or animal health or the environment;

(ee) Registered means registered by the Department under this Act.

(ff) Registration number means the specific number assigned by the Federal Government to each registered pesticide.

(gg) Reference pesticide laboratory" means a pesticide laboratory, national or international, accredited and notified duly by the Federal Government as a reference laboratory;

(hh) Repackaging means the authorized transfer of a pesticide form any commercial package into any other, usually smaller container for subsequent sale;

(ii) Residue means any substances in or on food, agricultural commodities or animal feed resulting from the use of a pesticide. It includes any derivatives of a pesticide, such as conversion products, metabolites, reaction products and impurities considered to be of toxicological significance. The term "pesticide residue" includes residues from unknown or unavoidable sources (e.g. environmental) as well as known uses of the chemical.

(jj) Substandard means, any pesticide which deviates from its registered specification and which falls below standards as prescribed;

(kk) Standard means a pesticide, that conforms to the registered specification of the product registered with the Department and falls within the permissible tolerance limits, laid down under FAO guidelines;

(ll) Trade Mark means a trade name or mark which is duly registered under the Trade Marks Ordinance, 2001 (Ordinance XIX of 2001) includes any assignee there of;

(mm) Use pattern means the combination of all factors involved in the use of a pesticide, including the concentration of the active ingredient in the preparation of the pesticide being applied, the rate of application, time of treatment, number of treatments, use of adjuvant and the methods and sites of application which determine the quantity applied, timing of treatment and interval before harvest;

Pesticide's Import, Export, Manufacture, Formulation, Sale, Distribution and Use according to Agriculture Pesticides Act, 2005 is as follow:

1. **Restriction:** No person shall import, manufacture, formulate, repackage, sell, offer or holds in stock for sale or in any manner advertise any pesticide which has not been registered in the prescribed manner;

Provided that the Federal Government may, by notification in the official Gazette, the allow import and marketing of pesticides under generic scheme (where a pesticide has already been tested, trailed and used in Pakistan) as prescribed from time to time subject to conditions for registration under brand name as may be prescribed including rules for determining equivalence of the import pesticides with the already registered standard for such pesticide and where necessary may conduct laboratory test of any sample taken at random.

2. **Registration of Pesticides:** (1) Any person intending to import, manufacture, formulate, repackage, sell offer or hold in stock for sale or advertise any pesticide, may apply to the Department for registration of the pesticide under such specific and identified trade mark or trade name along with the common name, as he may indicate in the application, as prescribed.

   (2) Any application under sub-section (1) shall be in such form, be accompanied by such fee and contain statements and information as may be prescribed.

   (3) Where the person making an application under sub-section (1) is not domiciled in Pakistan, the application shall besides such person, be signed by his agent or representative in Pakistan.

   (4) Upon the receipt of an application duly completed under sub-section (1) the Federal Government may register a pesticide by the name indicated in the application duly completed, if it is satisfied that:

      (a) the name of the pesticide is not such as would tend to deceive or mislead a purchaser with respect to the guarantee relating to the pesticide or its ingredients or the method of its preparation; and

      (b) the person seeking registration of the pesticide has submitted any necessary guarantee as may be required relating to particular a pesticide or its ingredient; and

      (c) the guarantee relating to the pesticide or its ingredient(s) are not the same as that of another registered pesticide or is not so similar as is likely to deceive or mislead a purchaser; and

      (d) the pesticide is effective for the purpose for which it is claimed to be effective or sold; and

      (e) the pesticide is not generally detrimental or injurious to vegetation, except weeds, or to human or animal health, or that it does not adversely affects the environment, when applied according to directions; and

      (f) the pesticide by the name indicated in the application does not fall under category of banned pesticides; and

      (g) fulfils any other conditions as may be prescribed.

   (5) When it registers a pesticide upon the application of any person under section 5 (1) above, the Federal Government shall grant him a certificate of registration in such form as may be prescribed.

3. **New discovered molecule:** Any pesticide registered under a trade mark as a new discovered molecule will be imported from the manufacturer based on the registration and use in any OECD country or the Peoples Republic of China subject to test and trial under the rules as may be prescribed.

4. **Distribution:** The importer or formulator as the case may be, shall undertake to repackage, label and deliver to the relevant distributor in retail packaging, a pesticide imported or formulated by them either at their own registered plant or at a repackaging or formulation of the Department as may prescribed.

5. **Export:** (1) A pesticide registered and used in Pakistan, whether in the formulated form or as a technical material, can be exported subject to intimation to the Department in the prescribed form and in conformity with any other law and any relevant international convention or protocol for the time being in force.

(2) where export, of any pesticide registered in an OECD country or China – which is not a banned pesticide and is registered in Pakistan as prescribed, is contemplated, the person intending to make such an export will provide necessary data with regard to the obtaining of such technical material, facility for formulating such pesticide and necessary evidence to the effect that the pesticide to be exported does not violate the standard established by FAO and any other international convention or protocol for the time being in force, and is intended to be used as a pesticide in the importing country and not in Pakistan. The Director General, after being satisfied that the product could be exported as a pesticide shall be used as a pesticide in the importing country, may declare it a pesticide for export purposes. Such declaration however will not be a binding for acceptance by any authority controlling export of chemicals.

6. **Registration period:** The registration of a pesticide shall be valid for a period of three years from the date of its registration of the pesticide.

7. **Cancellation of registration:** If, at any time after the registration of a pesticide, the Federal Government is of the opinion that the registration has been secured by consoling leading to violation of the provision of this Act in violation n of the provisions of this Act or the rules hereunder that the pesticide is in effective against pests or is hazards to vegetation, other than weeds, or non-target organisms, or to human or animal health or to the environment under the direction of use by the manufacturer, the Director General may, after giving to the person on whose application the pesticide had been registered, an opportunity of being heard, cancel the registration, with intimation to the Federal Government.

8. **Renewal of registration of a pesticide:** (1) The Federal Government may, upon application by a person who holds a previous registration certificate and desires that the registration of a pesticide be renewed and provided that the Director General is satisfied that no change has taken place in the guarantee or ingredients of such pesticides since the last date of registration and that no disqualification has been earned under this Act or any rules hereunder, renew the registration for a further period of three years.

   (2) An application under sub-section (1) shall be in such form and be accompanied by such fee as may be prescribed and be made at least six weeks before the expiration of the period for which the registration of the pesticide is effective and in any case must be made within thirty day of expiry of any previous registrations.

   (3) A notification of renewal not finalized by the Federal Government with one month of receipt shall be deemed to have been renewed.

9. **Testing at port of entry and exit:** (1) Every consignment of any pesticide imported into or exported from Pakistan shall be invariably tested consignment wise within seven days of date of application made after the arrival of the consignment, by the Government Analyst and if found to be adulterated or sub-standard, incorrectly or misleadingly tagged, labeled or named, or if its sale or import in any way contravenes the provisions of this Act, the Federal Government may disallow the import or export of such pesticide or any ingredients consignment and may also cancel the registration of such pesticide. This provision is without prejudice to any other obligation under any other provisions of this Act or any law for the time being in force.

   (2) In the case of testing of a consignment intended for export under sub-section (1), the consignment shall be deemed to be fit for export if it conforms to the requirement of the importer.

   (3) If the sample collected under sub-section (1) is found according to the registration specification, the Department shall issue a certificate to this effect within 72 hours of the result to the Customs authorities with a copy to the importer for release of the pesticides from the relevant port of en try or exit.

   (4) The importer or exporter, as the case may be, of such pesticide, the import or export of which has been disallowed under sub-section (2) above or their agent shall be responsible

for re-export or disposal, as the case may be, of such pesticide in an environmentally safe manner at their own risk and cost.

(5) No person shall propose, promote, recommend or use a pesticide in any manner other than permitted by the Federal Government under the approved and registered uses on crops, pests and it does not exceed the prescribed dose rates.

(6) The Federal Government may monitor the stock position of pesticide in order to determine the reason for shortage, if any, of pesticides at import, export, manufacture, formulation and repackaging stages of the finished product as well as technical and other materials. In case any check on quality is required in this regard, samples may be collected by the Director General or an agency so authorized by him for such collection, for the purpose of analyses.

10. **Labeling:** (1) No person shall import, sell, or offer or expose for sale, or advertise or hold in stock for sale any pesticide unless package containing the pesticide, and every tag or label durably attached thereto, is marked in printed characters in such form and in such manner as may be prescribed.

(2) Any dealer, whole seller, retailer, distributor or any other agent who has been convicted of not less than two offences under this Act, not being offences as contained in sections 36, 37, or 38, shall be black listed by the importer, manufacturer, distributor or formulator of the pesticide in question and by the relevant provincial government to ensure business ethics.

(3) Certification of distributor or dealer or retailer who fails to maintain prescribed requirements shall be cancelled by the provincial government and such intimation will be forwarded to the Department.

11. **Regulation of use:** No person shall store or use, any pesticide in violation of the rules made under this Act.

12. **Regulation of manufacture, formulation and repackaging:** No person shall engage in the manufacture, formulation, repackaging of a pesticide, including that of intermediates, without obtaining prior certification o n prescribed performa from the Department.

(1) Any person, who has established a manufacturing, formulation, repackaging plant for any pesticide, shall apply to the Department for Certification of the plant under such name as he may indicate in the application.

(2) An application under sub-section (1) shall be in such form and be accompanied by such fee and contain such information as may be prescribed.

(3) Upon receipt of an application under sub-section (2) the Department may certify a pesticide plant indicated in the application for a period of five years if it is satisfied that the plant;

(a) Fulfils all requisite and prescribed conditions,

(b) Is equipped with the necessary laboratory facilities as prescribed.

(4) Where the Department is satisfied that the application fulfils the criteria in sub-section (3), the Department shall make the certification within 60 days of the application.

(5) The Department may carry out periodical inspections and recommend improvement in any area relating to the manufacture, formulation and repackaging based on the application filed for certification requirements.

13. **Renewal of certification of manufacturing, formulation or repacking plant**

**(**1) The Federal Government may, upon application of the expiry of the certification of a plant, renew the certification for a further period of five years.

(2) The renewal of certification will be subject to the filing of a declaration or an application confirming that the improvements, if any, suggested by the Department under Section 15 (5) above, have been carried out in addition to the requirement under Section 15 (3) above.

**Annexure-II : Say! No to Pesticides: Dr. Zafar Altaf *(During No Pesticides Day 2009)***

# PARC
## Pakistan Agricultural Research Council

**National IPM Programme** of Pakistan Agricultural Research Council (PARC) observed "No Pesticides Day" on 3rd December 2009 at National Agricultural Research Centre (NARC) Islamabad by organizing thought provoking awareness seminar to highlight Pakistan Agricultural Research Council (PARC)'s initiatives like rationalizing pesticide use by IPM-FFS education process, promotion of organic agriculture, bioremediation of waste water and gender mainstreaming at policy and farmer level to minimize health and environment related hazards due to pesticide use.

The day was basically observed to:

i. join hands with Global Pesticides Action Network (PAN);
ii. commemorate the hundreds and thousands of innocent people who were the victims of Bhopal disaster;
iii. call attention of the community towards hazardous effects of pesticides; and
iv. plan activities through coordinated efforts at policy and farmer level at NARC/PARC forum to minimize health and environment related hazards due to pesticides.

More than two hundred scientists of NARC/PARC and general public along with Dr. Iftikhar Ahmad, Director General, NARC participated in the seminar. Dr. Zafar Altaf, Chairman PARC graced the occasion as chief guest.



At unfortunate midnight of 2nd and 3rd December 1984, Union Carbide pesticide plant (now Dow Chemical) in the Indian city of Bhopal, Madhya Pradesh accidentally exploded and released methyl isocyanate gas, exposing more than 500,000 people to methyl isocyanate and other chemicals. The first official immediate death toll was 2,259. The government of Madhya Pradesh has confirmed a total of 3,787 deaths related to the gas release. According to others estimates, 8,000-10,000 innocent people died within 72 hours and 25,000 have since died from gas-related diseases in the region.

Every year since 1995, Pesticide Action Network (PAN) activists around the world have marked the December 3rd as global "No Pesticides Day", the anniversary of the tragic December 3rd, 1984 pesticide plant explosion in Bhopal with marches, speeches, report releases, policy demands and personal actions: all focused on creating a world where disasters like Bhopal will never happen again.

The programme was started with a documentary film prepared by National IPM Programme "Hands Picking Poison". Dr. Muhammad Azeem Khan, Chief Scientific Officer (PARC) highlighted the Pesticides Externalities and Impacts on the masses and environment. Dr. Sher Muhammad, Chief Scientific Officer (NARC) emphasized the need of promotion of organic farming. He delivered a detailed presentation about the activities undertaken at NARC and importance of Organic Farming. Mr.Yousaf Riaz advocated for the bioremediation as an alternative to get rid of pesticides. He expressed that used water can be recycled with new technologies and re-used for irrigation and other purposes. Mr. Azhar Qureshi expressed his views on Gender Mainstreaming in relevance to pesticides. The participants were made familiarized with IPM Farmer Field School educational concept through screening another documentary film "FFS: A Ray of Hope". The chief guest Dr. Zafar Altaf, Chairman (PARC) in his address, stressed the scientists of the council and other scientific community to face the challenges pragmatically and evolved environment friendly and cost effective technologies as alternatives to pesticides. The seminar concluded with a vote of thanks by Dr. Iftikhar Ahmad, DG (NARC) who also narrated two poems in order to draw the attention of the spectators towards toxic effects of pesticides.

## 15.2 Key persons engaged/involved in pesticide related activities

| Islamabad | | | |
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| 1 | Dr. Iftikhar Ahmad<br>Director General<br>National Agriculture Research Center,<br>Islamabad. Ph: # 051-9255028<br>Fax : 051-9255034,<br>iftahmad@gmail.com | 2 | Dr. Muhammad Azeem khan<br>Chief Scientific Officer/Senior Director,<br>Social Sciences Division<br>Pakistan Agricultural Research Council,<br>G-5/1, Islamabad,<br>Cell # 0300-9716115<br>e-mail: azparc@yahoo.com azparc@gmail.com |
| 3 | Dr. M. Ashraf Poswal<br>Centre Director,<br>CABI Bio sciences Regional centre,<br>Pakistan, Opposite 1-A satellite Town<br>Data Gang Bakhsh Road Rawalpindi<br>Ph: 051 9290132, FaX:051-9290131 | 4 | Mr. Muhammad Irshad,<br>Entomologist/Consultant<br>National Insect Museum, IPEP, NARC,<br>Islamabad-45500,<br>Ph (Office) :051-9255406, Fax: 051-9255036,<br>e-mail: mirshad51@hotmail.com |
| 5 | Dr. Ghulam Jilani,<br>Chief Scientific Officer (Retd.),<br>NARC/PARC, Islamabad.<br>Cell # 0345-5150780<br>drjilani@gmail.com | 6 | Mr. Saifullah Talpur<br>Programme Leader/ Project Director,<br>National IPM Programme,<br>IPEP, NARC, Islamabad-45500,<br>Ph. (Office) 051-9255063,<br>Fax : 051-9255036<br>email : saiftalpur@hotmail.com |
| 7 | Dr. Muhammad Ather Rafi,<br>Principal Scientific Officer,/<br>Programme Leader,<br>National Insect Museum,<br>National Agricultural Research Centre,<br>Islamabad-45500<br>Ph: 051-9255406, 8443325,<br>Cell: 0334-5229669<br>e-mail: rafima@yahoo.com | 8 | Mr. Falak Naz,<br>Senior Scientific Officer,<br>National Insect Museum,<br>National Agricultural Research Centre,<br>Islamabad-45500<br>Ph: 051-8443329<br>Cell: 0333-5348218<br>e-mail: falak05@yahoo.com |

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| 11 | Dr. Masood Amjad Rana,<br>Cotton Commissioner,<br>Ministry of Food,Agriculture & Livestock<br>Government of Pakistan<br>B-Block, Pak-Secretariat, Islamabad<br>Ph: 051-9207695 | 12 | Mr. Roshan Zada,<br>Senior Scientific Officer<br>National IPM Programme, IPEP,NARC,<br>Islamabad-45500,<br>Ph (Office) :051-9255063, Fax: 051-9255036<br>roshanzada@yahoo.com |
| 13 | Dr. Mubarik Ahmad<br>Director GSRI, SARC, Karachi<br>Ph: 021-9261555, Fax: 021-9261561<br>e-mail: gqtl_parc@hotmail.com | 14 | Abdul Ghafar Arain ,Project Director<br>Monitoring & Evaluation, Room # 430,<br>4th Floor, B-Block, Ministry of Food,<br>Agriculture & Livestock, B-Block ; Pak<br>Secretariat, Islamabad.<br>Ph: # 051-9203476, Cell 0334-5260741 |
| 15 | Dr. Anjum Munir,<br>Principal Scientific Officer,<br>Crop Diseases Research Programme,<br>IPEP, NARC,Islamabad-45500,<br>Ph. (Office) : 051-9255170<br>Fax : 051-9255036<br>email : anjums41@yahoo.com | 16 | Dr. Manzoor Hussain Soomro,<br>Director, PASTIC,<br>Pakistan Science Foundation, Islamabad<br>Cell # 0300-9805611<br>E-mail: soomro_ipmpak@hotmail.com<br>mhsoomro@isb.pknet.com.pk |
| 17 | Mr. Jam Muhammad Khalid,<br>Training Coordinator,<br>FAO, Multan<br>Cell # 0344-9550955, 0346-8544146<br>e.mail:jamkhalid@hotmail.com | 18 | Dr. Muhammad A. Matin<br>Chief Scientific Officer (Retd.)<br>PARC, G-5/1, Islamabad<br>Ph : 051- 9206364, 844-3325 |
| 19 | Dr. Tahira Yasmin, Scientific Officer,<br>National IPM Programme, IPEP,<br>National Agricultural Research Centre,<br>Islamabad-45500<br>Ph. (Office): 051-9255170<br>Fax: 051- 9255036<br>tahirayasmin@hotmail.com | 20 | Mr. Muhammad Tariq Khan,<br>Scientific Officer,<br>Entomologist/ IPM-FFS Specialist,<br>National IPM Programme, IPEP,<br>National Agricultural Research Centre,<br>Islamabad-45500<br>Ph: 051-9255063, Fax: 051-9255036<br>Cell: 0300-5795650<br>e-mail: tariqpak007@yahoo.com |
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| 31 | Dr. Farkhanda Manzoor,<br>Assistant Professor,<br>Department of Zoology,<br>Lahore College for Women University,<br>Lahore, Pakistan<br>Phone # 042-9203091, Cell # 0333-4583936<br>e-mail: doc_farkhanda@yahoo.com | 32 | Mr. Muhammad Naeem Aslam,<br>Research Officer,<br>Cabi-Biosciences, Mulatan.<br>Cell # 0300-6787805 |
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| 35 | Mr. Muhammad Nasir Sarwar,<br>President, Kissan Welfare Association<br>Punjab<br>Regional Agricultural Research Institute<br>Complex, Gulberg Road, Model Town-A,<br>Bahawalpur.<br>Ph: # 062-2889830, Cell 0300-6823178<br>kwapunjab@yahoo.com | 36 | MS. Humaira Hashmi , Regional General<br>Manager, Punjab Rural Support<br>Programme, 1-Sher Shah Road, Opposite<br>Services Club Multan,<br>Ph: # 061-512717-549357<br>Fax: 061-4512717 |

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| 39 | Central Cotton Research Institute, Multan Old Shujabad Road, Multan. Ph: 061-9201128- 9200340-41 Fax: 061-9200342, & Central Cotton Research Institute, Sakrand | 40 | Ms. Nasira Habib, Founder Director, KHOJ-Society for People Education, W-53, (Upper Portion) Doctor's Society, Thokar Niaz Beg, Lahore. Ph # 042-7498281, Fax # 042-7498269 Cell # 0302-4344591, e-mail: nasira@khoj.edu.pk www.khoj.edu.pk |
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| 45 | Mr. Dost Ali Talpur, Agriculture Officer Agriculture Extension Department Tando Allah Yar, Sindh. Cell: 03013158065 E-mail: dostalitalpur@hotmail.com | 46 | Mr. Shamsuddin Memon Director Agriculture Information Shahbaz Building Block-F Hyderabad. Ph: 0221-9200751, Fax:0221-9200053 Email: Shams_dmemon@hotmail.com |
| 47 | Chetan Mal, Agriculture Officer Agriculture Extension, C/O District Officer, Agri. Extension, Shahbaz Building, Hyderabad. Ph: 0221-9200193 Res:0221-766154 | 48 | Dr. Shahina Fayyaz, National Nematological Research Center, University of Karachi, Karachi. Ph: # 021-9243202 Fax: # 021-9243190, 021-9243191 |
| 49 | Dr. Bina S. Siddiqui, Distinguished National Professor, International Centre for Chemical Sciences, H.E.J. Research Institute of Chemistry University of Karachi. Ph: 021-4824935, Fax: 021-4819018-4819019 | 50 | Satram Das Deputy District Officer Agriculture Extension C/O Nat IPM Sub Office Adjucent E.D.O. Office Fruit Farm Road, Mirpurkhas. Ph: 0231-61715 satram7@FanBox.com |

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| 53 | Mr. Allah Dad Khan,<br>Director, Crop Maximization Programme,<br>Department of Agricultural Extension,<br>Government of NWFP,<br>Jumrud Road Peshawar.<br>Ph: # 091-9216374, Cell # 0333-9151958<br>Fax: # 091-9216372 | 54 | Mr. Khurram Nawaz Saddozai,<br>Lecturer, Agriculture Economics,<br>NWFP Agricultural University, Peshawar.<br>Cell: 0300-5926494,<br>email : ksaddozai@hotmail.com |
| 55 | Dr. Farman Ullah,<br>Professor & Director Advance Studies,<br>Department of Plant Protection,<br>NWFP Agriculture University Peshawar.<br>Ph: # 091-9216554, Fax: # 091-9216520<br>Cell # 0333-9131722<br>Email: drfarman@yahoo.com | 56 | Dr. Muhammad Naeem,<br>Professor (Entomology)/<br>Dean, Faculty of Crop Protection,<br>NWFP Agriculture University Peshawar.<br>Ph: 091-9216551,<br>Cell: 03339136097,<br>e-mail: earworm2001@yahoo.com |
| 57 | Dr. Sajjad Ahmed,<br>Department of Entomology,<br>NWFP Agriculture University Peshawar.<br>Ph: 091-9216551 | 58 | Mr. Manzoor Ahmed,<br>Deputy Director,<br>Department of Plant Protection,<br>Board, Jamrud Road, Peshawar |
| 59 | Dr. Khalid Abdullah,<br>Entomologist,<br>Agriculture Research Institute,<br>Ratta Kulachi, Dera Ismail Khan<br>Ph # 0966-740549, 740046<br>Cell # 0333-5369162 | 60 | Mr. Muhammad Akram,<br>Entomologist/ Farm Manager,<br>Agriculture Research Institute,<br>Ratta Kulachi, Dera Ismail Khan<br>Ph # 0966-740184, 740046<br>Cell # 0344-9300144 |
| 61 | Mr. Obaid Ullah,<br>Master Trainer/APPO,<br>Batkhela, Malakand, Agency.<br>Cell# 0302-8060644,<br>Phone#(H) 0946-752392,(O) 0932- 411720)<br>obaid_ullah58@yahoo.com | 62 | Mr. Imran Afridi, IPM Site Coordinator<br>Department of Agricultural Extension<br>Government of NWFP, Jumrud Road<br>Peshawar. Ph: # 091-9216374,<br>Cell # 0333-9151958, Fax: # 091-9216372<br>afridi_i@hotmail.com |
| **Balochistan Province** | | | |
| 63 | Secretary,<br>Government of Balochistan,<br>Agriculture & Cooperatives Department,<br>Civil Secretariat, Quetta.<br>Phone # 081-9201261 | 64 | Director General,<br>Department of Agriculture Extension,<br>Government of Balochistan,<br>Sariab Road, Rani Bagh, Quetta.<br>Phone # 081-9211500, Fax # 081-9211506 |
| 65 | Dr. Khair Muhammad Kakar,<br>Provincial Coordinator, Agribusiness<br>Development and Diversification Project<br>(MINFAL), Quetta.<br>Ph # 081-2471641, 2446754<br>Cell # 0333-7809780<br>e-mail: kmk692001@yahoo.com | 66 | Mr. Arif Shah Kakar,<br>Deputy Director/ IPM Facilitator,<br>Directorate of Agriculture Extension<br>Balochistan,<br>Sariab Road, Rani Bagh, Quetta.<br>Phone # 081-9211500, Cell # 0333-7922991<br>e-mail: sunzar2006@yahoo.com |

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| 67 | Mr. Abdul Quddus Baloch,<br>Project Director,<br>Promotion of Cotton in Balochistan,<br>Directorate of Agriculture Extension<br>Balochistan, Sariab Road, Rani Bagh,<br>Quetta. Phone # 081-9211500,<br>Cell # 0345-8912232, 0331-8911781 | 68 | Inam-ul-Haq Shinwari,<br>Director,<br>Directorate of Agriculture Extension<br>Balochistan,<br>Sariab Road, Rani Bagh, Quetta.<br>Phone # 081-9211500,<br>Cell # 0321-8131019 |
| 69 | Mr. Mir Hassan Dahar<br>Dy. Provincial IPM Coordinator<br>(Balochistan) National IPM Programme,<br>Directorate of Agriculture Extension,<br>Balochistan, Rani Bagh Sariab Road<br>Quetta. Ph: 081-2446289,<br>Fax:, 081-9211506, Cell: 0300-3703147 | 70 | Dhani Bakhsh Bugti, Deputy District Officer<br>Patfeeder Command Area<br>Dev. Project Agriculture Colony, Hostpital<br>road, Dera Murad Jamali,<br>Ph: 0740-710284,<br>Res: 0740-710432<br>Cell # 0300-3708117 |
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| 73 | Dr. Muhammad Anwar,<br>Professor, Department of Chemistry,<br>University of Balochistan, Quetta.<br>Cell # 0333-7816645 | 74 | Dr. Zahid Hafeez,<br>Entomologist/ Director,<br>Agriculture Research Institute,<br>Sariab Road, Quetta.<br>Phone # 081-9211201, Cell # 0302-3807393 |

## 15.3 Photographs of acute health hazard, environmental effects, pest outbreak etc. Due to indiscriminate use of chemical pesticides









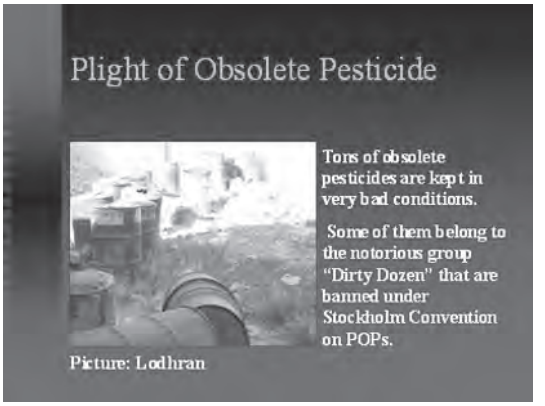


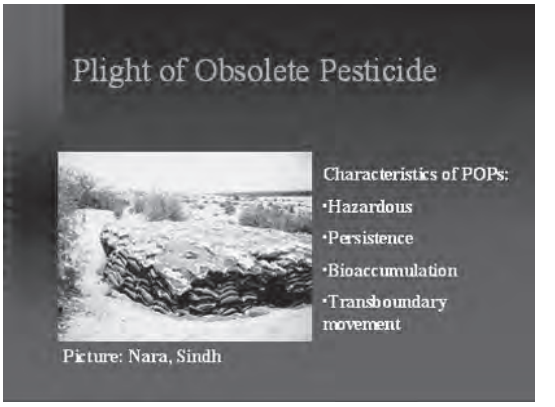


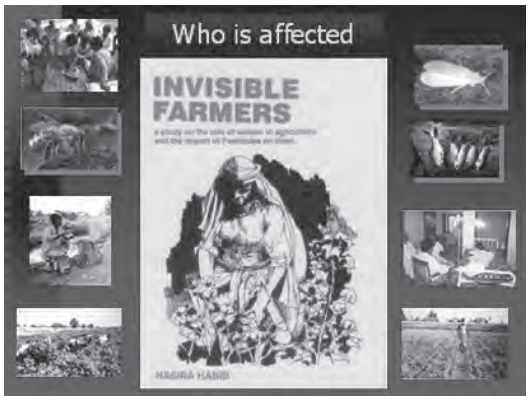


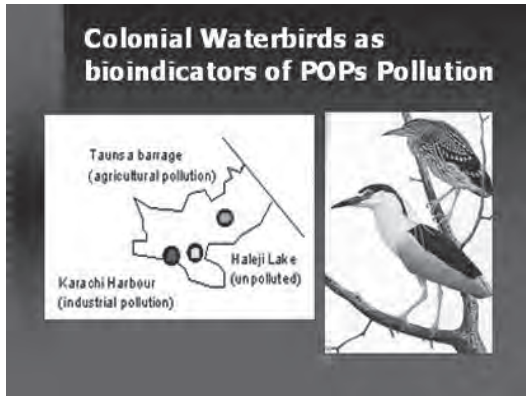




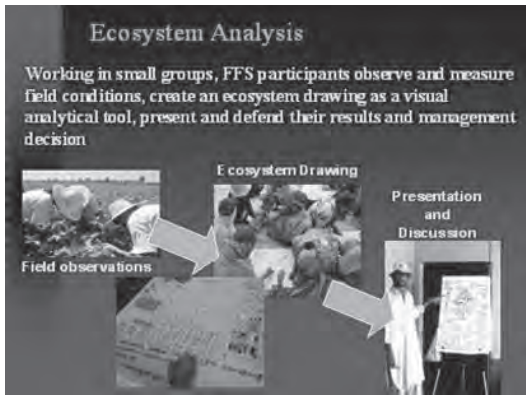


Plight of Obsolete Pesticide
Tons of obsolete pesticides are kept in very bad conditions.
Some of them belong to the notorious group "Dirty Dozen" that are banned under Stockholm Convention on POPs.
Picture: Lodhran


Plight of Obsolete Pesticide
Characteristics of POPs:
•Hazardous
•Persistence
•Bioaccumulation
•Transboundary movement
Picture: Nara, Sindh

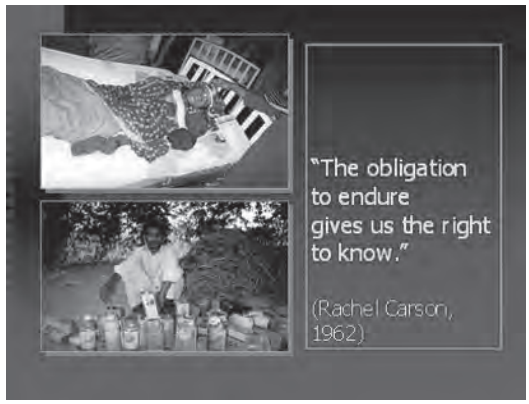

Who is affected
INVISIBLE FARMERS


Colonial Waterbirds as bioindicators of POPs Pollution
Taunsa barrage (agricultural pollution)
Haleji Lake (unpolluted)
Karachi Harbour (industrial pollution)


Towards Sustainability
• Farmer to Farmer Education
• Women Open Schools
• Children Ecology Clubs
• Family IPM
• Group FFS
• Village IPM
• Public Private Partnership
• Enterprise Development


Ecosystem Analysis
Working in small groups, FFS participants observe and measure field conditions, create an ecosystem drawing as a visual analytical tool, present and defend their results and management decision
Ecosystem Drawing
Presentation and Discussion
Field observations


Towards Sustainability
• Farmer to Farmer Education
• Women Open Schools
• Children Ecology Clubs
• Family IPM
• Group FFS
• Village IPM
• Public Private Partnership
• Enterprise Development


"The obligation to endure gives us the right to know."
(Rachel Carson, 1962)

## 15.4 Gazettes

### THE GAZETTE OF PAKISTAN, EXTRA, JAN. 25, 1971. MINISTRY OF LAW & PARLIAMENTARY AFFAIRS (LAW DIVISION)

**Islamabad, the 25th January, 1971**

No. F. 24(I)71-Pub.-The following ordinance Made by the President on the 22nd January, 1971, is hereby published for general information:

**ORDINANCE NO : II OF 1971**

AN

ORDINANCE

To regulate the import, manufacture, formulation, sale, distribution and use of Pesticides.

WHEREAS it is expedient to regulate the import, manufacture, formulation, sale, distribution and use of pesticides and for matters ancillary there to:

AND WHEREAS the national interest of Pakistan in relation to the achievement of uniformity requires Central Legislation in the matter.

NOW, THEREFORE, in Pursuance of the proclamation of the 25th day of March, 1969, reed with the Provincial Consultation Order and in exercise of all powers enabling him in that behalf, the President is pleased to make and promulgate the following Ordinance:-

## CHAPTER – I
## INTRODUCTORY

Short title, extent and Commencement. 1. (1) The Ordinance may be called the Agricultural Pesticides Ordinance, 1971.
(2) It extends to the whole of Pakistan.
(3) It shall come into force at once.

Application of other laws not barred. 2. The provisions of this Ordinance shall be (XII of in addition to, and not in derogation of, the 1919). Provisions of the Poisons Act, 1919 and any other law for the time being in force.

Definitions: 3. In this Ordinance, unless there is anything repugnant in the subject or context, the expression.

(a) "adulterated" when used with reference to a pesticide, means any pesticides the strength or purity of which falls bellow the professed standard or quality which is expressed on its label or under which it is sold or a pesticide any valuable ingredient of which has been wholly or partially extracted.

## THE GAZETTE OF PAKISTAN, EXTRA, JAN. 25, 1971.

(b) "advertise" means to make known by publication or distribution of any advertisement, circular of other notice.

(c) "brand" means the trade name applied by an importer, manufacturer, formulator or vendor to the foods imported, manufactured or sold by him.

(d) "committee" means the Agriculture Pesticide Technical Advisory Committee constituted under this Ordinance.

(e) "formulation" means the process by which a pesticide is converted, by mixing with other substance, into a form in which it is ready to be used.

(f) "fungi" means all rusts, smuts, mildews, moulds, yeasts, and similar forms of plant life prescribed in this behalf and includes bacteria affecting plant life.

(g) "Government analyst" means a Government Analyst appointed under this Ordinance.

(h) "Guarantee" means the statement indicating the strength, effectiveness and other qualities of brand of a pesticide which an importer, manufacturer, formulator, vendor of person holding stock for sale of a brand of a pesticide is required to submit under the rules a t the time of applying for the registration of the brand.

(i) "inspector" means an Inspector appointed under this Ordinance.

(j) "ingredient" means any material used in making a pesticide.

(k) "insect" means any of the small invertebrate animals commonly known as insects and includes such forms of animal life as may be presvrived.

(l) "label" means the written, printed or graphic matter on or attached to, a pesticide or the immediate container thereof, and the outside container or wrapper of the retail package, if any, or the pesticide.

(m) "package" includes every container.

(n) "pesticide" means any substance or mixture of substances used or represented as means for preventing, destroying, repelling, mitigating or controlling, directly or indirectly, any insect, fungus, bacterial organisms, nematodes, virus, weed, rodent or other plant or animal pests, and but does not include a substance which is a drug within the meaning or the Drugs Act, 1940.

(XXIII of 1940)

(o) "prescribed" means prescribed by rules made under this Ordinance.

(p) "registered" means registered under this Ordinance.

(q) "registration number" means a specific number assigned by the Central Government to each registered brand of pesticide.

(r) "rules" means rules made under this Ordinance.

(s) "weed" means any plant which grows where not wanted.

## CHAPTER – II
## IMPORT, MANUFACTURE, FORMULATION, SALE, DISTRIBUTION AND USE OF PESTICIDES.

Pesticides to be regi-tered.

4. No person shall import, manufacture, formulation sell, offer for sale, hold in stock for sale of in any manner advertise any brand of pesticide which has not been registered in the manner hereinafter provided.

Application for regist-ration of Pesticides.

5. (1) Any person intending to import, manufacture, formulate, sell, offer for sale, hold in stock for sale or advertise any brand of a pesticide may apply to the Central Government for the registration of the brand under such name as he may indicate in the application.

(2) An application under sub-section (I) shall be in such form, be accompanied by such fee and contain such statements and information as may be prescribed.

(3) Where the person making an application under sub-section (I) Is not domiciled in Pakistan, the application shall, besides such person, be signed by his agent or representative Pakistan.

(4) Upon the receipt of an application under sub-section the Central Government may register a brand of a pesticide by the name indicated in the application, if it is satisfied that.

(a) the brand is not such a would tend to deceive or mislead the purchaser with respect to the guarantee relating to the pesticide or its ingredients or the method of its preparation; or

(b) The guarantee relating to the pesticide or its ingredients is not the same as that of an other registered brand or is not so similar thereto as be likely to deceive; or.

(c) it is effective for the purpose for which it is sold or represented to be effective; or

(d) It is not generally detrimental or injurious to vegetation, except weeds, or to human or animal health even when applied according to directions.

(5) When it registers a brand of a pesticide on the application of any person, the Central Government shall grant to him a certificate or registration in such form as may be prescribed.

*(Period for which Registration shall be effective)*

(6) The registration of a brand of a pesticide shall be effective from the date of its registration until the thirtieth day of June of the third year following the year of registration.

*(Cancellation of Registration)*

(7) If, at any time after the registration of the brand of a pesticide, the Central Govt. is of opinion that the registration has been secured inviolation of any of the provision of this Ordinance or the rules or that the pesticide is ineffective against pests or hazardous to vegetation, other that weed, or to human or animal life, the Central Government may, after giving to the person on whose application it has been registered an opportunity of being heard, cancel the registration.

*(Renewal of Application)*

(8) 1. The Central Government may, on the application of the importer, manufacturer, formulator, vender or stock-holder of a registered brand of pesticide in the guarantee of ingredients of which no change has taken place since the date of it's registration, renew the registration of the brand for a further period of a three years.

2. An application under sub-section (I) shall be in such form and be accompanied by such fee as may be prescribed and shall be made before the expiration of the period for which the registration of the brand to which it relates is effective.

*(Importation may be prohibited)*

9. If any pesticide imported into Pakistan is found to be adulterated or incorrectly or misleadingly togged, labeled or named, or if its sale in any way contravenes any of the provisions of this Ordinance, the Central Govt. may, by notification in the official Gazzette, prohibit the further import of the pesticide into Pakistan.

10. No person shall sell or offer or expose for sale, labeling or advertise or hold in stock for sale any pesticide unless of packages each package containing the pesticide, any every tag or label durably attached thereto, is branded or marked in printed characters in such form and in such manner as may be prescribed.

*(Storage and use of Pesticides)*

11. No person shall store or use any pesticide save in accordance with rules made under this Ordinance.

## CHAPTER III
## THE AGRICULTURE PESTICIDE TECHNICAL ADVISORY COMMITTEE ETC.

*(The Agricultural Pesticide Technical Advisory Committee)*

12. (1) As soon as may be after the commencement of this Ordinance, the Central Government shall constitute a committee , to be called APTA Committee, to advise the Central Government on technical matters arising out of the administration of this Ordinance and to perform any other functions assigned to it by or under this Ordinance.

(2) The Committee shall consist of Chairman and such number of vice Chairman and other members, being officers of the Central Government or a Provincial Government or persons representing trade and industry engaged in pesticide business as the Central Government may appoint.

Provided that no officer of a Provincial Govt. and no person representing trade and industry so engaged in a province shall be appointed otherwise than on the recommendation of the Government of the Provincial concerned.

(3) The names of Chairman, the Vice-Chairman and the other members of the Committee shall be published in the official Gazette.

(4) The Central Government shall appoint one of the members of the Committee, being an officer of the Government, to be the secretary of the Committee for the period for which he is such a member.

(5) The non-official member of the Committee shall hold office for a term of the three years and shall be eligible for reappointment.

(6) A member of the Committee may, at any time resign his office by writing under his hand addressed to the Chairman, but the seal such member shall not be deemed to have fallen vacant unless the resignation has been accepted by the Chairman with previous approval of the Central Government.

(7) A person appointed to fill a vacancy created by the resignation or death of a member shall hold office for the residue to the term of his predecessor.

(8) The functions of the Committee may be exercised not with standing any vacancy in the membership thereof.

(9) The Committee shall have the power to regulate with prior approval of the Central Government the procedure for the conduct of its business.

(10) The Committee may appoint sub-Committee consisting of specialists for the consideration of particular matters for such periods, not exceeding three years, as it may consider necessary.

13. (1) As soon as may be after the commencement of this Ordinance, the Central Government shall set up a Pesticides Laboratory suitably equipped to carry out the functions entrusted to it by or under this ordinance.

(2) The functions of the Pesticides Laboratory and the mode of submission of samples for analysis or test to the Laboratory shall be such as may be prescribed.

(3) The secrecy of the formulae of brands of pesticides, samples of which are submitted to the pesticides Laboratory for analysis or test, shall be duly safeguard in the manner prescribed.

*(Govt. Analyst)*

14. The Central Government may, by notification in Govt. the official Gazette, appoint as many persons as it Analyst deems fit to be Government Analysts for pesticides and, where it appoints more than one person to be Govt. Analysts, shall specify in the notification the local limits with in which each one of them shall perform the functions of Government Analyst.

*(Inspectors)*

15. The Central Government may, by notification in the official Gazette, appoint from amongst the officers of the Central Government or a Provincial Government employed for work relating to Plant protection such number as it deems fit to be Inspectors with in such local limits as may be specified in the notifications.

*(Powers of Inspectors)*

16. An Inspector may, within the local limits for which he is appointed, enter upon any premises where pesticides are kept or stored, weather in containers or in bulk, by or on behalf of the owner, a railway, a shipping company or any other carrier, including premises belonging to a bailee, such as a railway, a shipping company or another carrier, and may take samples therefore examination no compensation shall be payable for a reasonable quantity taken as a sample.

*(Procedure of Inspectors)*

17. i.) Where an Inspector takes a sample of a pesticide for the purpose of test or analysis under section- 16 he shall intimate such purpose in writing in the prescribed form to the person from whose procedure possession he takes it and, in the presence of such of person (unless he willfully absents himself ), shall Inspectors, divide the sample into three portions and effectively marks the same and permit such person to add his own seal and mark to all or any of the portions so sealed and marked.

Provided that where the pesticide is made up in containers of small volume, instead of dividing a sample as aforesaid, the Inspector may, and if the pesticide be such that it is likely to deteriorate or be otherwise damaged by exposure shall, take three of the said containers after suitable marking the same and, where necessary, sealing them.

(2) The Inspector shall restore one portion of a sample so divide or one container, as the case may be, to the person from whom he takes it, and shall retain the reminder and dispose of the same as follows:

i) he shall forth with send one portion or container to the Government Analyst for test or analysis and
ii) he shall send the second portion or container to the Central Government.

*Report of Govt. Analyst:*

18. 1. The Government Analysts to whom a sample of Report any pesticides has been forwarded by an Inspector under of subsection (2) of section-17 shall deliver to the Govt. Inspector, in triplicate in the prescribed form, a signed Analysts report of the result of the test or analysis conducted Analysts by him.

2. The Inspector shall deliver one copy of the report received by him to the person from whose possession the sample was taken and shall send one copy to the Central Government.

3. Any document purporting to be report signed by the Government Analyst of an analysis conducted by him under this chapter shall be conclusive evidence of the report has been delivered under sub-section (2) disputes the correctness of the analysis conducted by the Govt. Analyst and , with in thirty days of the delivery of the report to him. Please before the Central Government evidence which in his opinion controverts the correctness of such analysis.

4. Where the evidence placed before the Central Government under sub-section (3) is such as would in its second part of the same sample to be analyzed at the pesticides Laboratory.

5. After the sample forwarded to it by the Central Government has been analyzed by the Pesticides analysis in a certificate of analysis and forward the certificate to the Central Government.

6. A certificate of analysis prepared by the pesticide Laboratory shall be conclusive evidence by the facts state therein.

19. The Central Government may publish in such manner as it may deem fit the result of the test and analysis of a pesticide made by a Government Analyst or the pesticide Laboratory under section 18 together with such other information relating thereto, if any, as it may consider necessary.

*Purchaser of Pesticide may have tested or analyzed*

20. (1) Any person who has purchased a pesticide may apply to a Government Analyst to conduct a test or Analysis of the pesticides.

(2) An application under sub-section (1) shall be made in such form and manner and be accompanied by such fee as may be prescribed.

(3) The Government Analyst to whom and application is made in accordance with sub-section (2) shall conduct the test or analysis and issue to the test or analysis.

## CHAPTER IV
## MISCELLANEOUS

21. Any person who:

*Offenses and penalties:*

(a) sells, offers or exposed for sale, holds in stock for sale or advertises a registered brand of a pesticide which is not of the nature, substance or quality, which it is represented to be by the brand or mark on the package containing it or, as the case may be, on the tag or label attached there to, or

(b) falsely represents a pesticide in an advertisement ; or

(c) contravenes any of the provisions of this ordinance or the rules for the contravention of which no other penalty is provided in this with fine which may extend to one thousand rupees or more than three thousand rupees and in default of payment of any such fine with imprisonment for a term which may extend to one year.

*Manufacturer's warranty to dealers:*

22. whoever gives false warranty to a dealer or purchaser in respect of a pesticide, that it complies in all respects with the provisions of this ordinance shall, unless he proves that when he gave the warranty he had good reason to believe the same to be true, be punishable with fine which may extend to one thousand rupees.

23. Any person who:-

*Unlawfully use of registration number lower in pesticide value or hinder in the inspector from perform his duty:*

(a) unlawfully uses any registration number assigned or as if it had been assigned under this ordinance, or

(b) willfully alters the composition of a pesticide by mixing any other substance therewith after the said pesticide has been placed on the market by the manufacturer, importer or vendor, or

(c) will fully obstructs, hinders, resists, or in any way opposes any Inspector in performing his duties under this ordinance.

Shall be punishable with fine which shall not be less than two thousand and five thousand rupees or with imprisonment for a term which shall not be less than one year or more than two years.

*Entry & Seizure:*

24 (1) if an Inspector has reason to believe that an offence punishable under this ordinance or the rules made there under has been is being or it being or is adour to be committed at any time or place, he may enter and search such place and seize any pesticide, article or thing to which the offence relates found there in.

(2) Any pesticide, article or thing seized under sub-section (1) shall be disposed of in accordance with the decision of the Court before which the offender is prosecuted for a contravention at any of the provisions of this ordinance or the rules.

*Power of Court to order for feiture.*

25. If any person is convicted of an offence punishable under this ordinance committed by him in respect of any pesticide, article or thing, the Court convicting him may further directs that the pesticides articles or things, that the pesticide, articles or thing shall be for fitted to the Central Government.

*Cognizance of offence etc. Act V of 1898.*

26. (1) No court inferior to that of a Magistrate of the first class shall try an offence punishable under this ordinance.

(2) Notwithstanding anything contained in section 32 of the code of criminal procedure, 1898, it shall be lawful for any Magistrate of the first class to pass any sentence authorized by this ordinance event if such sentence exceeds it is powers under the said section 32.

*Power to try offence summarily Act-V of 1898.*

27. Any Magistrate of the first class or any bench of Magistrates invested with the powers of a Magistrate of the first class empowered for the time being to try in summary war the offences specified in sub-section (1) of section 260 of the code of criminal procedure, 1898, may on application in this behalf being made by the prosecution, try in with the provisions contained in section 262 to 265 of that code, any offence punishable under section 21.

28. No suit, prosecution or other legal proceeding shall lie against any person for anything which is in good faith done or intended to be done under this ordinance or the rules.

*Power to make rules:*

29. (1) The Central Government may, in consultation with the Agriculture Pesticide Technical Advisory Committee and after previous publication in the official Gazette, make rules for carrying the processions of this ordinance into effect,

(2) In particular and without prejudice to the generality of the foregoing power, such rules may provide for all any of the following matters, namely:-

(a) the nomenclature of every form of plant and animal life that shall be deemed to be insects, fungi or other plant or animal pests:

(b) the form in which an application for the registration of a brand of a pesticide or for the renewal of registration shall be made, the information than shall be furnished therewith and the fee that shall be furnished therewith and the fee that shall accompany it:

(c) the procedure for the grant of certificate of registration of brands of pesticides and renewal of such registration and the form of such certificates.

(d) The language of the tags or label to be attached to the containers and packages containing pesticides and the character and location of the printing to be marked ion such tag, labels and containers;

(e) The functions of pesticide laboratory and the procedures to be followed by in the performance of such functions, including:-

i) Safeguarding of the secrecy of the formulae of any brands of pesticides disclosed to it.

ii) Collection of samples of pesticides for test or analysis, and

iii) The form in which its reports of test or analysis shall be written.

(f) the methods of analysis to be followed, and the limits of variability to be allowed, by the Government analyst as between the information marked on the container or on a label attached there to or supplied to the purchaser when sold in bulk, and results of the analysis.

(g) The qualifications and duties of the Government Analyst.

(h) The form in which an intimation of the purpose for which a sample is taken by an inspector shall be given by him to the person from whose possession the sample is taken, the instruments to be employed, and the quantities to be taken, by an Inspector while taking samples for test or analysis and the manner in which they should be preserved and sent on the Government Analyst and the Central Government;

(i) The form in which an application shall be made by the purchaser of a pesticide to a Government Analyst for test or analysis of the pesticides, the manner in which a purchaser may send a pesticide for test or analysis to the Government Analyst, the information that shall be furnished with such application and the fee that shall accompany it.

(j) The pesticides that are generally a detrimental or injurious to vegetation, domestic animals or public health even when used according to directions.

(k) The pesticides that are to be labeled poison and their antidotes.

(l) The requirement for the safe storage of pesticides.

(m) The quantities of different brands of pesticides which a person may hold in stock at any one time and the premises in which, and the conditions subject to which, he may hold them in stock.

(n) The precautions for the protection of workers against risk of poisoning by pesticides arising from their working:-

i) In connection with the use of such pesticides in agriculture; or

ii) On land on which such pesticides are being or have been used in agriculture.

(o) the restrictions or conditions as to the purposed for which, the circumstances in which, or the methods or means by which, a pesticide may be used.

(p) the restrictions or conditions as to the purposed for which, the circumstances in which, or the methods or means by which, a pesticide may be used.

(q) The provision, and keeping available and in good order, of facilities for washing and cleaning and of other things needed for protecting persons, clothing equipment and appliances from contamination with pesticides or for removing sources of contamination therefrom.

(r) The observance of precautions against poisoning by pesticides including the use of things provided in pursuance of the rules, and abstentions from eating, drinking and smoking in circumstances involving risk or poisoning by pesticides.

(s) Intervals between, or limitations of periods of exposure to risk of poisoning by pesticides.

(t) The observance of special precautions in the case of persons who, by reason of their state of health, age, or other circumstances, are subject to particular risk of poisoning by pesticides or of injury thereform, or imposing, in case of persons so subject, prohibitions or restrictions on employment of workers.

(u) The measures for detecting and investigating case in which poisoning by pesticides has occurred.

(v) The provisions of effective facilities for prevention of poisoning by pesticides and first aid treatment; and

(w) The provision of instruction and training in the use of things provided in pursuance of the rules and in the observance of precautions against poisoning by pesticide.

30. The Central Government may, by notification in the Ordinance or the rules shall in such circumstances, and under official Gazette, direct that all or any of its powers under this such conditions, it any, as may be specified in the direction, be exercised also:-

(a) by any officer or authority subordinate to the Central Government, or

(b) by any Provincial Government or by any officer or authority subordinate to such government.

**A. M. YAHYA KHAN, H.PK., H.J.**
**GENERAL**
*President and Chief Martial Law Administrator.*

SHAFIQ.

**GOVERNMENT OF PAKISTAN**
**MINISTRY OF LAW & PARLIAMENTARY AFFAIRS**
**(LAW DIVISION)**

.....

ISLAMABAD, THE 24th FEB., 1979

NO. F. 17(1) / 79-PUB.- The following Ordinance made by the President are hereby published for general information.

.....

## ORDINANCE NO. XII OF 1979
## AN
## ORDINANCE

To amend the Agricultural Pesticides Ordinance,1971

WHEREAS it is expedient to amend the Agriculture Pesticides Ordinance, 1971 (II of 1971), for the purpose hereinafter appearing;

AND WHEREAS the president is satisfied that circumstances exist whichrender it necessary to take immediate action;

NOW, therefore, in pursuance of the proclamation of the fifth day of July, 1977, read with the Laws (Continuance in Force) order, 1977, (C.M.I.A Order No. 1 of 1977), and in exercise of all powers enabling him in that behalf, the president is pleased to make and promulgate the following Ordinance.

1. Short title and commencement:- (1) This Ordinance may be called the Agricultural Pesticides (Amendment) Ordinance, 1979.

2. It shall come into force at once.

3. Amendment of section 5, Ordinance II of 1971, in the Agricultural pesticides Ordinance, 1971 (II of 1971) in section 5, in sub-section (4). In clause (b), after the word brand, the words by the same manufacturer shall be inserted.

Sd/=

GENERAL

M. ZIA-UL-HUQ,

President.

# GOVERNMENT OF PAKISTAN
# MINISTRY OF LAW, JUSTICE PARLIMANETRY AFFAIRS
# (LAW & JUSTICE DIVISION)

No. F. 2(1) /91-Pub. **Islamabad, the 7th October, 91**

The following Ordinance made by the president is hereby published for general information:

## ORDINANCE NO. XXXVII OF 1991
## AN
## ORDINANCE

Further to amend the agricultural pesticides ordinance, 1971

WHEREAS it is expedient further to amend the Agriculture Pesticides Ordinance 1971(II of 1971) for the purpose hereinafter appearing.

AND WHEREAS the National Assembly is not in session and the president is satisfied that circumstances exist which render it necessary to take immediate action.

NOW, THEREFORE, in exercise of the powers conferred by clause (1) of Article 89 of the constitution of the Islamic Republic of Pakistan, the President is pleased to wake and Promulgate the following Ordinance.

1. **Short Title and commencement:-** (1) This ordinance may be called the Agricultural Pesticides (Amendment) Ordinance, 1991.

2. it shall come into force at once.

2. **Amendment of section 3, Ordinance II of 1971:-** In the Agricultural Pesticides ordinance, 1971(II of 1971), hereinafter refereed to as the said ordinance in section 3,.

   i) clause (c) shall be omitted

   ii) in clause (h).

      (a) the words a brand of twice occurring shall be omitted and

      (b) for the word brand at the end the word pesticides shall be substituted and

   iii) in clause (q), the words brand of shall be omitted.

3. Amendment of section 4, ordinance II of 1971:-

   In the said Ordinance, in section 4,-

   (a) the words brand of shall be omitted and.

   (b) for the full stop at the end a colon shall be substituted and thereafter the following privies shall be added, namely provided that the Federal Government may, by notification in the official Gazette, direct that a pesticide specified in the notification and not having a trade name shall not be imported except by a class or classes of importers so specified.

3. Amendment of Section 5, Ordinance II of 1971:-In the said Ordinance , in section 5,

   i) in sub-section (1)

      (a) the words “brand of a” shall be omitted and.

      (b) For the word “brand” the word pesticide shall be substituted.

   ii) in sub-section (4)

      (a) the words “brand of a” shall be omitted

      (b) in clause (a) for the word ‘brand” the words “name of the pesticide’ shall be substituted and

      (c) in clause (b), for the word “brand” the word “pesticide” shall be substituted and

   iii) in sub-section (5) the words “brand of a” shall be omitted.

1. Amendment of section 6, ordinance II of 1971:- In the said Ordinance, in section 6, the word “brand of a” shall be omitted.

2. Amendment of section 7, ordinance II or 1971:- In the said Ordinance, in section 7, the words “the brand of” shall be omitted.

3. Amendment of section 8, ordinance II or 1971:- In the said ordinance, in section 8-

   i) in sub – section (I):-

      (a) the words “brand of a” shall be omitted and

      (b) for the word “brand” the word “pesticide” shall be substituted; and

   ii) in sub-section (2), for the words “the brand” to which it relates the word “pesticide” shall be substituted.

4. Amendment of section 13, Ordinance II of 1971:- In the said Ordinance, in section 13, in sub-section (3), the words “brands of” shall be omitted.

5. Amendment of section 21, ordinance II of 1971:-In the said ordinance, in section 21, in clause (a).

   i) the words “brand of a” shall be omitted and

   ii) for the words “the brand” the words any description shall be substituted.

6. Amendment of section 29, ordinance II of 1971:- In the said ordinance, in section 29:-

   (a) in sub-section (2).

   i) in clause (b), the words “brands of a” shall be omitted

   ii) In clause (c) the words “brand of pesticides” the words “pesticides not having a trade name or otherwise” shall be substituted.

   iii) In clause (e) in sub-clause (i) the words “brand of” shall be omitted and

   iv) In clause (m) the words “brands of” shall be omitted.

**GHULAM ISHAQ KAHN**
**PRESIDENT**

(AMJAD ALI)
DRAFTSMAN / ADDL. SECRETARY

THE GAZETTE OF PAKISTAN

EXTRAORDINARY
PUBLISHED BY AUTHORITY
ISLAMABAD, WEDNESDAY, SEPTEMBER 2, 1992

## PART 1

Acts, Ordinances, President's Orders and Regulations

## SENATE SECRETARIAT

*Islamabad, the 2nd September, 1992*

The following Acts of Majlish-e-Shoora (Parliament) received the assent of the President on the 30th September 1992 and are hereby published for general information: -

## ACT No. XIX OF 1992

An Act further to amend the Agricultural Pesticides Ordinance, 1971

WHEREAS it is expedient further to amend the Agricultural Pesticides Ordinance

1971 (II of 1971) for the purpose hereinafter appearing:

It is hereby enacted as follows: -

(1) Short title and commencement. (1) This Act may be called the Agricultural Pesticides (Amendment) Act, 1992.

(2) It shall come into force at once.

(1) Amendment of section 3, Ordinance II of 1971. In the Agricultural Pesticides Ordinance, 1971 (II of 1971), hereinafter referred to as the said Ordinance, in section 3.

(i) Clause (c) shall be omitted;



(ii) in clause (h)

(a) the words "a brand of " occurring twice, shall be omitted; and

(b) for the word "brand" at the end the word "pesticide" shall be substituted; and

(iii) in clause (q), the words " brand of" shall be omitted.

3. Substitution of section 4, Ordinance II of 1971, - In the said Ordinance, for section 4 the following shall be substituted, namely: -

"4. No person shall import, manufacture, formulate, sell, offer for sale, hold any stock for sale or in any manner advertise any pesticide which has not been registered in the manner provided by this Act or the rules framed thereunder:

Provided that the Federal Government may, by notification in the official gazette directed that the pesticide specified in the notification and not having a trade name will be imported only by a class or classes of importers as specified; except a pesticide having a trade name and registered in the country of manufacture which may be imported without undergoing the registration process but subject to the condition notified from time to time by the Federal Government."

4. **Amendment of section 5,Ordinance II of 1971-** In the said Ordinance, in section 5.

(i) in sub -section (1),__

(a) the words " brand of a" shall be omitted; and

(b) for the word "brand" the word " pesticide" shall be substituted;

(ii) in sub-section (4),__

(a) the words "brand of a " shall be omitted;

(a) in clause(a), for the word "brand" the words "name of the pesticide" shall be substituted; and

(b) in clause(b), for the word "brand" the word "pesticide" shall be substituted; and

(c) in clause (b) for the word “brand” the word pesticide shall be substituted; and

(iii) in sub-section(5), the words "brand of a " shall be omitted,

5. **Amendment of section 6, Ordinance II of 1971,__** In the said Ordinance, in section 6, the words "brand of a" shall be omitted.

6. **Amendment of section 7, Ordinance II of 1971, __** In the said Ordinance, in section 7, the words "the brand of" shall be omitted.

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7. **Amendment of section 8, Ordinance II of 1971,--** In the said Ordinance, in section 8, --

(i) in sub-section (I),--

(a) the words "brand of a" shall be omitted; and

(b) for the word "brand" the word "pesticide" shall be substituted; and

(ii) in sub-section (2), for the words " the brand to which it relates" the word "pesticide" shall be substituted;

8. **Amendment of section 13, Ordinance II of 1971 -** In the said Ordinance, in section 13,-

(a) in sub-section (1) after the word " Laboratory", the word and common as "or, in consultation with the Provincial Government, declare a Provincial Laboratory as Pesticide Laboratory which may be" shall or inserted; and

(b) in sub-section (3), the words "brands of" shall be omitted.

9. **Amendment of section 21, Ordinance II of 1971,--** In the said Ordinance, in section 21, -

(a) in clause (a),-

(i) the words "brand of a " shall be omitted; and

(ii) for the words "the brand" the words "any description" shall be substituted; and

(b) for the words "with fine which may extend to one thousand rupees and for every subsequent offence with fine which shall not be less than two thousand rupees or more than three thousand rupees and in default of payment of any such fine with imprisonment for a term which may extend to one year" the words" with imprisonment for a term of six months and with fine amounting to twenty-five thousand rupees and for every subsequent offence with imprisonment for a term of one year and with fine amounting to fifty thousand rupees" shall be substituted.

10. **Amendment of section 22, Ordinance 1 of 1971,-** In the said Ordinance, in section 22, for the words "fine which may extend to one thousand rupees" the words "imprisonment for a term which may extend to six months and with fine amounting to twenty-five thousand rupees" shall be substituted.

11. **Amendment of section 23, Ordinance II of 1971,-** In the said Ordinance, in section 23, for the words "fine which shall not be less than two thousand and five hundred rupees or with imprisonment for a term which shall not be less than one year or more than two year" the words "imprisonment for a term which shall not be less than two years or more than four years and with fine amounting to one hundred thousand rupees" shall be substituted.



11 **Amendment of section 29, Ordinance II of 1971,-** In the said Ordinance, in section 29,-

(a) in sub-section(2),

(i) in clause (b), the words "brand of a " shall be omitted;

(ii) in clause (c), for the words "brand of pesticides" the words "pesticides not having a trade name or otherwise" shall be substituted;

(iii) in clause (e), in sub-clause (i), the words "'Brands of" shall be omitted; and

(iv) in clause (m), the words "brands of" shall be omitted.

RAHATULLAH KHAN JARRAL.
*Secretary.*

THE GAZETTE OF PAKISTAN

EXTRAORDINARY
PUBLISHED BY AUTHORITY
ISLAMABAD, MONDAY, DECEMBER 8, 1997

## PART 1

Acts, Ordinances, President's Orders and Regulations

## SENATE SECRETARIAT

*Islamabad, the 8th November, 1997*

The following Act of Majlis-e-Shoora (Parliament) received the assent of the president on the Ist December, 1997, is hereby published for general information: -

## ACT NO. XXXIX OF 1997

*An Act further to amend the Agricultural Pesticides Ordinance, 1971*

WHEREAS it is expedient further to amend the Agricultural Pesticides Ordinance 1971 (II of 1971) for the purpose hereinafter appearing: -

It is hereby enacted as follows: -

1. **Short title and commencement,-** (1) This Act may be called the Agricultural Pesticides (Amendment) Act, 1997.

   (2) It shall come into force at once.

2. **Amendment of section 3, Ordinance II of 1971, -** In the Agricultural Pesticides Ordinance, 1971 (II of 1971), hereinafter referred to as the said Ordinance, in section 3,-

   (a) for clause (a) the following shall be substituted, namely:-

      (a) "adulterated" in relation to a pesticide means a pesticide with which spurious, deleterious or harmful substance has been mixed or which is wholly or mainly ineffective for the purpose for which it is intended"; and

(b) in clause (r) the word "and" at the end shall be omitted and after clause (r) the following new clause shall be inserted namely: -

"(rr) "sub standard" when used with reference to a pesticide, means any pesticide the strength or purity of which fall below the professed standard or quality which is expressed on its label or under which it is sold or a pesticide any valuable ingredient of which has been wholly or partially extracted; and"

3. **Amendment of section 10, Ordinance II of 1971,-** In the said Ordinance, -

(a) section 10 shall be re-numbered as sub-section (1) of that section and in sub-section (1) re-numbered as aforesaid the words "branded or" shall be omitted; and.

(b) After sub-section (1) amended as aforesaid the following new subsection shall be added, namely;-

"(2) Any dealer wholesaler, retailer or an agent who has been convicted of not less than two offences under this Ordinance shall be black listed by the importer, manufacturer, distributor or formulator of the pesticide in question."

4. **Substitution of section 21, Ordinance II of 1971, -** In the said Ordinance for section 21, the following shall be substituted, namely : -

"21. *Offences and penalties,-(1)* Any person who imports, manufactures, formulates, sells, offers or exposes for sale, holds in stock for sale or advertises for sale an adulterated or sub-standard pesticide shall be guilty of an offence.

(2) The person guilty of an offence under sub-section (1) shall be punished:-

(a) in the case of an adulterated pesticide, in relation to a first offence with imprisonment for a term which shall not be less than one year or more than three and with fine amounting to five hundred thousand rupees and for every, subsequent offence with imprisonment for a term which shall not be less than two years or more than three years and with fine which shall not be less than five hundred thousand rupees or more than one million rupees; and



(b) in the case of a sub-standard pesticide, in relation to a first offence with imprisonment for a term which shall not be less than six months or more than two years and with fine which may extend to five hundred thousand rupees and for every subsequent offence with imprisonment offence with imprisonment which may extend to three years and with fine but shall not be less than the punishment given for the first offence."

5. **Insertion of new section 21A, Ordinance II of 1971, -** In the said Ordinance, after section 21 substituted as aforesaid the following new section shall be inserted, namely: -

"21A *Punishment for offences not provide for in section 21, -* Any person who contravenes any of the provision of this Ordinance or the rules for the contravention of which no other punishment is provided in this Ordinance, shall be punishable with fine which may extend to one hundred thousand rupees:

6. **Substitution of section 22, Ordinance II of 1971, -** In the said Ordinance for section 22, the following shall be substituted, namely: -

"22. *Manufacturer's warranty to dealers,* - Whoever gives a false warranty to a dealer or purchaser in respect of adulterated or sub-standard pesticide shall, unless he proves that when he gave the warranty he had good reason to believe the same to be true, be guilty of an offence punishable in the same manner and to the same extend be provided for under section 21"

7. **Amendment of section 23, Ordinance II of 1971, -** In the said Ordinance in section 23, for the words "shall be punishable with imprisonment for a word which shall not be less than two years or more than four years and fine amounting to one hundred thousand rupees" the following shall be substituted, namely: -

(i) in the case of an offence under clause (a) or (b) with imprisonment for a term which shall not be less than two years or more than three years and with fine which may extend to one million rupees; and

(ii) in the case of an offence under clause (c) with imprisonment for a term which extend to six months and with fine which may extend to one hundred thousand rupees".

8. **Amendment of section 24, Ordinance II of 1971, -** In the said Ordinance after sub-section (2) the following new sub-section shall be added, namely;-

"(3) an inspector may apply to the District Magistrate, Additional District Magistrate, Sub-Divisional Magistrate of the District or Sub-Division or Tehsil or Taluka,



as the case may be, for police assistance and such Magistrate may direct that an executive magistrate shall accompany the Inspector alongwith a police party for the purpose of collecting same for examination."

9. **Addition of new section 26A, Ordinance II of 1971,-** In the said Ordinance, after section 26, the following new section shall be inserted, namely:-

*"26A Cognizance and prosecution of offences,* - The offences punishable under this Ordinance shall be cognizable and non- bailable but a police officer shall not register or investigate a case relating to an offence under this Ordinance except on a complaint by the Inspector and the Public Prosecutor shall be responsible for conducting prosecution of offences under this Ordinance."

ABDUL QAYYUM KHAN
*Secretary*

# AGRICULTURAL PESTICIDES RULES

**THE GAZETTE OF PAKISTAN**

**EXTRAORDINARY**
**PUBLISHED BY AUTHORITY**
**ISLAMABAD, MONDAY, AUGUST 13, 1973**

## PART II

## Statutory Notifications (S.R.O.)

## GOVERNMENT OF PAKISTAN

MINISTRY OF FOOD AND AGRICULTURE

## NOTIFICATIONS

***Islamabad, the 8th August, 1973***

S.R.O 1187(I)/73, - In exercise of the powers conferred by section 29 of the Agricultural Pesticides Ordinance, 1971, (II of 1971), The Federal Government, in consultation with the Agriculture Pesticide Technical Advisory Committee is please to make the following rules, the same having been previously published as required b sub-section (1) of the said section, namely: -

## PART 1- PRELIMINARY

1. **Short title and commencement**,-(I) These rules may be called the Agricultural Pesticides Rules, 1973.

   (a) They shall come into force at once.

2. **Definitions**,- In these rules, unless there is anything repugnant in the subject or context,-

   (a) "active ingredient" means an ingredient capable in itself of preventing, destroying, repelling or mitigating insects, fungi, rodents, weeds or other pests when used in the same manner and for the same purpose as those for which it is intended; but is not antagonistic to the activity of any other active ingredient in the same formulation;





   (b) "Director" means the Plant Protection Advisor and Director Department of Plant Protection;

   (c) "Form" means a Form appended to these rules;

   (d) "Ordinance" means the Agriculture Pesticides Ordinance, 1971 (II of 1971); and

   (e) "Section" means a section of the Ordinance.

PART 1- PRELIMINARY

3 **Application for registration of pesticides**,- An application for registration of a pesticide under sub-section (I) of section 5 shall be made to the Federal Government in Form 1.

4 **Registration of pesticides**,-(1) On receipt of an application for registration under rule 3, the Federal Government may send the application together with a sample of pesticide to the pesticides laboratory for test or analysis within one month from the receipt of sample to ascertain whether the same is in accordance with the information provided alongwith the application.

2. On receipt of the result of the test or analysis under sub-section the Federal Government may forward the same to the Provincial Government to conduct, in direct association with the applicant for the registration of a pesticide, such biological test under field conditions as may be required.

3. On receipt of a report from the Provincial Government under sub-rule (2), the Federal Government, if it is satisfied that the sample is in accordance with the information, may register the pesticide and grant two crop season from the date of application, the applicant a certificate of registration in Form 2 and assign to the certificate a registration number.

4. A certificate of registration granted under sub-rule (3) shall apply only to the pesticide described in the application to which the certificate relates.

5. With the approval of the Federal Government, an application for the registration of a pesticide may be amended before or other registration and the registration shall for the purpose of these rules, be deemed to relate to the application as amended.

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6. A certificate of registration shall be valid for a period of three years any may be renewed for a further period of three year at a time on an application made in this behalf in Form 3.

7. A certificate of renewal of registration shall be in Form 4.

5. **Rejection of application, -** (1) If it appears to the Federal Government that the result of the test of analysis under sub-rules (2) and (3) of rule do not corporate with the information supplied by the applicant or that the labels and containers intended to be used do not confirm to the provisions of these rules, it may crop seasons from the date of application, reject the application for registration and shall inform of the applicant of the reasons for the rejection and supply him with full particulars of the tests, it any applied.

2. The rejection of an application for registration of pesticide shall, however not debar the applicant from making a fresh application for registration.

6. **Fees,** A fee of five hundred rupees shall be paid with each application for a certificate or renewal of a certificate of registration and shall in no case be refunded to the applicant.

7. **Copies of Certificate, -** Copies of all certificates granted under rule 4 may be obtained from the Federal Government on payment of a fee of twenty rupees by the person on whose application it had been registered or his agent.

8. **Discontinuation of manufacture or formulation**, **-** If the manufacture or formulation of any registered pesticide is discontinued, the manufacturer or formulator or his agent shall, within six months from the date of such discontinuance give notice of the fact to the Federal Government.

## PART III - IMPORT

9. **Import of pesticides, -** (1) No pesticide, except for experimental purpose shall be imported into Pakistan unless it has been registered under rule 4.

2. No pesticide shall be imported unless it complies strictly with the details given in the application for registration.

3. No pesticide shall be imported unless its is packed and labeled in conformity with the rule in part V.



4. No pesticide shall be imported unless the importer has proper facilities for storage of pesticides as laid down in the rules in part VI.

*PART IV-MANUFACTURE, FORMULATION OR SALE*

10 **Conditions to be fulfilled after registration of a pesticides for manufacture and formulation,-** A person who intends to manufacture or formulate a pesticide registered under rule 4 shall-

(a) provide and maintain an adequate qualified staff and adequate premises and plant for the proper manufacture or formulation and storage of pesticide in respect of which the certificate of registration has been granted and shall also maintain a laboratory suitable for carrying out quality control rests of the pesticides as may be specified by the Federal Government or the Provincial Government.

(b) keep record of the details of manufacture or formulation of each batch of the pesticide which is issued for sale and of the application of the tests thereof;

(c) allow any inspector, authorized by the Provincial Government in that behalf, to enter any premises where the manufacture or formulation is being carried out on an to inspect the premises and the means employed for testing of pesticides:

(d) from time to time, report to the Provincial Government any change in the expert staff responsible for the manufacture or formulation of the pesticide and any material alterations in the plant or premises used for that purpose:

(e) observe the condition for the storage of pesticides as laid down in part VI of these rules;

(f) provide such protective clothing as may be required to the workers and take all necessary precaution for their protection as may be specified by the Director; and

(g) arrange medical check up of the workers as often as required or at least twice a year and provide free of cost medical treatment.



11 **Condition to be fulfilled for the sale of a registered pesticide,-** A person to whom a certificate for the sale of a registered pesticide has been granted shall-

(a) maintain adequate number of properly qualified technical staff consisting of entomologists, plant pathologists and toxicologists having sufficient knowledge regarding the products, its use, storage transportation, packaging and safety measures;

(b) maintain proper storage facilities for pesticides;

(c) provide necessary training to the seller regarding safe, storage handling safety measures and use of pesticides; and

(d) keep the pesticide and the prescribed package.

PART V –PACKING AND LABELLING

12. **Packing, -** The container of pesticide shall be such as may be suitable for its storing and transportation and shall be of such material which does not deteriorate the pesticide at least for the period of guarantee.

13. **Labeling**, **-** No. person shall sell or distribute any pesticide unless it is registered and labelled in accordance with these rules.

14. **Manner of labeling,-** The following information shall be printed conspicuously, legibly and indelibly on the containers and every tag or label attached thereto, namely: **-**

(a) name of the product
(b) name and address of the manufacturer or formulator or the person in whose name the pesticide is registered.
(c) net contents
(d) registration number
(e) date of manufacture/formulation
(f) date of test
(g) normal storage stability
(h) the name and percentage by weight of active ingredient and total percentage by weight of other ingredients
(i) the words "Meant For Agricultural Use Only"
(j) warning or caution statements (the required signal word such as "Danger" "Warning" or "Caution" and the statement "Keep" our of reach of children) must appear on the front panel; and the front panel of the labelled pesticides must contain the following namely: **-**



(i) the word "POISON" in red on a contrasting back ground
(ii) the word "DANGER"
(iii) a picture of skull and cross-bones; and
(iv) a statement of antidote, including direction to call a physician immediately.

(k) direction for use which are adequate to protect the public (optional on label) may appear on accompanying printed or graphic matter; and

(l) direction to destroy empty containers and to bury them to the ground.

15. **Information on container, etc.-** No information inconsistent with or, in any manner, not qualifying a guarantee shall be shown on any container tags or label.

*PART VI-STORAGE AND USE*

16. **Requirement in respect of the place storage**,**-**(1) The place where the pesticide is stored shall be suitably equipped, ventilated and soundly constructed and be kept clean and in a good state of maintenance. The store place must be provided with the following notice on the door:

**"NO ENTRY FOR UNAUTHORIZED PERSONS, NAKED LIGHTS AND SMOKING PROHIBITED"**

(2) When not in use, the entrance to the place or storage must be properly closed and clearly marked "PESTICIDES" and shall bear a picture of skull and cross-bones of at least three inches in length.

(3) The electrical installations must be sound in view of the chemical substances.

(4) Necessary installations and precautions against fire hazards shall be provided.

17. Requirements regarding empty packages and pesticides remains, -

(1) The destruction and removal of the empty packages and pesticide remains shall be effected in such a way that sources of water supply are not contaminated.

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(2) The uncleaned packages shall be destroyed in a way as to preclude the possibility of their being reused for any purpose other than as base material.

18. **Requirement relating to use,-** The premises in which pesticides are stored or empty package and pesticide remains are removed or destroyed shall have the –

(a) washing facilities with water, soap and towel;

(b) in case of danger of poisoning or affection of the skin, suitable protective clothing and masks to be worn by the workers.

(2) Persons engaged in spraying pesticides shall use the protective clothing and masks specified in sub-rule (1) as and when required.

## PART VII-AGRICULTURE PESTICIDE TECHNICAL ADVISORY COMMITTEE

19. Function of the Agriculture Pesticide Technical Advisory Committee, - the following shall be the function of the Agriculture Pesticide Technical Advisory Committee, namely:-

(a) a study of the working of these rules with a view to recommending to the Federal Government any amendments that may be necessary therein;

(b) registration of pesticide; and

(c) approval of specification of technical grades of registered pests for local procurement or import.

## PART VIII –PESTICIDE LABORATORY

20. **Function of Pesticides Laboratory, -** The following shall be the function of the Pesticide Laboratory, namely: -

(a) to analyse and test such samples of pesticides as may be sent. It under the Ordinance and these rules; and

(b) to carry out such other duties as may be entrusted to it by Federal Government or a Provincial Government.

21. Dispatch of samples for test or analysis in the Pesticide Laboratory

1) Samples of pesticides for test or analysis in the Pesticides Laboratory should be sent by registered post in sealed packed, together with a Memorandum Form 5, in an outer cover addressed to the Director.

2) The packet as well as the outer cover shall be marked with a distinguishing number.

3) A copy of the Memorandum in Form 5, and a specimen impression of the seal used to seal the packet shall be sent by separately by registered post to the Director.

22. **Recording of conditions of seals**.- On receipt of the packet, it shall opened by an officer authorized in writing in that behalf by the Director who shall record the condition of the seals on the packet.

23. **Report of result of test or analysis, -** (1) after test or analysis the report of the result of test or analysis together with full particulars of the test application shall be forthwith to the sender in Form 6.

(3) The report of the test or analysis shall be signed by the director or officer authorized by him.

24. **Access to information**,- No person other than an officer of the Pesticide Laboratory authorized in writing by the director shall have access to the formulation deposited in the Laboratory.

25. **Destruction of information, -** The formula deposited in the pesticide Laboratory shall be destroyed by the Director, -

(a) if the application for registration is rejected or

(b) if the certificate of registration is cancelled.

26. **Disclosure of information**, - No person on the staff of the pesticides laboratory shall disclose to any person not on the staff of the Laboratory and information relating to the composition of a particular pesticide acquired the course of his duties in the laboratory.

Provided that the Director or any officer authorized by him in this behalf may, with the previous sanction of the Federal Government, disclose any information so acquired to the extent necessary for the purpose of a prosecution under the Ordinance.



## PART IX –GOVERNMENT ANALYST AND INSPECTOR

27. **Qualification of Government analyst.-** No person shall be appointed to be a Government Analyst for pesticides unless the possess a Master's Degree in Chemistry or Entomology or toxicology or plant pathology or plant protection and has at least five years experience in the analysis of pesticides.

28. **Duties of Government analyst.-** The Government Analyst for pesticides shall analyses or test or cause to be analyzed or tested such samples of pesticides as may be sent to him by Inspectors under sub-section (2) of section 17 or other person under section 20 and furnish reports of the result of test or analysis in accordance with these rules.

29. **Procedure on receipt of sample,-** (1) On receipt of a package from an inspector containing a sample of pesticide for test or analysis under the rule 36 the Government Analyst shall compare the seals on the packet with the specimen impression received separately and shall note the condition of the seals on the package.

(2) After the test or analysis has been completed the Government Analyst shall forthwith supply to the inspector a report in triplicate in Form 7 of the result of the test or analysis, together with full details of the test methods applied.

30. **Report of results of test or analysis, -** An application from a purchaser for test or analysis of pesticide under section 20 shall be made in Form 8 and the report of the test or analysis of the pesticide made on such application shall be supplied to the applicant in Form 9.

31. **Fees, -** The fees for the test or analysis of a pesticide under section 20 shall be those as are specified in schedule 1 to these rules.

32. **Duties of Inspectors, -** Subject to the provisions of section 16 of these rules an Inspector may, within the local limits of the area for which he is appointed-

(a) Inspect any premises wherein any pesticide is being manufactured or formulated, the means employed for quality control and testing of pesticides and all records and registers relating thereto;



(b) Inspect any premises wherein any pesticide is being sold or stocked or exhibited for sale or is being distributed, the storage arrangements and all relevant records and registers relating thereto

(c) Take samples of any pesticide which is being manufactured or formulated or being sold or is stocked or exhibited for sale or is being distributed and forward them for test or analysis in accordance with these rules provided that a sample shall not exceed two pounds (one kilogram) in quantity;

(d) enter and search, at all reasonable times, with such assistance, if any as he consider necessary , any building vessel or place in which he has reason to believe from personal knowledge or from information given by any person and taken down n writing that an offence under the Ordinance or these rules has been or is being committed;

(e) seize such pesticide and all materials used in the manufacture there of and all other articles including registers, each memos, invoices bill which he has reason to believe may furnish evidence of the commission of an offence punishable under the Ordinance or these rules.

33. **Form of intimation of purpose of taking samples, -** Where an inspector takes a sample for the purpose of test or analysis he shall intimate such purpose in writing in Form 10 to the person from whom he takes it.

34. **Prohibition of disclosure of Information, -** Except for the purpose of official business or when required by a court of law, an Inspector shall not without the sanction in writing of his official superior, disclose to any person any information required by him in the course of his official duties.

35. **Form of receipt for seized pesticide, -** A receipt by an Inspector the stock of any pesticide seized under sub-section (1) of section 24 shall be in Form 11.



36. **Procedure for dispatch of samples of pesticide to Government Analyst, -**

(1) The portion of the sample or the container to be sent by an Inspector to the Government Analyst for test or analysis under the Ordinance shall be sent by registered post or by hand in a sealed packet together with a memorandum in Form to in an outer cover addressed to the Government Analyst.

(2) A copy of the memorandum and a specimen impression of seal used to seal the packet shall be sent to the Government Analyst separately by registered post or by hand.

## PART X-PESTICIDES AND THEIR ANTIDOTES

37. **Nomenclature of pests, -** The insects pests of various crops, plant disease of weeds and other animal pests infesting agriculture crops, the scientific and common names of which are set out in schedule II, III and IV, respectively to these rules shall be deemed to be insects, fungi and other plant or animal pests, within the meaning of the Ordinance and these rules.

38. **Pesticide to be labeled poison,-** The pesticides set out in schedule V to these rules shall be labeled "POISON".

39. **Symptoms of poisoning, first aid and antidotes of pesticides, -** The symptoms of poisoning from various pesticides, first-aid that should be given and the antidotes of each pesticides are set out in schedule VI to these rules.

## PART XI –SAFETY PRECAUTIONS

40. **Standard precautions, -** The following precautions shall be observed with working with any kind of pesticides, namely: **-**

1) read the "label" carefully, especially the safety precaution before handling any pesticide;
2) do not eat, drink or smoke;
3) when opening the container or while transferring, diluting or mixing pesticides, wear protective gloves, overalls respirators, goggles as the case may be:
4) avoid working in the pesticide mist or drift.
5) avoid breathing pesticides
6) avoid contact with skin, eyes and mouth;



7) avoid contamination clothing;
8) avoid spilling and splashing;
9) wash and flush off pesticide form skin and eyes immediately;
10) remove heavy contaminated clothing and footwear immediately; and
11) wash thoroughly protective clothing, gloves etc. immediately after use.

41. **Safety precautions for the health of workers, -** Every employer shall observe the following precautions against poisoning by pesticides, namely:**-**

1. not to employ a worker aged below 18 and over 60 years for working with pesticides;
2. To ensure that workers are thoroughly trained in the precautions to be observed and are being adequately supervised qualified supervisors;
3. Not to permit a worker on job unless he is using standard protective clothing or devices or those otherwise prescribed for the specific product being handled by him;
4. To provide workers with the prescribed protective clothing and respirators or dust filters with adequate number of replacement filters;
5. To provide soap, clean towels, clean water in quantities to be sufficient for all the workers likely to use them and must be sited near but outside the area where it is likely to be contaminated with the pesticide being handled by them, such water if not on tap, must be marked as "for personal washing only";

6. To provide accommodation which must be properly ventilated and must be suitable to prevent the contamination of workers personal clothing not worn during working hours;
7. To provide drinking water and vessels and ensure that workers food and drinks are not contaminated by the pesticides;
8. To ensure that a worker does not eat, drink or smoke unless he has removed all of his protective clothing except overalls and books and has washed his hands and face and has left the area of work;

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9. To make available water in sufficient quantities and containers in which to wash the protective clothing;
10. To ensure that protective devices such as rubber gloves are washed from inside and outside and respirators and dust masks are cleaned and ventilated at the end of each days work;
11. To ensure that unless badly stained or thoroughly soiled or drenched by pesticides which require immediate washing the overalls and boots are washed at least once a week;
12. Keep a record containing:-
    (a) name and address of every workers;
    (b) number of hours each worker spends each day on job;
    (c) The pesticides used;
    (d) Any case of suspected illness or unexplained; absence from work after using the pesticides;
13. to give to the worker, who leaves his employment, a copy of particulars specified in clause (xii) during atleast 6 previous months;
14. to ensure that a worker does no blow, suck or put his mouth to jet, sprinkler, nozzle or soil applicator or machinery of whatever description that has been used with pesticides.

**Part XII(Method to be followed by Pesticide Laboratory)**

42. **Analytical Methods:** The Pesticide Laboratory shall follow the following methods, in order as they are given, for formulation and residue analysis of pesticides namely:
    (1) Methods of Association of Official Agricultural Chemists(AOAC) of USA.
    (2) Methods of Collaborate International Pesticides Analytical Council(CIPAC).
    (3) Methods of Formulation Penal OF Pesticide Analytical Committee(PAC) of the Ministry of Agriculture, Fisheries & Food, UK.
    (4) Methods of WHO. Specifications of Pesticides.
    (5) Methods published in periodicals from time to time.
    (6) Methods of Federal Drug Administration (FDA) OF USA.
    (7) Methods given by the firm.
43. **Limit of Variability to allowed:** The Pesticide Laboratory shall follow the limit of variability to be allowed in the analytical results, that is, tolerance in the contents of active ingredients in pesticides consignments in the Light of Appendix V to the "Manual on the use of FAO. Specifications for Plant Protection Products."

## FORM 2

***(for official use only)***

**No……**

## CERTIFICATE OF REGISTRATION

(a) Certified that the pesticide has been registered in the name of the under taking whose particulars are specified below:-

i) Name of the undertaking:

ii) Address:

iii) Registration No:

iv) Name of the pesticide (Brand, Trade, Common name of the pesticide, details regarding its composition etc)

(b) Approve of the labels, Copies of which are to be used in connection with the said brand of pesticide.

Signature of Registering Officer

Seal

Dated: Department

## FORM 3

***{(See rule 4(6)}***

## APPLICATION FOR RENEWAL OF A CERTIFICATE OF REGISTRATION OF PESTICIDES

***(to be rendered in triplicate)***

1. Name of Applicant
2. Address Applicant
3. Descriptive name of brand.
4. Previous Registration No.
5. Changes, if any, made since the original Registration.

I hereby apply for the renewal of a certificate of registration in terms of section 8 of the Agricultural Pesticides Ordinance, 1971 (II or 1971) of which the particular are given above and I do hereby certify that no changes have been made since original registration, except as indicated above.

Dated: Signature of the Applicant.

## FORM 4

*[See rule 4(7)]*

**No……**

## CERTIFICATE OF RENEWAL OF REGISTRATION OF PESTICIDES

I do hereby:-

(a) Certify that the brand of pesticide (name of pesticide) referred to in application No…….....……. has been renewed for registration No……...…… and

(b) Certify that the following changes from the original Registration have been accepted.

Date: Signature of Registration Officer.

## FORM 5
*(See rule 21)*
## MEMORANDUM

I do hereby certify that accompanying is a sample of pesticide taken by me on …….....…….. at …….....…… (specify full address) from stock in charge of …….....…… (state name and address of importers / stockist / manufacturer / seller / formulator) …….……. In the presence of ……....…… (state name and address of witness).

The following further particulars are given in connection with the sample:-

1. Name and brand of pesticide.
2. Marks or number on sample.
3. Information given on container from which sample was taken.
4. Approximate quantity of pesticide represented by sample.
5. Other particulars.

Signature of Witness Signature of Inspector.

Place:

Date:

*Note:-* A copy of this memorandum shall be handed over or forwarded to the owner of the pesticide or to his agent. A copy shall be retained by the Inspector.

## FORM 6

*(See rule 23)*

## REPORT OF TEST OR ANALYSIS BY PESTICIDE LABORATORY

It is hereby certified:-

(1) that on ……. the sample of …….. was received from …… in the Pesticide Laboratory, Karachi for test and / or analysis.

(2) that the sample was labeled, sealed and marked…….. and

(3) that the sample was tested and /or analyzed and found that (specify details of the results of test and / or analysis)

Signature of Director
Pesticide Laboratory

Date……

## FORM 7

*[See rule 29]*

## REPORT OF RESULT OF ANALYSIS OF LIST OF TEST OF SAMPLE OF PESTICIDE BY GOVERNMENT ANALYST.

1 (Full name …….....…….. a duly appointed Government Analyst, in terms of section 14 of the Agricultural pesticides Ordinance, 1971, do hereby make oath and state……

1) that on ……..…… I received a sample of ….....…… from …… for analysis and /or test.

2) That the sample was labeled, sealed and

market……

3) That I have analyzed and/or tested the sample and found that (specify details of results of analysis and / or rest)

Signature of Government Analysis

Dated……

## FORM 8

*(See rule 30)*

**APPLICATION FOR THE TESTING OF A PESTICIDES BY THE PURCHASER**

*(to be submitted in triplicate)*

1. Name of applicant.
2. Address of applicant.
3. Name of pesticide or brand.
4. Name of the manufacturer / formulation / vendor.
5. Registration No.
6. Requirement of tests.

   Specification limit

   (i)

   (ii)

   (iii)

   I do hereby apply for the testing in terms of sec. 20 of the Agricultural Pesticide Ordinance, 1971, of the Pesticide of which particulars are given above.

   A fee of RS. ……....…… is being submitted herewith as per Schedule 1.

Dated……..  Signature of the applicant.

## FORM 9

*[See rule 30]*

REPORT OF TEST OR ANALYSIS FOR PURCHASER

1. Name of person from whom sample received
2. Date of receipt
3. Name of pesticide or brand
4. Percentage of active ingredient
5. Opinion of the Government Analyst:

   The sample referred to above is/is not of standard quality as specified.

Date  Signature of the applicant

## FORM 10

**[See rule 33]**

## INTIMATION TO PERSON FROM WHOM SAMPLE OF PESTICIDES IS TAKEN

To,

I have this day taken from the premises of …… situated at ..... Samples of the pesticides specified below for the purpose of test or analysis.

Date Signature of the applicant

## FORM 11

**[See rule 35]**

## RECEIPT OF STOCK OF PESTICIDES SEIZED UNDER SECTION 24 OF THE AGRITULTURAL PESTICIDES ORDINANCE, 1971

The stock of pesticides detailed below has this day been seized by me under the provision of section 22(i) of the Agricultural Pesticides Ordinance, 1971 from the premises of …….. situated at……..

Details of pesticides seized giving full inventory of the confiscated material with quantity of each.

Date Signature of the applicant

## FORM 12

{See rule 11 A(4)}

## APPLICATION FOR REGISTRATION AS DEALER / VENDOR OF THE AGRICULTURAL PESTICIDES.

*(To be rendered in triplicate)*

1. Name of Applicant
2. Father's Name.
3. Address of Applicant
4. No. & date of Certificate obtained for applying Pesticides.
5. Educational qualification.

I do hereby apply for registration as a dealer / Vendor of Agricultural Pesticides. My particulars which are given above are to the best of my knowledge true and correct. I undertake to abide by Agricultural Pesticides Ordinance and the Agricultural Pesticides Rules, in full.

Dated---------- Signature of the Applicant.

## FORM 13

*{See rule 11A(5)}*

*CERTIFICATE OF REGISTRATION FOR DEALER/VENDOR OF AGRICULTURAL PESTICIDES.*

**(For official use only)**

No.----------.

Certified that the person whose particulars are given below has been registered as dealer / vendor of Agricultural Pesticides

1. Name.
2. Father's Name.
3. Address.
4. No & date of Certificate obtained for applying Pesticides.

Dated_____

Signature of Registration Officer
S E A L
Department.

## *FORM 14*

*{See rule 11A(6)}*

*APPLICATION FOR RENEWAL OF CERTIFICATE OF REGISTRATION AS DEALER / VENDOR OF AGRICULTURAL PESTICIDES.*

*(To be rendered in triplicate)*

1. Name.
2. Father's Name.
3. Address.
4. No & date of Certificate of Registration.

I do hereby apply for the renewal of a certificate of registration in terms of the rule 11A OF Agricultural Pesticides Rules, 1973, of which the particulars are given above. I further certify that no changes have been made since the original registration , except as indicated above.

Dated----------

Signature of the Applicant.

## FORM 15

*{See rule 11A (7)}*

## CERTIFICATE OF REGISTRATION.

**No.**_____

I do hereby:

(a) Certify that the person whose particulars are given below as referred to in application No._____ dated _____ has been renewed for registration_____

(b) Certify that the following changes from the original registration have been accepted.

Dated_____

Signature of Registration Officer

S E A L
Department.

## SCHEDULE VI

## [SEE RULE 39]
## SYMPTOMS OF POISONING, FIRST-AID AND ANTIDOTES

### Chlorinated hydrocarbon insecticide

**Symptoms,-** these insecticide affect the central nervous system leading to convulsions, exhaustion, Numbers of extremities, apprehensions and excitement are other symptoms of poisoning from these insecticides.

**First-Aid-** As absorption through skin is most likely route of poisoning it is essential to wash off the contaminant from the body with soap and water and remove the soiled clothing. In case of ingestion evacuation of stomach is necessary.

**Antidotes, -** Usual antidotes are paraldehyde or a water-soluble barbiturate given intramuscularly or thiopentone or diazepam administered intravenously.

### Organophosphates and carbamate insecticides

**Symptoms, -** These compounds depress cholinesterase enzyme activity in the body tissue, blood and brain. Usual symptoms of intoxication the muscular trembling, weakness, coldswear, nausea, vomiting, abdominal discomfort, irritability or restlessness coupled with constricted pupil/pupils and a feeling of tightness in chest.

**First-Air, -** Necessary steps may be taken immediately to decontaminate the patient. If exposure is mild the effect will be transient. In severe cases death may occur. Keep the patient at rest and maintain respiration by artificial means, if necessary. Immediate steps may also be taken to hospitalize the patient.

**Antidotes, -** If symptoms are obvious first dose of two tablets of atropine sulphate (of 0.6 mg. Strength each0 may be administered by giving one tablet each at an interval of 20-30 minutes.

### Fumigants.

Cyanides -Symptoms, - Slight poisoning causes metallic taste in the mouth, irritation of the nose and throat, dizziness, frontal headache, constriction of chest weakness of limbs and a sensation of lack of air. These symptoms appear within a few seconds or minutes of exposure and if these warnings are ignored and if immediate treatment is not made available death may follow quickly.



**First –Aid,-** Remove the patient from the contaminated area. Keep at rest and remove contaminated clothing and wash skin thoroughly. Start artificial respiration.

**Antidotes, -** Cobalt EDTA or sodium nitrate and sodium thiosulphate are standard antidotes. Treatment should be given by a medical practitioner.

**Methyl Bromide, -** Symptoms- Burning of skin, edema of lings and central nervous system disorders are obvious symptoms. Warning symptoms of exposure are irritation of eyes and throat, headache and abdominal discomfort.

**First –Aid-** Contaminated clothing, shoes and skin must be washed off properly. Call Medical practitioner for assistance or hospitalize the patient at one.

**Antidotes, -** Where exposure is mild recovery will take place without special treatment, in other cases BAL is recommended to be tried as antidote. Treatment should therefore be symptomatic.

**Etylene dichloride, -** Symptoms- Effects are narcotic and cause renal and liver damage and the irritation of mucous membranes.

**Antidote, -** No specific antidotes are available. Therefore treatment should be symptomatic.

**Ethylene dibromide** – Symptoms- Blistering occurs on coma with skin causes irritation of mucous membrane.

**First –Aid-** Splashes should be washed form the skin and contaminated clothing removed.

**Antidote,-** Symptomatic treatment may be provided because of absence of any specific antidotes.

**Phosphene** – Symptoms- Effect gastrointestinal tract and central nervous systems with nausea, abdominal pain, vomiting and diarrhea.

**Antidote, -** No specific antidotes are available which calls for symptomatic treatment.



**Herbicides**

**Phenoxy acetates, -** Symptoms, **-** Hypersalivation, cramps, vomiting and diarrhea, convulsions and mental confusion are obvious symptoms.

**First – Aid, -** Contaminated clothing should be removal and skin washed thoroughly with soap and water.

**Treatment, -** No specific antidotes are available, therefore, treatment just be symptomatic.

***Organo-mercurial fungicides***, **-** Symptoms,- Among organic mercurial alkyl compounds ( with alcohol radical) are more toxic than aryl compounds ( with phenol radical). Acute effects of both compounds cause skin burn with redness and blisters and irritation of mucous membranes/systemic absorption causes renal damage and digestive system symptoms. Chronic toxicity from alkyl compounds causes widespread damage of central nervous system.

**First- Aid –** Wash skin thoroughly with soap and water and remove contaminated clothing.

**Antidote, -** In acute system poisoning stomach may be washed out. Therapy may be tried with dimeroapral intramuscularly, or with oral doze of 250 mg of N-acetyl penicillamine, fourness daily. A medical practitioner may administer drugs.

***Inorganic mercurial fungicides, -Symptoms, -*** Mercuric chloride causes coagulation, irritation and superficial cause of the tissue resulting in discoloration of mucous embraces. Internal abdominal pains with vomiting follow. Circulatory failure may also occur. Mercuric chloride is mush less toxic.

**First- Aid, -** Stomach may be wash with 5% solution of formaldehyde sulphoxy-late. Remove clothing and wash the body and hair thoroughly.

**Antidotes, -** Treatment with dimerapro BAL or preferably Nacetyl pencillamine proves effective. Treatment should be provided by a medical practitioner.

**THE GAZETTE OF PAKISTAN**

**EXTRAORDINARY**
**PUBLISHED BY AUTHORITY**

**ISLAMABAD, SUNDAY, NOVEMBER 10, 1985**

## PART II

### Statutory Notification (S.R.O)

### GOVERNMENT OF PAKISTAN

MINISTRY OF FOOD AND AGRICULTURE

### NOTIFICATIONS

***Islamabad, the 6th November, 1985***

**S.R.O 1108(I)/85**. – In exercise of the powers conferred by section 29 of Agricultural Pesticides Ordinance, 1971, (II of 1971), The Federal Government in consultation with the Agricultural Pesticides Technical Advisory Committee, is pleased to direct that the following further amendment shall be made in the Agricultural Pesticides Rules, 1973, the same having been previously published as required by sub-section (1) of the said section, namely: -

In the aforesaid Rules in rule 4,-

(i) in sub rule (2), for the words, "Provincial Government" the words "Provincial Governments and Federal Agencies "shall be published; and

(ii) for sub –rule (3) the following shall be substituted, namely: -

"(3) The Federal Government may, if it is satisfied that the sample is in accordance with the information, -

(a) on receipt of reports from more than one Provincial Government and a Federal Agency, where necessary or a Provincial Government and a Federal agency for two crop seasons from the date of the application; and





(b) where the crop is grown exclusively in one Province on receipt of reports for two crop seasons from the date of that application from the Government of that province or a Federal agency, under sub-rule (2), register brand of pesticide and grant the applicant a certificate of registration in Form 2, and assign to the certificate a registration number.

**M. MEHMUD**
***Deputy secretary***

THE GAZETTE OF PAKISTAN

EXTRAORDINARY

PUBLISHED BY AUTHORITY

KARACHI, MONDAY, MARCH 15, 1983

PART II

Statutory Notifications containing Rules and Orders issued by all Ministries and Divisions of the Government of Pakistan and their Attached and Subordinate Offices and the Supreme Court of Pakistan.

## Government of Pakistan.

## MINISTARY OF FOOD, AGRICULTURE AND COOPERATIVES
## (Food and Agriculture Division)

## NOTIFICATIONS

***Islamabad, the 1st March, 1993***

S.R.O. 46 (KE)/93:

In exercise of the powers conferred by the provision to Section 4 of the Agriculture Pesticides Ordinance, 1971(II of 1971), the Federal Government is pleased to direct that the Pesticides specified in column (1) of the table below, not having a trade name, shall be importable by such importers as are specified in column (2) of that table, namely:-

## TABLE

| **Pesticides** | **Importers** |
|---|---|
| (1) | (2) |
| A:- (1) Dimethoate 40 EC. | (1) Registered Pesticides Importers. |
| (2) Monocrotophos 40 WSC. | (2) Fertilizer Distributors. |
| (3) Triazophos 40 EC. | (i) Punjab Agriculture Dev. & Supplies Corp. Lahore. |
| (4) Methamidophos 60 SL. | (ii) Sind Agricultural Supplies Organization. Karach |
| (5) Cypermethrin 5 EC. 10 EC. 20 EC. | (iii) Agriculture Development Authority Peshawar. |
| (6) Acephate 40 EC. 75 SP. | (iv) Deptt. Of Agriculture Baluchistan. |
| (7) Endosulfan 35 EC. | (v) Fauji Fertilizer Co. Ltd. Rawalpindi. |
| (8) Fenvelarate 20 EC. | (vi) Dawood Chemical Ltd. Lahore. |
| (9) Benomyl 50 WP. | (vii) National Fertilizer Marketing Ltd. Lahore. |
| (10) Copper Oxychloride 50 WP. | (viii) Engro Chemical Pakistan Ltd. Karachi. |
| (11) Butachlor 60 EC. | |
| (12) Isoproturon 50 WP. 75 WP. 500 FW. | |

(3) Agriculture Cooperative Societies and large consumer, for their own consumption subject to the recommendations of the Provincial Government;

B:- (1) Fenitrothion 80/98 ULV. Public Sector only.

(2) Diazinon 80/90 ULV.

(3) Malathion 95 ULV. (4) Dimethoate 40/65 ULV.

S.R.O 47(KE)/93. – In exercise of the powers conferred by section 29 of the Agricultural Pesticides Ordinance, 1971 (II of 1971), read with Agricultural Pesticides (Amendment) Act, 1992, the Federal Government in consultation with Agricultural Technical Advisory Committee is pleased to make the following amendments in the Agricultural Pesticides rules, the same having been previously published as required by section (1) of the said section, namely:-

In the aforesaid Rules, -

(a) In rule 3, the words "brand of" shall be omitted;

(b) In Rule 4 -

(i) in sub rule (2), for the full stop at the end a colon shall be substituted and thereafter the following proviso shall be inserted, namely;-

"Provided that no biological tests may be required in respect of the imported pesticides not having a trade name; and

(ii) in sub-rule (3), the words "brand of " shall be omitted;

(c) in rule 9, in sub-rule (1) for the word "No" the words, figure, letter and comma "subject to rule 9A, no" shall be substituted;

(d) after rule 9, amended as aforesaid, the following new rule shall be inserted, namely: -

"9A, Import of pesticide not having a trade name,- (1) All importers desirous to import any pesticide not having a trade name may apply to the Federal Government for permission to make such import in Form 16 alongwith following supporting documents; namely:-

(a) the importer has accessory storage facilities which would be open to inspection by the Department of Plant Protection or by the concerned official of the Provincial Government.

(b) the importer, not being a co-operative society or an individual user of pesticides, have necessary retail packing facilities; and

(c) an undertaking that after the import of pesticides, details of such import and deliveries thereof made to various dealers shall be supplied to the Provincial Government under intimation to the Department of Plant Protection.



(2) Import of pesticides under section 4 may be allowed for initial periodof three years or for such shorter period as the Federal Government may determine:

"Provided that the Federal Government may disallow import of any pesticide forthwith on discovery of any adverse effect of a pesticide.

(3) The extension of the period to import pesticide specified in sub-rule(2) shall be subject to adverse free effects of such pesticide.

(4) The imports by co-operative societies and large consumers shall be for their own use, in accordance with their land holdings.

(5) In the case of imports of pesticides registered in the country of manufacture, in addition to the conditions specified in sub-rule(1) to sub-rule (4), the importers shall comply with the conditions specified in Form 17 and shall, for the purpose of verification of quality of pesticides, submit:-

(a) documentary proof of the pesticide's registration in the country of manufacture;

(b) proof of use of the pesticides in any member country of the organization for Economic Cooperation and Development (OECD) or China;

(c) documentary proof of the said pesticide's extensive use on relevant crop and its pests in the country of origin or any other country specified in clause(b);

(e) in Form 3, in entry 3, for the word "brand" at the end the word "pesticide" shall be substituted;

(f) in form 4, in clause (a), the words "brand of" shall be omitted;

(g) in form 5, in entry (1), the words "and brand " shall be omitted;

(h) in form 8, in entry (3), the words "or brand " shall be omitted;

(i) in form 9, in entry (3), the words "or brand " shall be omitted;

(j) after Form 15, the following new Forms shall be added; namely:-

**SULAIMAN SHAH MIAN**
*Deputy Secretary*

THE GAZETTE OF PAKISTAN, EXTRA, MARCH. 15, 1993 [PART]

## FORM 16

## [SEE RULE 9A(1)]

## APPLICATION FOR THE IMPORT PERMISSION OF PESTICIDE NOT HAVING A TRADE NAME (TO BE RENDERED IN TRIPLICATE)

I. Name and address of the applicant.

II. Name and address of the manufacturer.

III. Name of the Product (Generic Name).

IV. Common Name (proposed or accepted by ISO) if different from the Generic name.

V. Structural Formula.

VI. Chemical Name IUPAC. nomenclature

VII. Emprical Formula and Molecular Weight.

VIII. Manufacturer's Development Code Number(s).

IX. Active Ingredient:

1) Physical State :
2) Colour :
3) Odour :
4) Melting Point :
5) Decomposition Point :
6) Boiling Point :
7) Vapour Pressure(Figure should be given at a stated temperature preferably in the range of 20 - 25 C.) :
8) Density (for liquids only) :
9) Hydrolysis rate under stated relevant conditions :



10) Photolysis :
11) Abosrption Spectra eg. Ultra-voilet and infra-red etc. :
12) Any other relevant properties :

X. TECHNICAL GRADE MATERIALS:

1) Source (Name and address of the manufacturer and address where manufactured) :
2) Physical State :
3) Colour :
4) Odour :
5) Minimum & maximum Active Ingredient content in w/w%. :
6) Identity and amount of Isomers, Impurities and other by products together with information on their possible range expressed as w/w. :

The applicant shall supply details of impurities. :

7) Storage Stability :

XI. FORMULATED PRODUCTS

1) Identity :
2) Use Category :
3) Type of Formulation :

| | | |
|---|---|---|
| 4) | Content of Active Ingredient(s) | : |
| 5) | Content and nature (identity if possible) of other components. | : |
| 6) | Water Content (above relevant) | : |
| 7) | Appearance | : |



| | | |
|---|---|---|
| 8) | Storage Stability (in respect of composition and physical properties related to use) | : |
| 9) | Density (for liquids only.) | : |
| 10) | Flammability<br>a) Liquids (Flash Point)<br>b) Solids (A statement must be made as to whether the product is flammable / inflammable. | : |
| 11) | Acidity (where relevant) | : |
| 12) | Alkalinity (where relevant) | : |
| 13) | Other properties may in certain cases needs evaluation. | : |
| 14) | Wettability (for Dispersible Powders) | : |
| 15) | Persistent Foam for formulations applied in water. | : |
| 16) | Suspensibility (for Dispersible Powders and suspensing concentrates) | : |
| 17) | Wet Sieve Test (for dispersible powders and suspension concentraton) | : |
| 18) | Dry Sieve Test (for Granules and Dusts) | : |
| 19) | Emulsion Stability (for Emulsifiable concentrates) | : |
| 20) | Corrosiveness(where necessary) | : |
| 21) | Known Incompatibilities with other products eg. pesticides, fertilizers. | : |

XII. EFFICACY.

| | | |
|---|---|---|
| 1) | Primary evaluation data using harmonized method and reported in a systematically presented complete dossier. | : |

XIII. TOXICOLOGICAL DATA.

1) Acute Oral Toxicity. :
2) Acute Percutanious toxicity :
3) Acute Inhalation :

THE GAZETTE OF PAKISTAN, EXTRA, MARCH. 15, 1993 [PART]

4) Skin irritation
5) Eye irritation.
6) Direct observations eg. clinical cases
7) Health records both from industry and agriculture.
8) Treatment of poisoning
9) First-aid measures
10) Supplementary Treatment

XIV. PREDICTION OF ENVIRONMENTAL EFFECTS.

1) Fate and mobility studies of the toxicant. :
2) Method of application of pesticide :
3) Time of application
4) Rate of application
5) Scale of use (No. of applications etc.)
6) Volatility of the product :
7) Water Solubility
8) Effects on Birds
9) Effects on Fish
10) Effects on Fish Food Species
11) Effects on Honey Bees
12) Effects on Local aquatic species
13) Effects on Soil organisms

XV. DISPOSAL OF SURPLUS PESTICIDES AND PESTICIDE CONTAINERS.

1) Any additional information (see guidelines for disposal of surplus pesticides and pesticides containers Annexure " ").

THE GAZETTE OF PAKISTAN, EXTRA, MARCH. 15, 1993 [PART]

XVI. PROPOSAL FOR LABELLING AND DIRECTIONS FOR USE.

1) A draft label with any additional information not included in the guidelines(see guidelines for labeling Annexure-" ".)

XVII. STORAGE STABILITY.

XVIII. PACKING.

1) State weight (or for liquids volume) and the sizes of package the product is to be marketed and for each size the type of package for instance 1 kg. in canes with screw plug and 50 kg. in iron drums.

   Please note that the product must be sold only in the package, size and type notified to the Plant Protection Department and for which the label is approved.

2) Classification during transport.

XIX. METHODS OF ANALYSIS.

1) Methods to determine the active ingredient of the product (the accuracy of the method of determination should be stated)

2) Method to determine the amount of isomers, impurities and other by-products.

XX. LABELLED SAMPLES FOR ANALYSIS.

The samples shall be despathched by the manufacturer directly to the department.

1) Analytical reference standard of 2-5 gms.

2) Technical grade material 0.5 - 1.0 kg.

3) Formulated product 1 lit. for each formulation.

REGISTRATION / ANALYSIS FEES.

Ruppees 25000/- & RS. 5000/- (Ruppees Twenty Five Thousand & Five Thousand only) respectively to be deposited by Treasury Challan payable under budget head Central.

THE GAZETTE OF PAKISTAN, EXTRA, MARCH. 15, 1993 [PART]

I do hereby apply for registration of the pesticide particulars of which are given above and hereby certify that these particulars are to the best of my knowledge true and correct.

Date._____.

SIGNATURE OF APPLICANT

## FORM 17
## APPLICATION FOR THE IMPORT OF PESTICIDES REGISTERED ABROAD
## (TO BE RENDERED IN DUPLICATE)

I. Name and address of the applicant :

II. Name and address of the Basic Manufacturer :

III. Name of the product. :

IV. Common Name :

V. Structural Formula. :

VI. Chemical Name IUPAC nomenclature :

VII. Empirical formula and molecular weight :

VIII. **TECHNICAL GRADE MATERIALS.**

1. Source (Name and address of manufacturer) :
2. Physical state. :
3. Colour. :
4. Odour. :
5. Minimum and maximum active ingredients. content in % w/w. :
6. Identity and amount of isomers, impurities and other by-products together with information on their possible range expressed as % w/w. :

   The Applicant shall supply Details of the Impurities.
7. Storage stability. :



IX. **FORMULATED PRODUCTS.**

1. Identity. :
2. Use Category. :
3. Type of formulation. :
4. Content of active ingredients(s). :
5. Content and nature (Identity if possible of other components included in the formulation of technical grade adjutants and inert ingredients. :

6. Water content (above relevant). :

7. Appearance. :

8. Density (for liquids only) gm/ml. at 25 C :

9. Flammability. :

(a) Liquids (Flash Point) :

(b) Solids. ( A statement must be made as to whether the product is flammable/inflammable). :

10) Acidity (where relevant). :

11) Alkalinity (Where Relevant). :

12) Other properties may in certain cases needs evaluation. :

13) Wettability.(For dispersible powders). :

14) Persistent foam (for formulations applied in water). :

15) Suspensibility (for dispersible powders and suspension concentrates). :

16) Wet Sieve test (for dispersible powders and suspension concentrates). :



17) Dry Sieve test (for granules, dusts). :

18) Emulsion stability (for emulsifiable concentrates).

19) Corrosiveness( when necessary). :

20) Known incompatibilities with other e.g. pesticides ,fertilizers. :

X. **EFFICACY.**

Primary evaluation data using harmonized method and reported in a systematically presented complete dossier. :

**XI. TOXICITY DATA:**

1) Acute oral toxicity. :

2) Acute percutanneous toxicity :

3) Acute inhalation. :

4) Skin irritation. :

5) Eye irritation. :

6) Direct observations e.g. clinical cases. :

| | | |
|---|---|---|
| 7) | Health records both from Industry and Agriculture. | : |
| 8) | Treatment of poisoning. | : |
| 9) | First-Aid Measures: | |
| 10) | Supplementary Treatment. | : |

XII. **RESIDUE ANALYSIS.**

| | | |
|---|---|---|
| 1) | Primary Physical, chemical and biological data. | : |
| 2) | Identification of residue design of analytical method. | : |
| 3) | Reliable residue data from supervised trials. | : |

THE GAZETTE OF PAKISTAN, EXTRA, MARCH. 15, 1993 [PART]

| | | |
|---|---|---|
| 4) | Estimation of maximum residue level at harvest. | : |
| 5) | Data on further disappearance on storage transport e.t.c. | : |
| 6) | Estimation of residue level in commodity on sale | : |
| 7) | Data on disappearance on food preparation, Cooking.or Processing | : |
| 8) | Production of potential consumer intake | : |
| 9) | Assessment of actual consumer intake | : |

XIII. **PREDICTION OF ENVIRONMENTAL EFFECTS.**

| | | |
|---|---|---|
| 1) | Fate and mobility studies of toxicant | : |
| 2) | Method of application of pesticide | : |
| 3) | Time of application | : |
| 4) | Rate of application | : |
| 5) | Scale of use ( No.of application ) | : |
| 6) | Volatility of the product | : |
| 7) | Water solubility | : |
| 8) | Effects on birds | : |
| 9) | Effects on fish | : |
| 10) | Effects on fish food species | : |
| 11) | Effects on honey bees | : |
| 12) | Effects on soil organisms. | : |

XIV. **DISPOSAL OF SURPLUS PESTICIDES AND PESTICIDE CONTAINERS**. :

XV. **PROPOSAL FOR LABELING AND DIRECTIONS FOR USE.** :

(A draft label with any additional information not included in the guidelines.)

XVI. **STORAGE FACILITIES**. :

XVII. **PACKAGING.**

1. State weight (or for liquids, volume) and the sizes of package in which the product is to : be marketed and for each size the type of package, for instance 1 Kg. in cans with with screw plug and 50 Kgs. in iron drums. Please note that the product must be sold only in the package size & type notified to the Plant Protection Department and for which the label is approved.

2. Classification during transport. :

XIX. **METHOD FOR ANALYSIS.**

1. Method to determine the active ingredient of the product (the accuracy of the method of determination should be stated ). :

2) Methods to determine the amount of isomers, impurities and by-products. :



I do hereby apply for the import of pesticide particulars of which are given above and certify that these particulars are to the best of my knowledge true and correct.

Date:----------. SIGNATURE OF THE APPLICANT.

**THE GAZETTE OF PAKISTAN**

**EXTRAORDINARY**

**PUBLISHED BY AUTHORITY**

**ISLAMABAD, MONDAY, NOVEMBER 4, 1996**

**PART II**

**Statutory Notifications (S.R.O.)**

**GOVERNMENT OF PAKISTAN**

MINISTRY OF FOOD, AGRICULTURE AND LIVESTOCK

**NOTIFICATIONS**

***Islamabad, the 31st October, 1996***

**S.R.O 1238(I)/96.** In partial modification of S.R.O. 66 (KE)/92, dated 1st March, 1992 the following draft of further amendment in the Agricultural Pesticides Rules, 1973 proposed to make in exercise of the powers conferred by section 29 of the Agricultural Pesticides Ordinance, 1971 (II of 1971), is hereby published as required by sub-section (1) of the said section for the information of all persons likely to be effected thereby and notice is hereby given that the draft will be taken into consideration after thirty days of its publication in the official Gazette.

(2) Any objection or suggestion which may be received from any person in respect of the said draft Rules before the expiry of the said period will be considered by the Federal Government.

(3) Draft Amendment in the aforesaid Rules for rule 6, the following shall be substituted, namely: -

(2) Fee L- (1) A non-refundable fee of twenty five thousand rupees shall be paid with each application for a certificate of registration of each formulation of a pesticide under sub-section (1) of section 5 of the Agricultural Pesticides Ordinance, 1971

read with the Agricultural Pesticides(Amendment) Act 1992 and a non –refundable fee of five thousand rupees shall be paid for renewal of each such certificate under sub-section 91) of section 8 of the Agricultural Pesticides Ordinance, 1971.

**ARSHID MEMBOOB KHAN**
*Section Officer*

## MINISTRY OF FOOD, AGRICULTURE AND LIVESTOCK

***Islamabad, the 30th December, 1996***

S.R.O. 1417 (I)/96, - In the partial modification of S.R.O 66(KE)/92 dated Ist March, 1992 and in exercise of the powers conferred by section 29 of APO 1971, Federal Government is please to make following further amendment in the Agricultural Pesticides rule 1973, the same have been previously published vide S.R.O.1238(I)/96, dated 31st December, 1996 as required by sub-section (I) of the said section namely: -

In the aforesaid Rules, for rule 6, the following shall be substituted, namely: -

6, Fee: - (I) A non-refundable fee of twenty five thousand rupees shall be paid with each application for a certificate of registration of each formulation of a pesticide under sub-section (I) of section 5 of the Agricultural Pesticides Ordinance 1971 read with the Agricultural Pesticides (Amendment) Act 1992 and a non-refundable fee of five thousand rupees shall be paid for renewal of each such certificate under sub –section (I) of section 8 of the Agricultural Pesticides Ordinance, 1971.

**ARSHID MEMBOOB KHAN**
*Section Officer*

**THE GAZETTE OF PAKISTAN**

**EXTRAORDINARY**

**PUBLISHED BY AUTHORITY**

**ISLAMABAD, THURSDAY, JULY 9, 1998**

**PART II**

**Statutory Notifications (S.R.O)**

## GOVERNMENT OF PAKISTAN

MINISTRY OF FOOD, AGRICULTURE AND LIVESTOCK

### Notifications

***Islamabad, the 8th July, 1998***

**S.R.O 776(I)/98, -** In exercise of the powers conferred by section 10 of section 12 of the Agricultural Pesticides Ordinance, 1971, (II of 1971), the Ministry of Food, Agricultural and Livestock is pleased to constitute the Agricultural Pesticides Technical Advisory Sub –Committee consisting of the following members for a period of three years, namely: **-**

| | | |
|---|---|---|
| 1 | Plant Protection Advisor and Director General, Department of Plant Protection, Karachi | Convener |
| 2. | Director General, Agricultural Research Institute, Faisalabad | Member |
| 3. | Director General, (Ext.) Department of Agriculture, Hyderabad | Member |
| 4. | Director General, Agriculture Research Institute, Peshawar | Member |
| 5. | Director General, Agriculture Research Institute, Quette | Member |
| 6. | Director of Research (Plant Protection), Pakistan Agricultural Research Council, Islamabad. | Member |
| 7. | Chairman, Department of Entomology University of Agriculture, Faisalabad. | Member |
| 8. | Chairman (Quality Control), Ministry of Health, Islamabad | Mamber |
| 9. | Chairman, Pakistan Agricultural Pesticides Association, Karachi. | Member |
| 10. | A Representative of the Generic Pesticides Importers | Member |
| 11. | Director (Technical), Department of Plant Protection, Karachi. | Member |

**GHULAM RABBANI KHAN**
***Section Officer***

MINISTRY OF FOOD, AGRICULTURE AND LIVESTOCK

## Notifications

***Islamabad, the 8th July, 1998***

**S.R.O 777 (I)/98, -** In exercise of the powers conferred by sub-section (10) of section 12 of the Agriculture Pesticides Ordinance 1971, the Federal Government is pleased to amend the para-2, of S.R.O 159 (I)/96, dated the 3rd March 1990 as under:

The sentence " The Committee shall scrutinize the material submitted before it within 10 days " and the sentence " In case no objection was communicated to the applicant within the said period, the material shall be deemed to have been cleared" shall stand deleted.

**MUHAMMAD YONUS**
*Section Officer*

**THE GAZETTE OF PAKISTAN**

**EXTRAORDINARY**

**PUBLISHED BY AUTHORITY**

**ISLAMABAD, WEDNESDAY, JULY 22, 1998**

**PART II**

**Statutory Notifications (S.R.O.)**

**GOVERNMENT OF PAKISTAN**

MINISTRY OF FOOD, AGRICULTURE AND LIVESTOCK

**Notifications**

***Islamabad, the 20th July, 1998***

**S.R.O 834(I)/98, -** The following draft of further amendment in the Agricultural Pesticides Rules, 1973 proposed to make in exercise of the powers conferred by section 29 of the Agricultural Pesticides Ordinance, 1971, (II of 1971), is hereby published as required by sub-section (I) of the said section for the information of all persons likely to be effected thereby and notice is hereby given that the draft will be taken into consideration after thirty days of its publication in the official Gazette.

2. Any objection or suggestion which may be received from any person in respect of the said draft rules before the expiry of the said period will be considered by the Federal Government.

3. Draft amendment in the aforesaid Rules: - In Sub-Rule (5) of rule 9 A, notified vide S.R.O 47(KE)/93 dated 15-03-1993, the comma after the word manufacturer in the first sentence shall be deleted and the following shall be added: -

"and not registered under form "1 or form 16"

**S.R.O 835(I)/91, -** The following draft of further amendment in the Agricultural Pesticides Rules, 1973 proposed to make in exercise of the powers conferred by section 29 of the Agricultural Pesticides Ordinance, 1971, (II of 1971), is hereby published as required by subsection (I) of the said section for the information of all persons likely to be effected thereby and notice is hereby given that the draft will be taken into consideration after thirty days of its publication in the official Gazette.

Any objection or suggestion which may be received from any person in respect of the said draft rule before the expiry of the said person will be considered by the Federal Government.

**Draft amendment in the aforesaid Rules for Rule 6 the following shall be added: -**

Fee L- (2)-A non-refundable fee of twenty five thousand rupees shall be paid with each application for an import permission committee of each formulation of pesticide under sub-section (I) of section 5 of the Agricultural Pesticides Ordinance, 1971 read with the Agricultural Pesticides (Amendment) Act, 1992".

**GHULAM RABBANI KHAN**
***Section Officer***

**THE GAZETTE OF PAKISTAN**

**EXTRAORDINARY**

**PUBLISHED BY AUTHORITY**

**KARACI, WEDNESDAY, AUGUST 12, 1998**

## PART II

Statutory Notifications (S.R.O.)

### Government of Pakistan.

### MINISTARY OF FOOD, AGRICULTURE AND LIVESTOCK

### NOTIFICATIONS

***Islamabad, the 8th August, 1998***

S.R.O. 889(I)/98-In partial modification of S.R.O 46 /(KE) /93, dated 15th March 1993, the following are added to the Table under heading "Pesticide" column (I) sub-heading "A" of the said S.R.O.:

13. Alpha-Cypermethrin 3 EC. 4.5 EC. & 5 EC.
14. Beta-Cypermethrin 4.5 EC. & 5 EC.
15. Carbofuran 3 G.
16. Cartap Hydrochloride 4 G.
17. Chlorpyrifos 40 EC.
18. Deltamethrin 2.5 EC.
19. Fenpropathrin 20 EC.
20. Imidacloprid 25 EC. & 25 WP.
21. Methomyl 20 EC. 40 SP. 90 SP.
22. Profenofos 40 EC. 50 EC.
23. Monomehypo 5 G.
24. Dimehypo 4 G.
25. Esfenvelarate 5 EC.
26. Thiodicarb 80 DF. 375 FW.
27. Bifenthrin 10 EC.
28. Carbosulfan 20 EC.
29. Buprofezin 25 EC. 25 WP.
30. Lambda-Cyhalothrin 2.5 EC.
31. Quinalphos 20 EC. 25 EC.
32. Trifluralin 48 EC.
33. Pendimethalin 33 EC.
34. Bromoxynil + MCPA 200/200 EC, 200/328 EC.
35. Mancozeb 70 WP. 80 WP.
36. Metalaxyl + Mancozeb (8+64%) 72 WP.
37. Carbendazim 50 WP.
38. Thiophenate methyl 70 WP.
39. Dicofol 42 EC. 42.6 EC. 18.5 EC.

[No. F-2-11/98-Pest]

**GHULAM RABANI KHAN.**
**Section Officer**

**THE GAZETTE OF PAKISTAN**

**EXTRAORDINARY**

**PUBLISHED BY AUTHORITY**

**ISLAMABAD, TUESDAY, AUGUST 18, 1998**

**PART II**

## GOVERNMENT OF PAKISTAN

MINISTRY OF FOOD, AGRICULTURE AND LIVESTOCK

### Notifications

***Islamabad, the 13th August, 1998***

**S.R.O 909(I)/98, -** In exercise of the powers conferred by sub- section 10 of section 12 of the Agricultural Pesticides Ordinance, 1971, (II of 1971), the Minister of Food, Agriculture and Livestock is pleased to constitute a steering committee for elimination of adulteration in pesticides consisting of the following members namely: -

12 Federal Minister for Food & Agriculture

13 Provincial Minister for Agriculture

14 Chairman, Task Force on Agriculture, Punjab

15 Secretary, Minister of Food, Agriculture and Livestock

16 Provincial Secretaries, Department of Agriculture

17 A representative of the Pakistan Pesticides Association

18 A representative of the Generic Pesticides Importers.

**S.R.O 910(I)/98, -** In partial amendment of the S.R.O 507 (I)/98, dated the 2nd June, 1996. It is notified for general information that in exercise of the powers conferred under section 13 of the Agricultural Pesticides Ordinance, 1971, read with the Agricultural Pesticides (Amendment) Act, 1992 the Federal Government is pleased to include the following laboratory as one of the Pesticides Testing Laboratories till the establishment of a pesticides Analytical Laboratory at Multan: Pesticides Analytical Laboratory, National Agricultural Research Council, Islamabad.

**GHULAM RABBANI KHAN**
***Section Officer***

**THE GAZETTE OF PAKISTAN**

**EXTRAORDINARY**

**PUBLISHED BY AUTHORITY**

**ISLAMABAD, MONDAY, MARCH 20, 2000**

## PART II

### Statutory Notifications (S.R.O.)

### Government of Pakistan.

### MINISTARY OF FOOD, AGRICULTURE AND LIVESTOCK

### NOTIFICATIONS

***Islamabad, the 20th March, 2000***

1- S.R.O 131 (I) /2000 in exercise of the powers conferred by the provision to section 4 of the Agricultural Pesticides Ordinance, 1971 ( II of 1971) the Federal Government is pleased to direct that the following further amendment shall be made in its Notification No. .S.R.O 46 (KE)/93, dated the 15th March, 1993.

2- In the aforesaid notification, in the table, in column (1), in sub-heading 'A' after entry 39, the following shall be added, namely :-

"40. Methyl Bromide 98per cent, 100 per cent.

41. Magnesium Phosphide 56 per cent plates; strips.

42. Deltamethrin 1.5 EC.

43. Permmethrin 25 EC. 0.5 per cent Powder; 0.5 per cent dust."

**ALLAH BAKSH MALIK.**
*Section Officer.*

**THE GAZETTE OF PAKISTAN**

**EXTRAORDINARY**

**PUBLISHED BY AUTHORITY**

**ISLAMABAD, MONDAY, JUNE 12, 2000**

## PART II

## Statutory Notifications (S.R.O.)

## Government of Pakistan.

## MINISTARY OF FOOD, AGRICULTURE AND LIVESTOCK

## NOTIFICATIONS

***Islamabad, the 12th June, 2000***

1- S.R.O 324 (I) /2000 in exercise of the powers conferred by the provision to section 4 of the Agricultural Pesticides Ordinance, 1971 ( II of 1971) the Federal Government is pleased to direct that the following further amendment shall be made in its Notification No. .S.R.O 46 (KE)/93, dated the 15th March, 1993.

2- In the aforesaid notification, in the table, in column (1), in sub-heading 'A' after entry 43, the following shall be added, namely :-

| | |
|---|---|
| 44 | Acetochlor 50 EC |
| 45 | Alachlor 48 EC |
| 46 | Metolachlor 50 WP |
| 47 | Diafenthiuron 50 SC |
| 48 | Hexythiazox 10 WP |
| 49 | Tetradifon 7.52 EC |
| 50 | Propergite 57 EC |
| 51 | Tridimefon 25 WP |
| 52 | Bentazone 48 SL |
| 53 | Diuron 80 WP |
| 54 | Metribuzin 70 WP |
| 55 | Amtryn + Atrazine 80WP, 50 FW |
| 56 | Carbaryl 20G, 85 SP, 10 D |
| 57 | Betacyfluthrin 2.5 EC |
| 58 | Fipronil 50 SC, 4 G |
| 59 | Trichlorfon 80SP, 50 SL, |

## 15.5 Product Registration Under Form 1

| Form - 1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
| 2 | Trichlorfon | Insect. | Dipterex | Tech. 98% (App-A), 50% SL, 80% SP, 2.5% G (w/w) (App-B,C,D) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Borers of almond and fruitflies of Mango. | 12.06.2003 | 30.06.2006 |
| 3 | Fenthion | Insect. | Lebaycid | Tech. (App.-A), 50% EC (App.-B), 1000 gm/l ULV (App.-C), 1200 g/lit. ULV (App.-D) 5% Granules (App.-E) & 10% Granules (App.-F) | Chemdyes Pakistan (Pvt) Ltd., Karachi. | Almond borer and mango fruitfly. | 01.08.1984 | 30.06.1987 |
| 4 | Azinphos methyl | Insect. | Gusathion-M | Tech. (App.-A) & 20% EC (App.-B) | Chemdyes Pakistan (Pvt) Ltd., Karachi. | Pink bollworm and spotted bollworms of cotton, codling moth, aphids, hairy caterpillar and shot-hole borers of Apple. | 31.07.1994 | 30.06.1997 |
| 5 | Fenitrothion | Insect. | Folithion | Tech. 95% (w/w) (App.-A), 50% EC (50% w/w) (App.-B) & 98% ULV (1000 g/l) (App.-C) | Chemdyes Pakistan (Pvt) Ltd., Karachi. | Sucking insects of Cotton; paddy stem borer; sugarcane pyrilla; mango hoppers and mealy bugs; citrus butterfly, blackfly & psylla. | 15.07.1991 | 30.06.1994 |
| 6 | Diazinon | Insect. | Basudin | Tech. (95% w/w), 60 EC (58.8% w/w) & 10% G (w/w) (Appendix-A, B, C & D) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Whiteflies and borers of sugarcane, borers of paddy and borers of maize. | 25.04.2003 | 30.06.2006 |
| 8 | Mono crotophos | Insect. | Nuvacron | 75% Tech. (w/w) (App.-A) & 40% SCW (400 g/l) (App.-B) | Ciba-Geigy (Pakistan), Karachi. | Control of pink bollworm, spotted bollworms, jassid,s whitefly and thrips of cotton okara jassids, onion thrips, potato jassids, whitefly, brinjal jassid and whtefly, maize shootfly and borer, rice white-backed plant hopper, borer and leaf folders. | 26.07.1997 | 30.06.2000 |
| 10 | Fenitrothion | Insect. | Sumithion | 95% Tech. (w/w) (App.-A), 98% ULV (w/w) (App.-B) & 50% EC (w/w) (App.-C) | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | Sucking insects of cotton, setm borer of paddy, pyrilla of sugarcane, hopper and mealy bus of mango, butterflies, citrus psylla and blackfly of citrus. | 02.08.1994 | 30.06.1997 |
| 11 | Malathion | Insect. | MLT | 57ec,95ulv,95-t | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | | | |
| 13 | Bromophos | Insect. | Nexion | 25% (w/w) EC (App.-A), 35% (w/w) ULV (App.-B), Technical (App.-C) | Jaffer Brothers (Pvt) Ltd., Karachi. | Almond, scale, cotton spotted bollworms, paddy stem borer, sugarcane borer, mango hoppers and mealy bugs, butterflies, psylla and blackfly of citrus. | 18.09.1984 | 30.06.1986 |

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| 14 | Dimethoate | Insect. | Roxion | 40 % EC (w/v) (App-A) & 65 ULV (w/v) (App -B) | Jaffer Brothers (Pvt) Ltd., Karachi. | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | 16.07.2001 | 30.06.2004 |
| 15 | Carbaryl | Insect. | Sevin | 10 G (w/w),10% D(w/w),85% SP(w/w),44% XLR & 99% Tech. (Appendix-A, B, C, D & E) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | i) 10 G, 10% D % 85 SP: Cotton Pink and spotted bollworms, Apple codling moth, aphids, hairy caterpillar, shoot hole borer, Maize borer and Tobacco cutworm, aphids and budworms.<br>(ii) 44% XLR: Cotton spotted bollworm, jassids, thrips, Tobacco budworm and Grape mealy bug. | 16.06.2003 | 30.06.2006 |
| 16 | Ethion | Acari | Ethion | Technical (App.-A) & 46.5% EC (w/v) (App.-B) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Cotton, Sugarcane, Apple and Almond mites. | 30.07.2003 | 30.06.2006 |
| 18 | Copper Oxichloride | Fung. | Cupravit | 50% WP (w/w) (App.-A) | AgrEvo Pakistan (Pvt.) Ltd., Karachi. | Foliar spray only. | 04.07.1997 | 30.06.2000 |
| 19 | Phosalone | Insect. | Zolone | 35% EC (34.3% w/v) (App.-A) & Tech. 96% (w/w) (App.-B) | Rhone Poulence (Pvt.) Ltd., Karachi. | Cotton thrips; Apple codling moth, hairy caterpillar, aphids and shot hole borers. | 10.08.1994 | 30.06.1997 |
| 20 | Benomyl | Fung. | Benlate | 50% WP (Appendix-A) | Du Pont Far East Inc., Karachi. | as a seed-dressing fungicides. | 16.04.1998 | 30.06.2000 |
| 21 | Diuron | Herb. | Karmex | 80% WP (w/w) (Appendix-A) | Du Pont Far East Inc., Karachi. | as foliar spray only. | 23.09.1997 | 30.06.2000 |
| 22 | Diazinon | Insect. | Diazinon | 95% Tech., 60% EC, 14% G, 10% G, 5% G (App.-A,B,C,D,E) | EPAIDCO (Pvt.) Ltd., Karachi. | Paddy stem borers, Sugarcane whiteflies, pyrilla and Maize borers. | 21.03.2003 | 30.06.2004 |
| 23 | Dichlorvos | Insect. | Nogos | 97% Tech. (w/w) (App.-A) & 50 EC (w/w) (App.-B) | Novartis (Pakistan) Ltd., Karachi. | Sucking insects of cotton; hopper and mealy bugs of Mango; butterflies, citrus psylla, blackfly of citrus and aphids of tobacco. | 23.02.1999 | 30.06.2000 |
| 24 | Vamidathion | Insect. | Kilval | 25ulv | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | Sucking insects and spotted bollworms of cotton; hairy catapillaw, shat hole, borers and codling moth of apple. | | |
| 25 | Coumatetralyl | Insect. | Racumin | 0.75% Tracing Powder (App.-A), 0.375% Ready made bait (App.-B), 0.8% Liquid (App.-C), 7.5% Pre-Mixture (App.-D), 8% pre-Solution (App.-E) | Chemdyes Pakistan (Pvt) Ltd., Karachi. | Rodent control only. | 24.05.1989 | 30.06.1991 |
| 26 | Propineb | Fung. | Antracol | 70 WP & 80% Tech. w/w) (App.-A, B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Foliar spray only. | 16.06.2003 | 30.06.2006 |

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| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
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| 27 | Oxydemeton methyl | Insect. | Metasystox-R | 25% EC (Appendix-A) | Bayer DAS (Pvt.) Ltd. 18 / III, Flench Street, Off Bleak House Road, Civil Lines, Karachi. | Sucking insects of cotton and scales of almond. | 09.06.20003 | 30.06.2006 |
| 28 | Propanil | Herb. | Surcopur | 360 EC (Appendix-A) | Bayer DAS (Pvt.) Ltd. 18 / III, Flench Street, Off Bleak House Road, Civil Lines, Karachi. | Weedicides only. | 02.06.2001 | 30.06.2003 |
| 29 | Dichlorvos | Insect. | Dadevap | 97% Tech. (App.-A) & 500 EC (50% w/w) (App.-B) | Chemdyes Pakistan (Pvt) Ltd., Karachi. | Sucking insects of Cotton; hoppers and mealy bugs of Mango; psyla and blackfly of Citrus and aphids of Tobacco. | 01.08.1994 | 30.06.1997 |
| 30 | Phenthoate | Insect. | Elsan | 50% EC (w/w) & 92% ULV (App.-A, B) | Nissan Chemicals Industries Ltd. Japan. | Paddy stem borers. | 19.03.2003 | 30.06.2004 |
| 31 | Copper Oxichloride | Fung. | Pol-Kupritox | 50% WP (w/w) | Sarhad Farm Services, Peshawar. | Foliar spray only. | 02.10.1997 | 30.06.2000 |
| 32 | Endosulfan | Insect. | Thiodan | i) 94% Tech. (App.-A), (ii) 35 EC (352 g/l) (App.-B), iii) 25 ULV (App.-C), 5 G (App.-D) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | **Thiodan 35 EC:** Approved for use against: **CROPS, PESTS, DOSES** Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre **Thiodan 25 ULV:** Jassids, Whitefly, Thrips, Spotted, Pink bollworms & Heliothis of Cotton (by air & ground); Pyrilla and whitefly of Sugarcane and red pumpkin beetles of vegetables (by ground). **Thiodan 5 G:** Stemborers of paddy. | 25.06.2003 | 30.06.2006 |
| 34 | Formothion | Insect. | Anthio | 25 EC (w/w) (App.-A) | FMC International Ltd., Lahore. | Sugarcane pyrilla, aphids and diamond back moth of oil-seeds. | 27.10.1993 | 30.06.1995 |
| 36 | Quinalphos | Insect. | Ekalux | 25% (w/w) EC (App.-A), 5% G (App.-B) & 70% (w/w) ZP (App.-C) | Sandoz (Pakistan) Ltd., Karachi. | Borers of sugarcane, mites of apple, aphids of tobacco, borers of maize, pink and spotted bollworms of cotton and stem borers of paddy. | 19.08.1993 | 30.06.1995 |
| 37 | Methyl Bromide | Fum. | Terr-o-gas | Terr-o-Gas 98% | Mehboob Ally & Co (Pvt.) Ltd., Karachi. | Fumigation of sotred agricultural products. | 24.08.1991 | 30.06.1994 |

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| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
|---|---|---|---|---|---|---|---|---|
| 39 | Dimethoate | Insect. | Perfexthion | 40 EC (37% w/w) (App.-A) & 95% Tech. (w/w) (App.-B) & 40 ULV (App.-C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | **a) Approved for use against:** Sugarcane pyrilla, oilseeds aphids, diamond back moths, cotton jassids and whiteflies. **b) Approved for use against:** Sugarcane pyrilla by aerial application only. | 30.07.2003 | 30.06.2006 |
| 40 | Tetrachlovinphos | Insect. | Gardona | Tech. (App.-A), 24% EC (w/v) (App.-B & 10% Granules (App.-C) | Pakistan Burmash Shell Ltd., Karachi. | Control of Cotton sucking pests; paddy stem borer; apple codling moth; apple hairy caterpillar; apple shot hole borer, maize borer and stored grain khapra. | 07.07.1985 | 30.06.1988 |
| 41 | Aluminium Phosphide | Fum. | Detia Gas | Tablets (Aluminium Phosphide) Min. 56% (w/w) (App.-A) | Alintco (Pvt) Ltd., Karachi. | Fumigation of food grains. | 06.08.1998 | 30.06.2001 |
| 43 | Chlorpyrifos | Insect. | Lorsban | Tech. (App.-A), 24%w/v EC & 10% w/w G (App - B & C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton -sucking insects & spotted bollworm; Paddy - stem borer and Maize - borer. | 28.02.2001 | 30.06.2003 |
| 45 | Monocrotophos | Insect. | Azodrin | Tech. (App.- A) & 40% (w/v) WSC (App.-B) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | 28.02.2001 | 30.06.2003 |
| 46 | Dicofol | Acari | Kelthane | 18.5% (w/w) EC (Appendix-A) | Baluchistan Zarai Markaz, Quetta. | Mites of Cotton, Sugarcane, Apple and Almonds. | 22.04.2002 | 30.06.2003 |
| 47 | Mancozeb | Fung. | Dithane | 80% WP (w/w) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Potato Early & Late blight @ 600g/acre. Vegetables & Cucurbits Downy mildew @ 800gm/acre. | 20.08.2003 | 30.06.2004 |
| 50 | Malathion | Insect. | Malathion | Tech. 96% ULV (App.-A), 57% EC (w/w) (App.-B) & 50 WDP (w/w) (App.-C) | Cyanamid Pakistan Ltd., Karachi. | Tormites, leaf hopper of paddy, hoppers and mealy bugs of mango, butterflies, citrus paddy and blakcfly of citrus and aphids of tobacco. | . | 30.06.1988 |
| 51 | Fentine Acetate + Maneb | Fung. | Brestan | 60% WP (60% w/w) (App-A) & 94% Tech. (w/w) (App.-B) | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | Fungal diseases as foliar spray. | 25.03.2000 | 30.06.2001 |

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| 53 | Dimethoate | Insect. | Rogor | 65% ulv (W/V) (APP.-a), 40% EC (App.-B) & 95% Tech. (App.-C) | GHR (Pvt) Ltd., Karachi. | Sugarcane Pyrilla, Oil-seeds aphids and Diamond back moth. | 14.07.1998 | 30.06.2001 |
| 54 | Phenthoate | Insect. | Cidial | 50 EC (w/w) (App.-A), 5 g (w/w) (App.-B) & 92 ULV (w/w) (App.C) & Tech. 92% (w/w) (App.-D) | GHR (Pvt) Ltd., Karachi. | Paddy stem borers only. | 10.07.1998 | 30.06.2001 |
| 56 | Carbufuran | Insect. | Furadan | 85%(w/w) Dustless base,10% G(w/w),3% G(w/w)(App-A,B,C) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Cotton pest Complex, Paddy Pest Complex, Oil Seed Pest Complex Sugarcane Borers, Maize Borers and Tobacco Cutworms. | 06.06.2001 | 30.06.2004 |
| 58 | Aldicarb | Insect. | Temik | 10 G (10% w/w) (App.-A) | Rhone Poulence (Pvt.) Ltd., Karachi. | Sucking pests of cotton; oilseeds, potato and tobacco for ground application. | 29.10.1992 | 30.06.1995 |
| 59 | Aldicarb | Insect. | Temik | 10G | FMC International Ltd., Lahore. | | | |
| 62 | Paraquat | Herb. | Gramoxone | 20% (P.dichloride 25.4%) or Paraquat ions 20% (App.A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Weedicides only. | 16.03.2002 | 30.06.2004 |
| 65 | Phorate | Insect. | Thimet | Tech. (App-A), 5% (w/w) G & 10% (w/w) G (App-B & C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton - sucking pests; Potato - sucking pest; Tobacco - sucking pests; Oilseed - sucking pests; Rice - stem borers, leaf-folder and Sugarcane - borers. | 24.01.2002 | 01.01.2004 |
| 71 | Chlorfenvinphos | Insect. | Birlane | 10g,24ec,90-t | Nichimen Corporation (Pvt) Ltd., Lahore. | | | |
| 72 | Methabenz Thiozuron | Herb. | Tribunil | 70% WP (w/w) (App.-A) & Tech. 95% (w/w) (App.-B) | Chemdyes Pakistan (Pvt) Ltd., Karachi. | Weeds in wheat. | 12.09.1993 | 30.06.1996 |
| 73 | Quinomethionate | Fung. | Morestan | 25% WP (w/w) (App.-A) & 70^ Premix (w/w) (App.-B) | AgrEvo Pakistan (Pvt.) Ltd., Karachi. | Control of alternaria blights of crucifers black rot and powdery mildew of peas and apple only. | 01.19.1996 | 30.06.1999 |
| 77 | Dimethatryn+ Piprophos | Herb. | Avirosan | 3.3 G (w/w) (Appendix-A) | Novartis (Pakistan) Ltd., Karachi. | Weeds in rice only. | 14.07.1999 | 30.06.2002 |
| 78 | Metiram | Fung. | Polyram Combi | Polyram 80% wettable powder. | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | For use against early blight of tomato and potato and downy and powdery mildew of cucurbits only. | 16.04.1976 | |
| 80 | Malathion | Insect. | Emmatos | 57% EC (App.-A) & 95% Tech. (ULV) Min. (App.-B) | GHR (Pvt) Ltd., Karachi. | Paddy leaf hoppers, mango hoppers and mealy bugs; citrus butterfly, psylla and blackfly and tobacco aphids. | 19.08.1999 | 30.06.2002 |
| 81 | polychlorinated petrolium | Insect. | Tenikil | 10% EC (Min. 60% w/w) (Appendix-A) | STEDEC Technology Commercialization of Pakistan, Lahore. | Sugarcane pyrilla and cotton sucking pests. | 11.11.2002 | 30.06.2005 |
| 82 | Mineral | Insect. | Albolineum | 80wsp | BASF Pakistan (Pvt) Ltd., Karachi. | | | |

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| 83 | Captan | Fung. | Captan | 50% (w/w) WP (Appendix-A) | ICI Pakistan (Pvt) Ltd., Lahore. | Approved for use as a general purpose seed treating agent and as a spray fugicide for the control of vegetables, fruits and other crops diseases. | 12.04.1999 | 30.06.2002 |
| 84 | Sodium cynaide | Insect. | Cymag | 40wp | ICI Pakistan (Pvt) Ltd., Lahore. | | | |
| 85 | Chlorinated wax | Insect. | Ostico | | ICI Pakistan (Pvt) Ltd., Lahore. | | | |
| 86 | Ametryn+Atrazin | Herb. | Gesapax Combi | 80% WP (w/w) (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Sugarcane. | 22.05.2003 | 30.06.2006 |
| 87 | Methidathion | Insect. | Supracide | 40 EC (w/w) (App-A) & Tech. 91% min. (w/w) (App-B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Leaf roller, jassid & whitefly on cotton, aphids of mustard, tobacco & barley; hoppers & scales of mango, leaf roller of till, cutworm of sugar beet, black bug of sugarcane, coding moth & hairy caterpiller of fruit trees and citrus psylla. | 10.07.2002 | 30.06.2005 |
| 90 | Methyl Bromide | Fum. | Tarabol | Methyl bromide 98% + Chloropicrin 2% w/w (App.-A) | AG Services & Suppliespvt Ltd., Karachi. | Approved for fumigation of stored Agricultural products. | 16.08.1987 | 30.06.1990 |
| 92 | Zinc Phosphide | Insect. | Ratokill | 80% Powder (Appendix- A) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Rodent control only. | 16.06.2003 | 30.06.2006 |
| 94 | Methyl Bromide | Fum. | Bromathane | Ligquid gas | Albert Chemical (Pvt) Ltd., Karachi. | | | |
| 95 | Propanil | Herb. | Stam F-34 | 35% EC (w/w) (App.-A) | Rhom & Haas Inc., Karachi. | Against Weeds only. | 06.06.1994 | 30.06.1997 |
| 96 | Carboxin+Thiram | Fung. | Vitavax-2000 | 37.5+37.5 (w/w) (App.-A) | Agricides (Pvt) Ltd., Karachi. | Approved for treatment of wheat, Maize, Oilseeds and Cotton Seeds. | 03.07.1994 | 30.06.1997 |
| 97 | Dicamba | Herb. | Benvel | 40.6% Solution (App.-A) | Sandoz (Pakistan) Ltd., Karachi. | Weeds in wheat, maize and sugarcane. | 07.11.1991 | 30.06.1994 |
| 99 | Fenitrothion | Insect. | Novathion | 98% (w/w) ULV (Appendix - A) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | otton pest complex, paddy stemborers, sugarcane pyrilla, mango hoppers and mealy bugs, butterfly, psylla and blackfly of citrus. | 08.12.2001 | 30.06.2004 |
| 100 | Fenitrothion | Insect. | Agrothion | 50% EC (App.-A) & 80% Tech. (App.-B) | ICI Pakistan (Pvt) Ltd., Lahore. | Paddy borers. | 06.03.1994 | 30.06.1994 |
| 102 | 2,4-Dsodium Salt | Herb. | Pol Pielik | 2, 4-D Sodium Salt 92% (App.-A) | Sarhad Farm Services, Peshawar. | Weed control in wheat. | 19.07.2000 | 30.06.2003 |
| 103 | Cyanofenphos | Insect. | Suricide | 25% Emulsion Concentrate | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | for the control of cotton pest complex only. | | 26.09.1997 |
| 104 | Dicofol | Insect. | Kelthane | 18.5Ec | Rhom & Haas Inc., Karachi. | | | |
| 105 | Methyl Bromide | Fum. | Siabron | Ligquid gas | Progressive Association Corp. (Pvt) Ltd., Karachi. | Fumigation of sotred grain pests and general fumigations. | 28.10.1992 | 30.06.1995 |

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| 106 | Acephate | Insec. | Orthane | 95% Tech. (App-A) 40% EC (w/v), 75% SP (w/w) (App-B,C) | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Army worm and sucking pests complex of cotton. | 26.06.2001 | 30.06.2004 |
| 107 | Zinc Phosphide | Insect. | Zinc Phosphide | 80% (w/w) | Agro Chemicals Ltd., Karahci. | Rodent contorl only. | 21.05.1975 | |
| 108 | Thiabendazole | Fung. | Tecto | 40% Flowable (41.8% w/w) (App.-A) & 60% WDP (w/w) (App.-B) | Merck Sharp & Dhoma of Pakistan Ltd., Karachi. | Harvest treatment of Bannana, citrus and sugarbeet. | 22.02.1986 | 19.02.1987 |
| 109 | Chlorpyrifos | Insect. | Lorsban | 40% EC (w/v) (App. -A), & 97% (w/w) Tech. (App. -B) | Bayer DAS (Pvt.) Ltd. 18 / III, Flench Street, Off Bleak House Road, Civil Lines, Karachi. | Pest complex of Cotton, Sugarcane borers & bugs, Maize borers, Orchards codling moth and vegetables. | 07.06.2002 | 30.06.2005 |
| 109-b | Tetradifon | Acari | Tedion V-18 | 7.52 EC (75.2% s/l) (Appendix-A) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Mites of Cotton, Sugarcane and Orchards. | 25.06.2003 | 30.06.2005 |
| 110 | Aluminium Phosphide | Fum. | Detia gas | Tablets. | Biochem Ltd. Karachi. | Fumigant in food grain in godowns and shipholds. | 29.07.1999 | 30.06.2002 |
| 112 | Cuprous oxide | Fung. | Ferenox | 50% (w/w) (App.-A) | ICI Pakistan (Pvt) Ltd., Lahore. | Approved for control of early and late blight of potato and fungal disease of citrus. | 04.08.1996 | 30.06.1999 |
| 114 | Carbufuran | Insect. | Curaterr | Tech. 75% (w/w) (Appendix-A), 3% G (Appendix-B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Borers of Paddy, Maize and Sugarcane. | 29.04.2003 | 30.06.2005 |
| 114-a | Endosulfan | Insect. | Thiodan | 5% Granules (App.-A) | Hoechst Pakistan Ltd., Karaci. | Stem borers of paddy. | 08.08.1994 | 30.06.1997 |
| 115 | Triazophos | Insect. | Hostathion | 40% EC (40% w/w) (App.-A) & 70% Tech. Conc. (App.-B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton insect pest complex, heliothis eggs & whiteflies nymph, rice stem borers, maize shoot fly and borers. | 05.02.2003 | 30.06.2005 |
| 117 | Zinc Phosphide | Insect. | Zinc Phosphide | Tech. 90 - 95% (App.-A) | International Enterprises (Pvt) Ltd., Karachi. | Rodent control only. | 11.07.1984 | 30.06.1987 |
| 118 | Dimethoate | Insect. | Cygon | Tech. (App.- A) & 200 (w/w) E & 400 (w/w) E (App.-B & C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | 16.07.2002 | 30.06.2005 |
| 119 | Zinc Phosphide | Insect. | Zinc Phosphide | 80% (App.-A) | Agricides (Pvt) Ltd., Karachi. | Rodent control only. | 11.07.1984 | 30.06.1987 |

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| **Reg. No.** | **Product** | | | **Formulation** | **Name of Applicant** | **Uses** | **Registed Date** | **Receiving Date** |
| 120 | Aluminium Phosphide | Fum. | Delicia Gastoxin | Tablets 56.8% AIP (App.-A) | Dawood Corporation, Karachi. | Stored grain insects. | 15.08.1989 | 15.08.1989 |
| 122 | Malathion | Insect. | Malathion | 57% EC (w/w) (App.-A) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Soil termites; leaf hoppers of paddy; hoppers & mealy bugs of mango; butterflies; psylla & blackfly of citrus and aphids of tobacco. | | 30.06.1985 |
| 123 | Diazinon | Insect. | Dizinon | 10% G | Agro Chemicals Ltd., Karahci. | Labels, copies of which are to used in connection with the said brand of pesticide. | | 19.08.1979 |
| 125 | Mephosfolan | Insect. | Cytrolane | Tech. & 3% Granules (App.-A & B) | Cynamid (Pak) Ltd.,Karachi. | Maize and paddy borers. | 02.07.1985 | 30.06.1988 |
| 126 | Butachlor | Herb. | Machete | 5% G (w/w), 60% EC (w/v) & 90% Tech. (w/w) (App.-A,B&C) | Monsanto Pakistan AgriTech (Pvt.) Ltd. 6-Old, Muslim Town, Lahore. | Weed control in paddy. | 22.05.2003 | 30.06.2006 |
| 127 | Methamidophos | Insect. | Tamaron | 600 SL (50% w/w) (App.A) & 70 - 73%(w/w) Tech.(App.B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | 16.06.2003 | 30.06.2006 |
| 128 | Fenvalerate | Insect. | Sumicidin | 20% E (w/w) (App.-A) & 95% Tech. Min. (App.-B) | Granulars (Pvt) Ltd., Karachi. | Cotton insect pest complex. | 25.07.1997 | 30.06.2000 |
| 129 | Triforine | Fung. | Saprol | 19% EC (w/v) (Appendix-A) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Powdery mildew of peas and cucurbits and leaf spot of ground nuts. | 09.07.2003 | 30.06.2006 |
| 130 | Amitraz | Insect. | Ovasyn | 20% EC (w/v) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton pest complex & heliothis eggs; Apples codling moth; Tomato borers; Sugarcane borers and mites. | 16.06.2003 | 30.06.2006 |
| 131 | Methomyl | Insect. | Lannate | 90% WSP (Appendix-A) | Du Pont Far East Inc., Karachi. | Cotton insect pest complex and tobacco aphids, bud moth and root knot nematodes. | 23.09.1997 | 30.06.2000 |
| 132 | Permethrin | Insect. | Ambush | 25ec | ICI Pakistan (Pvt) Ltd., Lahore. | | | |
| 133 | Deltamethrin | Insect. | Decis | i) 2.5% EC (2.8% w/w), (ii) 0.5 ULV (0.58% w/w) (App.-A & B) iii) 1.25 ULV (12.5 g/l), (iv) 98% (w/w) Tech. (App.-C & D) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Decis 2.5 EC = Cotton Pink, Spotted and Heliothis bollworms, Army Worms, and thrips, Whitefly, Aphids and Jassids and Stored grain pests, Mango hoppers and Rice leaf folder.<br>Decis 0.5 ULV= Cotton Pink, Spotted and Heliothis bollworms, Army Worms, and thrips, Whitefly, Aphids and Jassids, Vegetables Heliothis, Fruit borer, Jassids & Thrips.<br>Decis 1.25 ULV = Locust only. | 05.08.2003 | 30.06.2006 |

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| 134 | Chlorpyrifos | Insect. | Lorsban | 5% G (w/w) (App-A) (52.5% w/w)Tech. (App-B) | Bayer DAS (Pvt.) Ltd. 18 / III, Flench Street, Off Bleak House Road, Civil Lines, Karachi. | Paddy, Sugarcane & Maize borers. | 11.06.2003 | 30.06.2006 |
| 135 | Benthiocarb | Herb. | Saturn | 10% G (w/w) (App.-A) & 93% Tech. (w/w) (App.-B) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Weed Control in Paddy. | 05.08.2003 | 30.06.2006 |
| 136 | Thiophanate Methyl | Fung. | Topsin-M | 40% ULV (App-A) & 70% WP (App-B) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Seed dressing and treatment of rice blast and powdery mildew of grapes. | 06.08.2003 | 30.06.2006 |
| 137 | Isothioate | Insect. | Hosdan | 4g | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | | | |
| 138 | Malathion | Insect. | Fyfanon | 57% EC (w/w) (Appendix-A) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Soil termites, paddy leaf hoppers, mango hoppers and mealy bugs, citrus butterflies, citrus psylla, backfly and aphids. | 16.08.2003 | 30.06.2006 |
| 139 | Cartap Hydrochloride | Insect. | Padan | 4% G (w/w) (App.-A) & 97% (w/w) Tech. (App.-B) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | rice borers and leaf folders. | 01.01.2003 | 30.06.2005 |
| 140 | Fenitrothion | Insect. | Agrothion | 98ulv | ICI Pakistan (Pvt) Ltd., Lahore. | | | |
| 141 | Diazinon | Insect. | Basudin | 90% SCO (Min. 90% Pure) Ltd, Switzerland. | Ciba-Geigy (Pakistan), Karachi. | Paddy borers, sugarcane pyrilla and whitefly. | 01.09.1994 | 30.06.1997 |
| 142 | Phosmamidon | Insect. | Dimecron | 50% (w/v) SCW (Appendix-A) | Novartis (Pakistan) Ltd., Karachi. | Cotton sucking pests, paddy borer, sugarcane pyrilla, tobacco aphids and apple codling moth. | 11.02.1999 | 30.06.2000 |
| 144 | Methyl Bromide | Fum. | Methybron | Methyl Bromide 98% + Chloropicrin 2% w/w (App.-A) | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | Fumigation of stored agricultural products. | 20.02.1995 | 30.06.1997 |
| 146 | Trifluralin+2,4-D | Herb. | Treflan-R | 10% sprealable, 20% EC & 4.15% G | Elanco International | Weed contorl in rice. | | |
| 147 | Chlorotoluron+ MCPA | Herb. | Dicuron | 60% WP (w/w) (Appendix-A) | Novartis (Pakistan) Ltd., Karachi. | Control in wheat. Not to be used wheat variety Tarnab-73. | 18.01.1999 | 30.06.2001 |
| 149 | Dibom | Insect. | Nalad | Dibrom 8 Emulsive (58% w/w) (App.-A) | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Insect pest of vegetables and fruits. | 09.12.1984 | 30.06.1986 |
| 150 | Diazinon | Insect. | Basudin | 50% G (w/w) (Appendix-A) | Novartis (Pakistan) Ltd., Karachi. | sugarcane whitefly and befores; Paddy borers and Maize borers. | 20.04.1999 | 30.06.2001 |

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| 152 | Isoxathion | Insect. | Karphos | 50% EC (w/w) (App.-A) | SC Dyestuffs & Chemcials (Pvt.) Ltd., Karachi. | Sugarcane pyrilla, whiteflies and borers, Apple codling moth, tabacco cutworm, potato leaf hopper, soyabean whitefly & cotton sucking pests. | 03.08.1998 | 30.06.2001 |
| 153 | Thiofanox | Insect. | Dacamox | 5% G (w/w) (Appendix-A) | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | Soyabean whitefly, Tobacco aphid, potato cutworm, whitefly and aphid, brassica aphid and cotton insect pest complex. | 25.03.2000 | 30.06.2001 |
| 154 | Bacillus thuringiensis | Insec. | Bactospein | 16000 I.U ak/mg wp (App.-A), 500 I.U ak/mg. Granules (App.-B) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Maize stem borers, tobacco bud moth, sarsoon butterfly, diamond back moth, soyabean hairy catterpillar and jute hary caterpillar. | 15.08.1989 | 30.06.1992 |
| 155 | Bacillus thuringiensis | Insec. | Thuricides | Weetable powder | Sandoz (Pakistan) Ltd., Karachi. | Maize stem borer, tobacco bud moth, sarsoon butter fly, diamond back moth, soyabean hairy caterpillar and jute hairy caterpillar. | 06.01.1980 | 29.12.1981 |
| 156 | Permethrin | Insect. | Talcard | 25% (W/V) EC (262 g/kg) (Appendix - A) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton - Pest Complex. | 28.02.2001 | 30.06.2004 |
| 157 | Cypermethrin | Insect. | Ripcord | 10% EC (w/v) & Tech. Conc. 500 g/kg. & 92% (App.A,B,C&D) | Swat Agro Trade 181st Floor Cantt. Commercial Plaza, Fakhr-e-Alam Road, Peshawar Cantt. | Cotton - pink bollworm, spotted bollworm; Cauliflower - caterpillar; Tobacco - cutworm, budworm & Gram - pod borer. | 28.06.2003 | 30.06.2006 |
| 157 | Diazinon | Insect. | Dizinon | 5g | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | | | |
| 158 | Fenitrothion | Insect. | Novathion | 50% (w/w) EC (Appendix-A) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Potato leaf hopper, jassids and thrips & Soyabean whitefly. | 08.12.2001 | 30.06.2004 |
| 159 | Triazophos | Insect. | Hostathion | 25 ULV (254% w/w) (Appendix-A) | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | Cotton pest complex, Maize aphids and vegtetable pests (leaf hopper of potato, okra, brinjal, beet and tomato, turnip aphids, turnip worm and onion thrips). | 25.03.200 | 30.06.2001 |
| 160 | Chlorpyrifos | Insect. | Lorsban | 95% ULV/Technical (Appendix-A) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Sugarcane pyrilla by aerial spraying only. | 08.12.2001 | 30.06.2002 |
| 161 | Bromoxinyl+ MCPA | Herb. | Buctril-M | 40% EC (w/v) & Tech. Bromox. Octa. 92% Min., MCPA 93.5% (Appendix-A, B & C) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Wheat: Chenopodium album, Fumaria Spp. Asphodelus tenuifolious, Euphorbia beliossopia, Medicago spp., Convolvulus arvensis and Rumex spp. | 05.03.2003 | 30.06.2004 |

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| 162 | Pendimethalin | Herb. | Stomp | 330 g/l E (Appendix- A) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Approved for used as pre and post - emergance in Wheat, Maize and Cotton against broad-leaved weeds & grassess exscept Cyperus spp., Cyanodon dactylon & Solanum nigrum. Also approved for broat-leaved weedsin Potatos, Peas, Tobacco suckers. Weeds in Garlic, Onion, Cauliflower, Sunflowers and Carrots. | 30.07.2003 | 30.06.2006 |
| 163 | Metolachlor + Atrazin | Herb. | Primextra | 500 F.W.(Metolachlor 27% w/w + Atrazine 18% w/w)(App-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Boerhaavia repens; cyperus spp; convolvulus spp; euphorbia prostrata and digitaria arvensis in maize. | 22.08.2001 | 30.06.2004 |
| 164 | Copper Oxichloride | Fung. | Cobox | 50% (w/w) WP (Appendix-A) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Foliar spray only. | 12.09.2001 | 30.06.2004 |
| 165 | Methyl Bromide | Fum. | Pestmaster | 98% Plus Chloropicrin 2% | Karachi Termite Control Company, Karachi. | Recommended for control of stored grain pests and general fumigation. | 18.01.1981 | |
| 166 | Primicarb | Insect. | Pirimor | 50% DP (Appendix-A) | ICI Pakistan Ltd., Karachi. | Aphicide only. | 06.03.1994 | 30.06.1995 |
| 167 | Primiphos Methyl | Insect. | Actellic | 50% EC (48.5% w/w) (App.-A) & 94% (w/w) Tech. (App.-B) | ICI Pakistan (Pvt) Ltd., Lahore. | As grain protectant and for use against sucking pest of cotton. | 30.06.1998 | 30.06.2001 |
| 168 | Pyridaphenthion | Insect. | Ofunack | 40% EC (App.-A) | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | Sucking insect pest complex of cotton crop. | 09.01.1995 | 30.06.1995 |
| 169 | Endosulfan | Insect. | Thiodan | 20 ULV (Appendix-A) | Hoechst Pakistan Ltd., Karaci. | bollworms, thrips, whitefly jassid of Cotton (by air and ground) and pyrilla and sugarcane whitefly and red pumpkin beetle of vegetables (by ground). | 03.08.1995 | 30.06.1995 |
| 170 | Deltamethrin | Insect. | Decis | 0.5ulv | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | | | |
| 171 | Quinalphos | Insect. | Ekalux | 30 ULV (30% w/w) (App.-A) | Sandoz (Pakistan) Ltd., Karachi. | Insect Pest Complex of Cotton. | 22.07.1992 | 30.06.1995 |
| 172 | Captan | Fung. | Orthocide | 75SP | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | | | |
| 173 | Mineral | | Winter Oil | 7% (w/w) EC (App.-A) | ICI Pakistan (Pvt) Ltd., Lahore. | Scales of Almond. | 15.05.1986 | 30.06.1989 |
| 174 | Copper Oxinate | Fung. | Quinolate | 15 WP | Agro Chemicals Ltd., Karahci. | bunt diseas of wheat. | | 30.06.1983 |
| 175 | Fthalide | Fung. | Rabcide | 30% (w/w) WP (Appendix-A) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Paddy blast. | 13.06.2002 | 30.06.2004 |

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| 176 | MIPC | Insect. | Mipciin | 50% (w/w) WP (Appendix- A) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Paddy white-backed plant hopper,cotton pest complex, maize borer, brinjal stem borer, grape leaf hopper, cabbage butterfly, tomato fruitworm and citrus psylla. | 02.01.2002 | 30.06.2004 |
| 177 | Dichlorvos | Insect. | Phosvit | 50 EC (App.-A) & 98.5% Tech. (App.-B) | Nichimen Corporation (Pvt) Ltd., Lahore. | Apple codling moth. | 23.07.1996 | 30.06.1999 |
| 178 | Formothion | Insect. | Anthio | 35% ULV (App.-A) & ZP 70 Tech. (App.-B) | Sandoz (Pakistan) Ltd., Karachi. | Sucking insect pest complex of cotton crops by aerial aplication only. | 25.07.1992 | 30.06.1995 |
| 179 | Aluminium Phosphide | Fum. | Celphos | Tablets. | Vinox Trading Corp., Karachi. | | | |
| 180 | Carbaryl | Insect. | Sevin | 10% G (App.-A), 10% D (w/w) (App.B), 85% SP (w/w) (App.C), 44% XLR (App.D) & 99% Tech. (App.E) | Rhone Poulence (Pvt.) Ltd., Karachi. | 10 G, 10 D & 85 SP: Approved for use against Cotton pink & spotted bollworms, apple codling moth, aphids, hairy caterpillar, shot hole borer maixe borer and tobacco cutworm, aphids and budworms.<br>44% XLR: Approved for use against cotton spotted bollworms, jassids, thrips, tobacco budworm and Grape mealy bugs. | 04.07.1997 | 30.06.2000 |
| 184 | Triona Oil Emulsion | Insect. | Triona Oil Emulsion | Stock Emulsion (Refined Mineral Oil 80 Pct Min. (App.-A) | Shell Paksitan Ltd., Karachi. | Scales on citrus, olive and top fruits. | 25.11.1993 | 30.06.19996 |
| 185 | Methyl Bromide | Fum. | Methyl Bromide | 100% (App.-A) & 98% (App.-B) | Paradise Impex Corporation, Karachi. | Fumigation of stored agriculture products. | 11.04.1994 | 30.06.1996 |
| 186 | Cypermethrin | Insect. | Cymbush | 10% EC (w/w) (App-A) Tech. 90% (w/w) Min. (App-B) | Syngenta Pakistan Ltd.<br>S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton - pink & spotted bollworms. | 10.06.2002 | 30.06.2005 |
| 188 | Permethrin | Insect. | Pounce | 3.2 EC (38.4% w/w) (App.-A) | FMC United (Pvt) Ltd.<br>61-A, Main Gulberg, Lahore. | Cotton - Pest Complex. | 27.06.2002 | 30.06.2005 |
| 189 | Permethrin | Insect. | Permasect | 25% EC (Appendix-A) | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Cotton bollworms. | 22.08.2002 | 30.06.2005 |
| 190 | Cypermethrin+ Profenofos | Insect. | Politrin-C | 440 EC (w/v) & Tech. Cypermethrin (89-95%), Profenofos (89-95%) (App-A, B & C) | Syngenta Pakistan Ltd.<br>S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton bollworms jassids, whitefly, thrips and mites. | 15.06.2002 | 30.06.2005 |
| 191 | Profenofos | Insect. | Curacron | 500 EC (w/v) (Appendix-A) | Syngenta Pakistan Ltd.<br>S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton bollworms, whitefly, thrips, jassids and mites, potato jassids, chili bud mites and cotton heliothis eggs. | 22.08.2001 | 30.06.2002 |

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| 192 | Methamidophos | Insect. | Monitor | 60 SL (w/v) (Appendix-A) & 73% Tech. (w/w) (Appendix-B) | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | 22.07.2002 | 30.06.2005 |
| 193 | Malathion | Insect. | Fyfanon | 95% ULV/Technical (Appendix-A) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Sugarcane pyrilla by aerial spraying only. | 22.07.2002 | 30.06.2005 |
| 194 | Dichlorvos | Insect. | DDVT | 50ec,90-t | Jaffer Brothers (Pvt) Ltd., Karachi. | | | |
| 195 | Etrimfos | Insect. | Ekamet | 50% EC (Appendix-A) | Sandoz (Pakistan) Ltd., Karachi. | Almond scales, tomato fruit borer, melon whitefly, soyabean whitefly, brinjal fruit borer, cotton jasssids, cotton whitefly, cotton thrips & cotton spotted bollworms. | 07.12.1987 | 30.06.1990 |
| 196 | Thiocyclam+ hydrogenoxalate | Insect. | Evisect | 5g | Novartis (Pakistan) Ltd., Karachi. | | | |
| 201 | Kasugamycin | Fung. | Kasumen | 2% (Appendix-A) | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | Rice blast only. | 29.07.1999 | 30.06.2002 |
| 202 | Chlorothalonil | Fung. | Daconil | W-75 (Appendix-A) | Nichimen Corporation (Pvt) Ltd., Lahore. | Rice blast, maize leaf blight downy mildew of musk melon and brown rust of wheat. | 08.07.1999 | 30.06.2002 |
| 203 | 2,4-D Butyl Ester | Herb. | Estran | 76e | Dow Elanco Ltd., Karachi. | | | |
| 204 | 2,4-D Dimethyl Amine salt | Herb. | DMA-6 | 69.50% w/w Liquid (App.-A) | Dayer DAS (Pvt.) Ltd. 18/III, Flench Street, Off Bleak, House Road, Civil Lines, Karachi. | Broad broad leaved weeds in rice. (All import DMA-6 should be effected after cotton season and tranporatation should be made in closed container to be opened in NWFP). | 18.03.1998 | 30.06.1999 |
| 205 | Zinc Phosphide | Insect. | Ratol | 80% (w/w) Min. (Appendix-A) | Arrow Trading Co. (Pvt) Ltd., Karachi. | Rodent control only. | 24.08.1991 | 30.06.1997 |
| 205 | Dicamba+MCPA | Herb. | Benvel-M | 1.25+2.50 | Novartis (Pakistan) Ltd., Karachi. | | | |
| 207 | Cypermethrin | Insect. | Arrivo | 10 EC (10.9 %w/w) (App-A) Tech.(Min.94% w/w) (App-B) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Cotton - pink & spotted bollworms. | 06.06.2001 | 30.06.2004 |
| 210 | Chlorpyrifos methyl | Insect. | Reldan | 25% (w/w) EC (App.-A), Reldan-F Tech. 94% Min. (App.-B) & Reldan-6 Tech. 60.6% Min. (App.-C) | D. E. United (Pvt.) Ltd., Karachi. | Stored grain pests. | 31.08.1999 | 30.06.2001 |
| 211 | Pyridaphenthion | Insect. | Ofunack | 2% Dust (w/w) (App.-A) | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | Paddy plant hopper; brinjal borers and tobacco budworms. | 30.05.1998 | 30.06.2001 |

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| 213 | Isoproturon | Herb. | Arelon | 75% WP (w/w) & 97% Tech. Min. (Appendix-A, B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Weeds in Wheat. | 05.03.2003 | 30.06.2004 |
| 214 | Metoxuron | Herb. | Desanex | 80% (w/w) WP (App.-A) | Sandoz (Pakistan) Ltd., Karachi. | Weeds in wheat | 25.07.1992 | 30.06.1995 |
| 215 | Pyrazophos | Fung. | Afugan | 30% EC (w/w) & 92% Tech. (App.-A, b) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Powdery mildew of musk melon peas, ber and apples. | 05.03.2003 | 30.06.2005 |
| 216 | Triadimefon | Fung. | Bayleton | 25% WP (w/w) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Approved for use against wheat leaf and stripe rusts powdery mildew of peas. | 29.04.2003 | 30.06.2004 |
| 217 | Brodifacoum | Insect. | Klerat | 0.1% Power (w/w) (App.-A) & Wax Block (App.-B) | ICI Pakistan (Pvt) Ltd., Lahore. | Rodent as 0.005% bait. | 30.06.1998 | 30.06.2001 |
| 219 | Fenpropethrin | Insect. | Danitol | 10% EC (w/v) & Tech. 92% (App.A,B) | Granulars (Pvt) Ltd., Karachi. | Cotton jassids, whiteflies and bollworms. | 30.05.1998 | 30.06.2001 |
| 220 | Fluvalinate | Insect. | Mavrik | 2 EC (25% w/w) (App.-A) & Fluvalinate Tech. (App.-B) | Sandoz (Pakistan) Ltd., Karachi. | Spotted bollworms on cotton jassids and thrips. | 23.07.1992 | 30.06.1995 |
| 222 | M.O | Herb. | M.O | 9-g | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | | | |
| 223 | Aluminium Phosphide | Fum. | Quikphos | Tablets. | Arrow Trading Co. (Pvt) Ltd., Karachi. | | | |
| 224 | Aldicarb | Insect. | Temik | 15% G (w/w) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton jassids & thrips; Potato aphids, Tobacco aphids, Turnip aphids and Citrus nematodes | 05.03.2003 | 30.06.2004 |
| 225 | Triadimenol | Fung. | Bayton | 10% DS (w/w) (App-A), Technical 92.5% W/W (App-B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Loose sumt (Ustilago tritici) | 29.04.2003 | 30.06.2004 |
| 226 | Cypermethrin+Profenofos | Insect. | Polytrin-C | 220 U.L.V. (Profenofos 200 g/l + Cypermethrin 20 g/l) (App-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton pest complex including mites, grant pod borer. | 21.08.2001 | 30.06.2004 |
| 227 | Methcrifos | Insect. | Damfin | 950 EC (950 g/l) (w/v) (App.-A) | Novartis (Pakistan) Ltd., Karachi. | As grain protectant in stored rice rice and wheat. | 08.02.1999 | 30.06.2001 |
| 228-a | Methyl Bromide | Fum. | Bromo-o-Gas | 98% Methyl bromide + 2% Chloropicrin (Appendix-A) | Arrow Trading Co. (Pvt) Ltd., Karachi. | Approved for fumigation of stored Agricultural products. | 17.06.1999 | 30.06.2001 |
| 228 | Cypermethrin | Insect. | Nurelle | 20%EC&Tech.Nur-XM(50-52%),Nur-F(90-92%)(App-A,B,C) | Bayer DAS (Pvt.) Ltd. 18 / III, Flench Street, Off Bleak House Road, Civil Lines, Karachi. | Bollworms of Cotton. | 05.09.2002 | 30.06.2005 |

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| 230 | Endosulfan | Insect. | Sialon | 35ec,93-t | Edgro (Pvt.) Ltd.<br>Marine Trade Centre, BC - 3,<br>Kehkashan, Block - 9, Clifton,<br>Karachi - 75600. | | | |
| 231 | Monocrotophos | Insect. | Apadrin | 40% WSC (w/v) (App.-A) & 75.2% Tech (App.-B) | Rhone Poulence (Pvt.) Ltd.,<br>Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | 30.06.1999 | 30.06.2002 |
| 233 | Copper Compond+Manco zeb | Fung. | Tri miltox Forte | Mancozeb 20% (w/w) + Copper 21% (w/w) (Appendix-A) | Syngenta Pakistan Ltd.<br>S - 50, S.I.T.E., Hawkes Bay Road,<br>Karachi. | Tomato early blight, cucurbit downy mildew and mango anthracnose. | 14.06.2002 | 30.06.2005 |
| 234 | Carbaryl | Insect. | Sevin | 44-x | Aventis CropScience Pakistan<br>(Pvt.) Ltd. Korangi Industrial Area,<br>Karachi-74900 | | | |
| 235 | Profenofos | Insect. | Curacron | 250 ULV (250 g/l. w/v)<br>(Appendix-A) | Syngenta Pakistan Ltd.<br>S - 50, S.I.T.E., Hawkes Bay Road,<br>Karachi. | Cotton bollworms, Jassids and whitefly. | 15.06.2002 | 30.06.2005 |
| 236 | Methomyl | Insect. | Methavin | 90 SP (90% w/w) (App.-A) | Aventis CropScience Pakistan<br>(Pvt.) Ltd.<br>Korangi Industrial Area, Karachi-<br>74900 | Cotton bollworm, jassids, thrips, whitefly & armyworm; cabbageworm; and peach black aphids. | 16.03.2000 | 30.06.2002 |
| 237 | Carbendazim | Fung. | Derosal | 60% (w/w) WP & 99% Tech. (w/w) Min., 500 SC & 80 WDG (Appendix-A, B, C & D) | Bayer CropScience (Pvt.) Ltd.<br>Plot No. 23, Sector No. 22, Korangi<br>Industrial Area, Karachi-74900 | **60% WP** : Approved for use against Grapes powdery mildew and Sugarbeet leaf spot.<br>**500 SC** : Approved for use against Mango anthracnose and Apple powdery mildew.<br>**80 WDG** : Approved for use against Mango powdery mildew. | 05.03.2003 | 30.06.2005 |
| 238 | Benthiocarb | Herb. | Saturn | 50Ec | Nichimen Corporation (Pvt) Ltd.,<br>Lahore. | | | |

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|---|---|---|---|---|---|---|---|---|
| 239 | Thiodicarb | Insect. | Larvin | 80 DF (w/w) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton pink and spotted bollworms; eggs and larvae of Heliothis and army worm on cotton and burseem; cabbage worm, and tabacco budworm and cotton jassids, thrips and whitefly. | 05.03.2003 | 30.06.2005 |
| 241 | Copper Oxichloride | Fung. | Vitigran Blue | 35% WP (w/w) (App.-A) & 59.5% Tech. (App.-b) | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight, 1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | 08.04.2000 | 30.06.2002 |
| 242 | Ametryn+Atrazin | | Gesapax Combi 500 FW | Ametryn 245 g/l + Atrazine 235 g/l (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Weeds in Sugarcane. | 14.06.2002 | 30.06.2005 |
| 243 | Flucythrinate | Insect. | Pay-Off | 100 g/l EC (App.-A) & Tech. 78% (w/w) Min (App. B) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton - bollworms. | 28.02.2001 | 30.06.2003 |
| 244 | Cypermethrin | | Cymbush | 3 EC (30 g/l) (App.-A) | ICI Pakistan (Pvt) Ltd., Lahore. | Cotton bollworms. | 29.07.1997 | 30.06.2000 |
| 245 | Buprimate | Fung. | Nimrod | 25% EC (w/v) (App.-A) & Tech. 90% (w/w) (App.-B) | ICI Pakistan (Pvt) Ltd., Lahore. | Powdery mildew of gourd. | 29.07.1997 | 30.06.2000 |
| 246 | Alphamethrin | Insect. | Insect. | 92-96-t,10ec | BASF Pakistan (Pvt) Ltd., Karachi. | | | |
| 247 | Carbusulfan | Insect. | Advantagrs | 20% EC (21.6% w/w) (App.-A), 20% ULV (App.-C) & Tech. 86.5% (w/w) (App.-B) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | **a) 20% EC Approved for USE Against:** Cotton bollworm, Cotton Jassids, Cotton Aphid, Rice white backed plant hoppers and Apple codling moth. **B) 20 ULV Approved for Use Against:** Locust Control. | 10.07.2003 | 30.06.2006 |
| 248 | Diphenamid | Herb. | Enide | 50 W (50% w/w) (Appendix-A) | Agricides (Pvt) Ltd., Karachi. | Broad-leaved weeds in tobacco. | 05.11.1985 | 30.06.1988 |
| 250 | Cypermethrin | Insect. | Sharpa | 5% EC (5.6% w/w) (App.-A) & 90% Tech. Min. (App.-B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotto Pink and Spotted bollworms. | 25.06.2003 | 30.06.2006 |
| 251 | propicinazole | Fung. | Tilt | 250EC | Novartis (Pakistan) Ltd., Karachi. | | | |
| 251 | Acephate | Insect. | Orthane | 5g | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | | | |
| 252 | Maleic Hydrazide | Herb. | Royal MH-30 | 21.7 EC (21.7% w/w) (App.-A) | Agricides (Pvt) Ltd., Karachi. | Suckers in tobacco. | 05.11.1985 | 30.06.1985 |

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| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
|---|---|---|---|---|---|---|---|---|
| 253 | Atrazine+ Cyanazine | Herb. | Bladex plus | 50SC | BASF Pakistan (Pvt) Ltd., Karachi. | | | |
| 254 | Fenfuran | Fung. | Fenoram | 75 F | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | | | |
| 255 | Fenvalerate | Insect. | Sumicidin | 2.5% ULV (App.-A) | Granulars (Pvt) Ltd., Karachi. | Pink and spotted bollworms of Cotton. | 02.08.1994 | 30.06.1997 |
| 256 | Cypermethrin | Insect. | Ripcord | 80% (w/w) (Appendix-A) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Rodent control only. | 02.08.2001 | 30.06.2004 |
| 258 | Lambda cyhalothrin | Insect. | Karate | 2.5 EC (2.5% w/v) & Tech. Min. 81% (w/w) (App. A & B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton bollworms, Jassids, Whitefly and thrips, Gram Pod borer, Mango hoppers, Rice Stem Borer and leaf-folder , brinjal and leady finger fruit borer. | 07.03.2002 | 30.06.2004 |
| 259 | Cypemethrin+ Chlorpyrifos | Insect. | Nurelle-D | 505 EC (45.37% + 4.54%), Cyper. 90% w/w Tech. (App.-A,B) | Dow Elanco Ltd., Karachi. | Cotton Heliothis, spotted bollworms, pink bollworms, jassids, thrips, whitefly. | 21.03.2003 | 30.06.2004 |
| 261 | Fenvalerate | Insect. | Fenkill | 20ec,90-t | Arrow Trading Co. (Pvt) Ltd., Karachi. | | | |
| 262 | Fenvalerate+ Dimethoate | Insect. | Mikantop | 40% (w/v) EC (Dimethoate 30% w/v + Fenvalerate 10% w/v) (Appendix-A) | Granulars (Pvt) Ltd., Karachi. | Cotton insect pest complex. | 04.08.1998 | 30.06.2001 |
| 263 | Cyfluthrin+ Methamidophos | Insect. | Baythroid TM | 525 SL (w/v), Tamaron 70-73%, Baythroid 90% Tech. (Appendix-A, B & C) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton Jassids, Whitefly, Spotted and bollworms. | 12.04.2003 | 30.06.2004 |
| 264 | Isoproturon | Herb. | Tolkan | 50% WP (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Weeds in Wheat. | 22.02.2003 | 30.06.2004 |
| 265 | Deltamethrin+ Dimethoate | Insect. | Decis-D | 12.5 + 300 EC (Deltamethrin 12.5 + Dimethoate 300 g/l) Deltamethrin Tech.98% & Dimethoate (95+2.5%)(App.A,B,C) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Insect Pest Complex of Cotton. | 19.02.2003 | 30.06.2005 |
| 266 | Oxadiazon | Herb. | Ronstar | 12 EC (12.94% w/w) (App.-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Weeds in rice & onion. | 22.02.2003 | 30.06.2004 |
| 267 | Bifenthrin | Insect. | Talstar | 10% EC (w/w), 2.5% ULV (w/w) (App-A,C), Tech. 92% (App-B) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | (a) 10 EC: Cotton bollworms, Jassids, Whiteflies and mites, Citrus leaf miner, Mango hopper, Canola aphids and Sugarcane termites, Apple spider mites. (b) 2.5 ULV: Cotton bollworms Jassids, Whiteflies and thrips. | 06.06.2001 | 30.06.2004 |

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| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
|---|---|---|---|---|---|---|---|---|
| 268 | Alphamethrin | Insect. | Bestox | 5% w/w (50 g/l) (App-A)<br>Tech.92% (w/w) (App-B) | FMC United (Pvt) Ltd.<br>61-A, Main Gulberg, Lahore. | Bollworms of Cotton. | 06.06.2001 | 30.06.2004 |
| 269 | Cypermethrin | Insect. | Cyperkill | 3ed,90%-t | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | | | |
| 270 | Quinalphos+ thiometon | Insect. | Tembal | 32ec,50,70-t | Novartis (Pakistan) Ltd., Karachi. | | | |
| 272 | Monocrotophos | Insect. | Nok-Out | 40% WSC (w/w) (App-A) | Farm Services Syndicate<br>All-Farooq Chamber, Room, No. 101, 130, Temple Road, Lahore. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | 26.06.2001 | 30.06.2004 |
| 273 | Ethion | Acari | Ethion | 46.5 % EC (App-A) & Tech. 96 % (App-B) | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Cotton, Sugarcane, Apples and Almond mites. | 23.01.2002 | 30.06.2004 |
| 274 | Monocrotophos | Insect. | Monofos | 40% WSC (w/v) (App-A) &70-72 %Tech (App-B) | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | 18.01.2002 | 30.06.2004 |

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| 275 | Endosulfan | Insect. | Thioluxan | 35 EC (w/v) (App-A) & Tech. 95% (w/w) (App-B) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | 22.04.2002 | 30.06.2004 |
| 276 | Methomyl | Insect. | Nudrin | 90wsp | BASF Pakistan (Pvt) Ltd., Karachi. | | | |
| 278 | Isoproturon | Herb. | Graminon | 500 FW (w/v) (Appendix-A) | Novartis (Pakistan) Ltd., Karachi. | Grass weeds in wheat. | 17.10.1998 | 30.06.2001 |
| 279 | Isoproturon | Herb. | Arelon | 50 Dispertion (500 g/l) (App.-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Weeds in Wheat. | 22.03.2003 | 30.06.2004 |
| 280 | Quinalphos | Insect. | Ekalux forte | 48ec | Novartis (Pakistan) Ltd., Karachi. | | | |
| 282 | Permethrin | Insect. | Coopex dust | 0.5d | Rousal Uclaf Pakistan Ltd., Lahore. | | | |
| 283 | Permethrin+ Pipernoyl butaoxide | Insect. | Coopex Liquid | 10/50,90-t | Rousal Uclaf Pakistan Ltd., Lahore. | | | |
| 283 | Cyfluthrin | Insect. | Baythroid | 050 EC (50 g/l) (App-A), Tech 90% (w/w) (App-B) | Bayer DAS (Pvt.) Ltd. 18 / III, Flench Street, Off Bleak House Road, Civil Lines, Karachi. | Cotton bollworms. | 02.06.2001 | 30.06.2004 |
| 284 | Cyfluthrin | | Baythroid | 50 EC (50 g/l) (App.-A) & 90% Tech. (App.-B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton bollworms. | 29.04.2003 | 30.06.2004 |
| 286 | Streptomycin+ Oxytetracycline | Herb. | Agrimycin | Agrimyoin 100 (App.-A) | Pfizer Lab (Pvt) Ltd., Karachi. | Citrus canker. | 31.03.1987 | 30.06.1989 |
| 287 | Trifluralin | Herb. | Treflan | 4 EC (44.5% w/w) (Appendix-A) | Bayer DAS (Pvt.) Ltd. 18 / III, Flench Street, Off Bleak House Road, Civil Lines, Karachi. | Annual grasses and broad leaved weeds in cotton soyabeans & vegetales. | 05.06.2002 | 30.06.2005 |
| 288 | Cypermethrin+Di methoate | Insect. | Almos-D | 6.25 ULV (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Locust | | 30.06.2005 |
| 289 | Dimethoate | Insect. | Systoate | 400g/l (Appendix-A) & Tech.(96-98%) (Appendix-B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | 10.02.2003 | 30.06.2005 |

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| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
| 290 | Dimethoate | Insect. | Chemathoate | 40 EC (400 g/l) (App.-A) & Tech. 96% Min. (App.-B) | Jaffer Brothers (Pvt) Ltd., Karachi. | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | 06.03.2000 | 30.06.2002 |
| 291 | Dimethoate | Insect. | Higonet | 40 EC (App.-A), Tech. 96% (App.-B) & Liquid Tech. 65% w/w) (App.-C) | Arrow Trading Co. (Pvt) Ltd., Karachi. | | | |
| 292 | Dimethoate | Insect. | Dimetoxal | 40% EC (App.-A) & 95% Tech. Min. (App.-B) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | 27.06.2002 | 30.06.2005 |
| 293 | Bromopropylate | Acari | Neoron | 500 EC (g/l) (App-A) & Tech. 92% (w/w) (App- B) | Syngenta Pakistan Ltd.<br>S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton mites and apple mites. | 15.06.2002 | 30.06.2005 |
| 295 | Methamidophos | Insect. | Asomido | 60% SL (w/v) (Appendix-A) & 73% Tech. Min. (w/w) (Appendix-B) | Data Universal (Pvt) Ltd., Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | 17.10.2002 | 30.06.2005 |
| 296 | Trichlorofon | Insect. | Ditera | 80% WP (App.-A) & Tech. (App.-B) | Agricides (Pvt) Ltd., Karachi. | Melon fruitfly. | 16.07.2002 | 30.06.2005 |

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|---|---|---|---|---|---|---|---|---|
| 297 | Monocrotophos | Insect. | Asomono | 40% WSC (Appendix-A) & Tech. 70-72% (Appendix-B) | Data Universal (Pvt) Ltd., Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | 16.08.1999 | 30.06.2002 |
| 298 | Nicotin Sulphate | Insect. | Nicocide | 40-I | B. S. Insecticides Ltd., Karachi. | | | |
| 299 | Thiemeton | Insect. | Ekatin | 25ec | Novartis (Pakistan) Ltd., Karachi. | | | |
| 301 | Dicofol | Acari | Mitithane | 42.6% EC (w/v) (App.-A) & Tech. 85% (w/w) (App.-B) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Mites attacking on Cotton, Sugarcane, Apple & Almonds. | 12.06.2003 | 30.06.2006 |
| 302 | Dimethoate | Insect. | Luxagon | 40% EC (w/v, 65% ULV (w/v) & Tech. 95% (w/w) (App.-A, B & C) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | **A. 40%EC approved for use against:-**<br>CROPS, PESTS, DOSES<br>Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre<br>**B. 65%ULV approved for use against:-**<br>CROPS, PESTS, DOSES<br>Cotton, Jassids, 250 ml/acre<br>Cotton, Thrips, 250 ml/acre<br>Potato, Jassids, 250 ml/acre<br>Potato, Aphids, 250 ml/acre<br>Tobacco, Aphids, 250 ml/acre<br>Oil seed, Aphids, 250 ml/acre<br>Sugarcane, Pyrilla, 250 ml/acre | 12.06.2003 | 30.06.2006 |

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|---|---|---|---|---|---|---|---|---|
| 303 | Dichlorvos | | Vapolux | 50 EC (w/v) & Tech. 95% (w/w) (App.A, B) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Mango, Hoppers, 300 ml/100 lit water<br>Mango, Mealybugs, 300 ml/100 lit water<br>Citrus, Psyilla, 300 ml/100 lit water<br>Citrus, Butterfly, 300 ml/100 lit water<br>Citrus, Blackfly, 300 ml/100 lit water<br>Tobbaco, Aphids, 300 ml/acre<br>Okra, Jassids, 300 ml/acre<br>Okra, Aphids, 300 ml/acre<br>Orchards, Mealybugs, 300 ml/100 lit water<br>Orchards, Scales, 300 ml/100 lit water<br>Peaches, Aphids, 300 ml/100 lit water | 25.06.2003 | 30.06.2006 |
| 304 | Phenthoate | Insect. | Agrisan | 50% EC (w/w) (App.-A) & Tech. 92% (w/w) (App.-B) | Agricides (Pvt) Ltd., Karachi. | Cotton jassids and bollworms only. | 06.07.2000 | 30.06.2003 |
| 306 | Diflubenzuron | Insect. | Dimilin | 25% WP (w/w) (Appendix-A) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Forest Defoliators, Cotton Bollworms & Apple Codling moth. | 25.06.2003 | 30.06.2006 |
| 308 | Sulfur | Fung. | Kumulus-DF | 80% WG (w/w) (App.-A) & Tech. 99% (w/w) (App.-b) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Powdery mildew on apples, grapes, cucumbers and melons. | 10.07.2003 | 30.06.2006 |
| 309 | Dimethoate | Insect. | Sumithoate | 40% EC (40% w/w) (App.-A) & 95% Tech. Conc. (App.-B) | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | Cotton jassid, whitefly and thrips. | 05.10.1994 | 30.06.1997 |
| 310 | Monocrotophos | Insect. | Suncrotophos | 40% SCW (40% w/v) & Tech.72% (w/w) Min.(App.-A, B & C) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | 25.06.2003 | 30.06.2006 |
| 311 | Fenpropathrin | Insect. | Danitol | 2.5% ULV (2.56 g/l) w/v (App.-A) | Granulars (Pvt) Ltd., Karachi. | Cotton jassids, whitefly, thrips and bollworms. | 08.08.1994 | 30.06.1997 |
| 312 | Carbufuran | Insect. | Diafuran | 3% G (w/w) (App-A) & Technical 92% w/w (App-B) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | 05.08.2003 | 30.06.2006 |

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|---|---|---|---|---|---|---|---|---|
| 313 | Methamidophos | Insect. | Sundaphos | 50% SCW (50% w/w) & Tech. 73% (w/w) (App.-B & C) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | 25.06.2003 | 30.06.2006 |
| 314 | Dichlorvos | Insect. | Nokovos | | Nichimen Corporation (Pvt) Ltd., Lahore. | | | |
| 315 | fluvalinate+ Thiometon | Insect. | Mavrik-B | 50zp,72+200ec,89.7-t | Novartis (Pakistan) Ltd., Karachi. | | | |
| 316 | Cypermethrin+ Monocrotophos | Insect. | Fenom-N | 425 EC (400 g/l + 25 g/l) (App.-A) & Monocrotophos Tech. 75% Min. (w/w) (App.-C) & Cypermethrin high-cis Tech. 87.5% Min. (w/w) (App.-B) | Novartis (Pakistan) Ltd., Karachi. | Cotton jasids, whitefly, thrips, bollworms, tobacco cutworm & okra jassids. | 20.07.1994 | 30.06.1997 |
| 317 | Chlorpyrifos+ Dimethoate | Insect. | Dimlor | 662ec | Dow Elanco Ltd., Karachi. | Cotton jasids, whitefly, thrips and bollworms. | 21.11.1995 | 30.06.1997 |
| 318 | Ethion | Acari | Cethion | 48% EC (480 g/l) (App-A) & Tech. 95% (w/w) (App-B) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Cotton mites, jassids and thrips only. | 16.06.2003 | 30.06.2006 |
| 319 | Fenariomol | Fung. | Rubigan | 120 g/l (12% EC) (Appendix-A) | DuPont Pakisan 2nd Floor, Bahria Complex-1, M.T. Khan Road, Karachi. | Powdery mildew of Musk melon. | 22.05.2003 | 20.06.2006 |
| 320 | Tricyclazole | Fung. | calixin | 750EC | BASF Pakistan (Pvt) Ltd., Karachi. | | | |
| 321 | Flucmeturon + Prometryn | Herb. | Cotogard | 500 FW (w/w) & Tech. Flu. 96% Min., Pro.97% Min. (App-A, B & C) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton broad - leaved and grass weeds only. | 25.04.2003 | 30.06.2006 |
| 323 | Tridemorph | Fung. | Calixin | 750 EC (750 g/l) (Appendix-A) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Mango powdery mildew only. | 01.07.2003 | 30.06.2006 |
| 324 | Methcriphos | Insect. | Damfin | 500 EC (w/v) (500 g/l) (App.-A) & 93% Tech. 93% (w/w) (App.-B) | Novartis (Pakistan) Ltd., Karachi. | Tribolium spp. On wheat. | 21.01.1999 | 30.06.2000 |
| 325 | Carbufuran | Insect. | Agridan | 3% G (w/w) (App-A) & 75% (w/w) Tech. Conc. (App-B) | Agricides (Pvt) Ltd., Karachi. | Paddy stem borers. | 18.08.2001 | 30.06.2004 |

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|---|---|---|---|---|---|---|---|---|
| 327 | Ethofenprox | Insect. | Trebon | 30 EC(30.5%w/w)(App-A) & Tech.Min.96%(w/w)(App-B) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Cotton bollworms, jassids, whiteflies, tobacco aphids and rice leaf folder and white backed plant hopper. | 16.07.2002 | 30.06.2004 |
| 328 | Cycloprethrin | Insect. | Cyclosal | 10 EC (10% w/v) &Tech. 91%(w/w) (App. A & B) | Nichimen Corporation (Pvt) Ltd., Lahore. | Cotton bollworms and jassids. | 23.07.1995 | 30.06.1998 |
| 329 | Cypermethrin | Insect. | Ustad | 10ec,92-t | Arrow Trading Co. (Pvt) Ltd., Karachi. | | | |
| 330 | Cypermethrin | Insect. | Luky cypermethrin | 10% EC (10% w/w) (App.-A) & 90% (w/w) Tech. (App.-B) | GHR (Pvt) Ltd., Karachi. | Cotton Pink and spotted bollworms. | 31.03.1999 | 30.06.2001 |
| 331 | Methamidophos | Insect. | Estrella | 60% (w/v) SL (App-A) & 73% Tech.Min. (w/w) (App-B) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | 30.06.2001 | 30.06.2004 |
| 332 | Endosulfan | Insect. | Hexasulfan | 35ec,94-t | Agricides (Pvt) Ltd., Karachi. | | | |
| 333 | Endosulfan | Insect. | Endon | 35% (w/w) EC (App-A) & 94% (w/w) Tech.(App-B) | Agricides (Pvt) Ltd., Karachi. | Cotton Jassids and thrips. | 22.08.2001 | 30.06.2004 |
| 334 | Fenpropethrin+ Fenitrothion | Insect. | Mcothrin Super | 50% (w/w) EC (App-A), Tech. 90% (w/w) & Tech. 95% (w/w) (App.-C) | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | Cotton Jassids and thrips. | 28.08.1998 | 30.06.2001 |
| 335 | Cypermethrin+ Monocrotophos | Insect. | Azocard | 40 / 400 g/l EC (App.-A) & Tech.Cyp. & Mono. (App.- B&C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton - bollworms, jassids, whiteflies & thrips. | 28.02.2001 | 30.06.2004 |
| 336 | Alpha Cypermethrin+ Monocrotophos | Insect. | Azophos | 20 / 400 g/l EC (App.-A) & Tech. AlCyp. & Mono. (App.- B&C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton - bollworms, jassids, whiteflies & thrips. | 28.02.2001 | 30.06.2004 |
| 337 | Deltamethrin+ Triazophos | Insect. | Deltaphos | 360 EC (10+350 g/l) & Tech. Deltamethrin 98% w/w, Triazophos 70% Conc. (Appendix-A, B & C) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton bollworms, Heliothis eggs, Jassid, Whiteflies, Thrips & Mites, Maize Shootfly and borers. Rice Leaf folder. | 19.02.2003 | 30.06.2004 |
| 338 | Flucithrinate+Dimethoate | Insect. | Pay Off-D | 50/300ec78,96-t | BASF Pakistan (Pvt) Ltd., Karachi. | | | |
| 339 | Flucithrinate+ Mephosfolan | Insect. | Pay Off Plus | Pay - off - plus (25 + 200 g/l EC) (App.-A) | Cynamid (Pak) Ltd.,Karachi. | Cotton bollworm, jassids and whiteflies. | 29.10.1992 | 30.06.1995 |

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|---|---|---|---|---|---|---|---|---|
| 340 | Carbufuran | Insect. | Sunfuran | 3% Granules (App-A) & 75% Tech. (App-B) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | 06.07.2001 | 30.06.2004 |
| 343 | Fenitrothion+ BPMC | Insect. | Sumibos | 75 EC (45% w/w + 30% w/w) (App-A) | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | Paddy stem borers. | 08.01.1995 | 30.06.1995 |
| 344 | Cypermethrin+ Dimethoate | Insect. | Laser | 25 EC (25+130g/l) (App-A), Cyp. 90% & Dim. 94-96% (App-B,C) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Cotton bollworms, Jassids, whiteflies and thrips. | 30.06.2001 | 30.06.2004 |
| 346 | Dicofol | Acari | Kelthane | 40ED | ICI Pakistan Ltd., Karachi. | | | |
| 347 | Isoproturon | Herb. | Kenoron | 75wp,50-d,97-t | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | | | |
| 348 | Isoproturon | Herb. | Nocilon | 50wp,95-t | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | | | |
| 349 | Terbutryn+ Terbuthylazine | Herb. | Topogard | 500 FW (150 +350 g/l) (w/v) (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Broad - leaved weeds in potatoes. | 29.08.2001 | 30.06.2004 |
| 350 | Mancozeb | Fung. | Pennocozeb | 80% WP w/w (App-A) & 92% Tech. (w/w) (App-B) | Granulars (Pvt) Ltd., Karachi. | Potato Early & Late blight @ 600g/acre Vegetables & Cucurbits Downy mildew @ 800gm/acre | 26.06.2001 | 30.06.2004 |
| 351 | Propicinazole | | Tilt | 250 EC (w/v) (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Wheat rust and powdery mildew of mangoes. | 22.08.2001 | 30.06.2004 |
| 352 | Mancozeb | Fung. | Nemispor | 80% (w/w) WP (App.-A) & 90% Tech. (w/w) (App.-B) | Alintco (Pvt) Ltd., Karachi. | Downy mildew of melons. | 23.07.1998 | 30.06.2001 |
| 353 | Mancozeb + Oxadixyl | Fung. | Sandofan-M | 10+56 WP (w/w) (Appendix-A) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Tomato early blight. | 27.07.1998 | 30.06.2001 |
| 354 | Triadimenol | Fung. | BAYTAN FOLIAR | 250 EC (250 g/l) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Powdery mildew of Mango. | 16.06.2003 | 30.06.2006 |
| 355 | Tridiazuron | Herb. | Dropp | 50wp | Schering Asia (Pvt) Ltd., Karachi. | Cotton Defoliators. | 09.05.1990 | 30.06.1992 |
| 356 | Zinc Phosphide | Insect. | Zinc Phosphide | 80% (w/w) (Appendix-A) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Rodent control only. | 11.02.1999 | 30.06.2001 |
| 357 | Zinc Phosphide | Insect. | Zinc Phosphide | 80dp | Jash Ltd., Karachi. | | | |

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| 358 | Aluminium Phosphide | Fum. | Agtoxin | Tablets (App-A) & Bags (App-B) | AG Pesticides (Pvt) Ltd., Karachi. | Trogoderma granrium, Tribolium castaneum and Rhizopertha dominica in stored wheat, and Rice stored pests. | 17.07.2001 | 30.06.2004 |
| 359 | Sulfur | Fung. | Thiovit | Sulpher 80% (w/w) (App.-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Powdery mildew on apples, grapes cucumber & melons. | 04.09.2001 | 30.06.2004 |
| 360 | Zinc Phosphide | Insect. | Zarrow | 80dp | Arrow Trading Co. (Pvt) Ltd., Karachi. | | | |
| 361 | Copper Hydroxide | Fung. | Champion | 77% WP (w/w) (Appendix-A) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight, 1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | 10.08.2002 | 30.06.2004 |
| 362 | Methyl Bromide | Fum. | Mebrom | 98% + 2% (w/w) Chloropicrin (Appendix-A) | National Chemicals (Pvt) Ltd., Karachi. | Fumigation of stored agricultural products. | 22.06.2001 | 30.06.2004 |
| 363 | Zinc Phosphide | Insect. | Azinphos | 90-95-p | AG Pesticides (Pvt) Ltd., Karachi. | | | |
| 364 | Prothoate+ dimethoate | Insect. | Facron-S | 135/220,91-t | Alintco (Pvt) Ltd., Karachi. | | | |
| 365 | Esfenvalerate | Insect. | Sumicidin Super | 5 EC (App.-A) & 79% (w/w) Tech. (App.-B) | Granulars (Pvt) Ltd., Karachi. | Cotton bollworms. | 19.08.1999 | 30.06.2002 |
| 366 | Benthiocarb | Herb. | Saturn | 93% Technical (w/w) liquid (App.-A) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Rice grasses, Broad Leaved weeds and sedges. | 30.11.2002 | 30.06.2005 |
| 367 | Trialkoxydim | Herb. | Grasp | 10 EC (10% w/v) &Tech. 92%(w/w) (App. A & B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Wheat grass. | 15.06.2002 | 30.06.2005 |
| 368 | Butachlor | Herb. | Sundachlor | 60 EC (w/v) (App.-A) & Butachlor Tech. 85% (w/w) (App.-B) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Rice grasses, Broad Leaved weeds and sedges. | 28.01.2002 | 30.06.2005 |
| 369 | Fentrazole Terbutrazole | Fung. | Raxil | 2 DS (App-A) & Fenetriaze Tech. 93 % (w/w)(App-B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | wheat loose sumt. | 29.04.2003 | 30.06.2005 |
| 370 | Carbendazim | Fung. | Bavistin | 50% (w/w) WP (Appendix-A) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Peas powdery mildew. | 11.06.2002 | 30.06.2005 |
| 371 | 2,4-D Fluid | Herb. | U-46-D | 720SL,94%-I | BASF Pakistan (Pvt) Ltd., Karachi. | | | |

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| 372 | Fentrazole Terbutrazole | Fung. | Raxil | 2 WS (w/w) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Wheat loose sumt. | 29.0.2003 | 30.06.2005 |
| 373 | Pyraclofos | Insect. | Voltage | 50ec,92.6-t | Nichimen Corporation (Pvt) Ltd., Lahore. | | | |
| 374 | Fenvalerate | Insect. | Edcidin | 20 EC (w/v) (App-A) & 90% (w/w) Tech. (App.-A) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Cotton, Pink bollworm, 250 ml / acre<br>Cotton, spotted bollworm, 250 ml / acre | 10.07.2003 | 30.06.2005 |
| 375 | Diniconazole | Fung. | Spotless | 12.5 WP (App.-A) & 94% Tech. (w/w) (App.-B) | Granulars (Pvt) Ltd., Karachi. | Peas powdery mildew. | 30.07.2002 | 30.06.2005 |
| 376 | Metalaxyl | Fung. | Ridomil | MZ 72 WP & Meta.Tech.93%,Manc.Tech.93%(App-A,B&C) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Melon downy mildew, chillies collar rot, early blight of potato & tomato and late blight of potato. | 15.06.2002 | 30.06.2005 |
| 377 | Trichlorofon | Insect. | Edgron | 80 WP (App.-A) & 95% Tech. (App.-B) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Melon fruit flies. | 10.07.2003 | 30.06.2005 |
| 378 | Flufenoxuron | Insect. | Cascade | 10 DC (100 g/l) (App.-A) & Tech. 98% (w/w) (App.- B) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton - bollworms, cabbage butterfly, melon leaf miner and potato heliothis, apple mites & codling moth. | 26.06.2003 | 30.06.2005 |
| 379 | Cypermethrin | Insect. | Sunmerin | 5% EC (w/w) (Appendix - A) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Cotton - pink & Spotted bollworms. | 27.06.2002 | 30.06.2005 |
| 380 | Benomyl | Fung. | Sunlate | 50% WP (App.-A) & 95% Tech. (w/w) (App.-B) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Melon Powdery Mildew only. | 28.01.2002 | 30.06.2005 |
| 381 | Dimethoate | Insect. | Stinger | 40% (w/w) EC (App.-A) & 96% (w/w) Tech. (App.-B) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | 27.06.2002 | 30.06.2005 |
| 382 | Cypermethrin+ Monocrotophos | Insect. | Boom | 425 EC (25 g/l + 400 g/l), Cypermethrin Tech. 90% (w/w) Monocrotophos Tech. 72% (w/w) (Appendix-A, B & C) | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Cotton Jassids, Whiteflies, Thrips and Bollworms. | 28.01.2002 | 30.06.2005 |

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| 383 | Cypermethrin+Dimethoate | Insect. | Cypergard | 50/250 g/l EC (App.-A), Tech.Cyp. & Dimeth. (App.- B&C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton - Jassids, Whitefly, thrips & bollworms. | 16.07.2002 | 30.06.2005 |
| 384 | Cypermethrin+ Mephosfolan | Insect. | Cropgard | 50/300 EC (App.-A), Cypermethrin Tech. 90% w/w (App.-B) & Mephosfolan Tech. 85% (w/w) (App.-C) | Cynamid (Pak) Ltd.,Karachi. | Cotton jassids, whiteflies, thrips and bollworms. | 11.11.1993 | 30.06.1996 |
| 385 | Furathiocarb | Insect. | Deltanet | 400EC(w/v)&Tech.85%(w/w)&ST 400CS(w/v)(App-A,B&C) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | (i) 400 EC-Rice leaf hopper, white backed plant hopper and cotton aphids. (ii) ST 400 CS- cotton jassid, whiteflies and thrips, maize shootfly and stem borer. | 21.08.2001 | 30.06.2004 |
| 386 | Dimethoate | Insect. | Dimegro | 40 EC (42% w/v) (App.-A) & 96% (w/w) Tech. (App.-B) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | 09.07.2003 | 30.06.2005 |
| 387 | Beta-Cyfluthrin + Methamidophos | Insect. | Magnum | 525 SL (App.-A) & 95% Tech. Beta-Cyfluthrin (App.-B) | AgrEvo Pakistan (Pvt.) Ltd., Karachi. | Cotton jassids, whiteflies, thrips and bollworms only. | 31.07.1996 | 30.06.1999 |
| 388 | Fenitrothion+ BPMC | Insect. | Sumibos | 4-D (Appendix-A) | Granulars (Pvt) Ltd., Karachi. | Rice stem borers. | 19.08.1999 | 30.06.2002 |
| 389 | Cypermethrin | Insect. | Polytrin | 200 EC(200 g/l) & Cyper. Tech. 90 % (w/w) (App-A & B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton bollworms. | 15.06.2002 | 30.06.2005 |
| 390 | Pretilachlor | Herb. | Rifit | 2G (w/w) (App-A) & Tech. 95 % (w/w) (App-B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Rice grasses, broad - leaved and sedges. | 14.06.2002 | 30.06.2005 |
| 391 | Isazophos | Insect. | Miral | 500 EC (w/v) (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton bollworms, whitefly, thrips, jassids and mites, potato jassids, chili bud mites and cotton heliothis eggs. | 15.06.2002 | 30.06.2005 |
| 392 | Metalochlor+ Flumeturon | Herb. | Cotoran Multi | 50 WP,Meto.Tech.96%(w/w)& Fluo.95%(w/w)(App-A,B&C) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton broad - leafed weeds. | 15.06.2002 | 30.06.2005 |
| 393 | Dimethoate | Insect. | Amerthion | 40ec,94.97-t | Agro Promotion Ltd., Karachi. | | | |
| 395 | Tralomethrin | Insect. | Tralate | 3.6% EC (36 g/l) (App.-A) & Tralomethrin MUP 25-30% (App.-B) | Du Pont Far East Inc., Karachi. | Cotton Jassids, Whiteflies, Thrips and bollworms. | 24.08.1993 | 30.06.1996 |

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| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
|---|---|---|---|---|---|---|---|---|
| 396 | Beta-Cyfluthrin | Insect. | Bulldock | 025 EC (25 g/l) (App. - A), Tech. 97% (w/w) (App. -B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton Jassids, whitefly, Thrips and Bollworms. | 25.04.2003 | 30.06.2005 |
| 397 | Cartap Hydrochloride | | Padan | 95% sp (Appendix-A) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Rice stem borers, leaf-folders, cotton jassids, whiteflies and bollworms. | 01.01.2003 | 30.06.2005 |
| 398 | Aluminium Phosphide | Fum. | Fostek | Tablets. | Agro Promotion Ltd., Karachi. | | | |
| 399 | Penconazole | Fung. | Topas | 100 EC (100 g/l) (App-A) & Penc. Tech. 95 % (w/w) (App-B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Powdery mildew of apple and mango and cucumber powdery mildew. | 15.06.2002 | 30.06.2005 |
| 400 | Triadimenol | Fung. | Baytan | WS 25 (Appendix-A), Technical 92% (Appendix-B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | wheat loose sumt only. | 29.04.2003 | 30.06.2005 |
| 401 | Terbutryn+ Triasufuran | Herb. | Logran Extra | 64%(w/w)WG,Terb.98%min.&Tria. 92%min.(App-A,B&C) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Wheat broad leaved weeds. | 15.06.2002 | 30.06.2005 |
| 402 | Lambda Cyhalothrin | Insect. | Karate | 8 g/l (App.- A) & Tech. 90% (w/w) (App.-B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton Jassids, Whitefly and bollworms. | 16.07.2002 | 30.06.2005 |
| 403 | Lambda Cyhalothrin | Insect. | Karate | 2ed | ICI Pakistan (Pvt) Ltd., Lahore. | | | |
| 404 | Malathion | Insect. | Maladan | 57% EC (w/w) (App.-A) & Tech. 92% (w/w) (App.-B) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Mellon fruit fly. | 04.07.2000 | 30.06.2003 |
| 405 | Methamidophos | Insect. | Master | Methamidophos 600 grams (ai) / lit. & Tech. 73% (w/w) (Appendix-A, B & C) | Sabzazar & Co. (Pvt.) Ltd. Fretan Square, Mauripur Road, Opp: Wazir Mansion Railway Station, Karahci. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | 10.07.2003 | 30.06.2006 |
| 406 | Fenitrothion | Insect. | Edthion | 50% (w/w) EC (App.-A), 80% ULV (App.-B) & 90% Tech. (App.-C) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Cotton jassids only (50 EC) and for use against paddy stem borers, leaf roller, leaf hoppers and grass hoppers (80 ULV) | | |

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|---|---|---|---|---|---|---|---|---|
| **Reg. No.** | **Product** | | | **Formulation** | **Name of Applicant** | **Uses** | **Registed Date** | **Receiving Date** |
| 408 | Cypermethrin+ Methamidophos | Insect. | Heptokill | 30+200 S/L (App.-A), Cypermethrin 90-96% Tech. (App.-B) & Methamidophos Tech. 73% (App.-C) | Farm Services Syndicate All-Farooq Chamber, Room, No. 101, 130, Temple Road, Lahore. | Cotton pink & spotted bollworms & jassids. | 10.07.2003 | 30.06.2006 |
| 409 | Fenvalerate | Insect. | Sumicidin | 0.5ulv | Agriculture Chemical & Dystuff (Pvt) Ltd., Karachi. | | | |
| 410 | Dimethoate | Insect. | Profecthion | 40ulv | BASF Pakistan (Pvt) Ltd., Karachi. | | | |
| 411 | Deltamethrin | Insect. | Decis | 1.25% (w/v) ULV (App.-A) | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | Locust Centrol only. | 25.07.1994 | 30.06.1997 |
| 413 | Copper Oxichloride | Insect. | Agricop | 50% WP (Aopendix-A) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | foliar spray. | 15.06.2000 | 30.06.2003 |
| 414 | Endosulfan+ Dimethoate | Insect. | Aflix | 36 EC (App.-A), Endosulfan 94% Tech. & Dimethoate 95% Tech. (App.-C) | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | Cotton jassids, whiteflies and thrips. | 13.05.2000 | 30.06.2001 |
| 415 | Monocrotophos | Insect. | Agricron | 40% (w/v) WSC (App-A) & 72% (w/w) Tech.(App-B) | Agricides (Pvt) Ltd., Karachi. | Cotton Jassids. | 03.08.2001 | 30.06.2004 |
| 416 | Methamidophos | Insect. | Piron | 50 (w/w) SL (App-A) & 73% (w/w) Tech.(App-B) | Agricides (Pvt) Ltd., Karachi. | Cotton Bollworms. | 01.08.2001 | 30.06.2004 |
| 417 | Cypermethrin+ Dimethoate | Insect. | Ammo-M | 550ec,90,53.5-t | FMC International Ltd., Lahore. | | | |
| 418 | Cypermethrin+ Monocrotophos | Insect. | Aman-Phos | 450ec | FMC International Ltd., Lahore. | | | |
| 419 | Carbufuran | Insect. | Asocarb | 3% (w/w) G (App-A) & 75% (w/w)Tech. (App-B) | Data Universal (Pvt) Ltd., Karachi. | Potato tuber month. | 07.11.2001 | 30.06.2004 |
| 420 | Methomyl | Insect. | Asonate | 90 WP (w/w) (App.-A) & 95% Tech. (App.-B) | Data Universal (Pvt) Ltd., Karachi. | Cotton Jassids and bollworms. | 18.07.1998 | 30.06.2001 |
| 421 | Acephate | Insect. | Asophate | 75% SP (w/w) (App-A) & 95% Tech. (App-B) | Data Universal (Pvt) Ltd., Karachi. | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, witefly, aphids, jassids. | 07.11.2001 | 30.06.2004 |
| 422 | Chlorfluazuron | Insect. | Atabran | 5 EC (App.-A) & 90% (w/w) Tech. (App.-B) | ICI Pakistan (Pvt) Ltd., Lahore. | Cotton bollworms. | 29.06.1998 | 30.06.2001 |
| 423 | Carbufuran | Insect. | Brifur | 3% (w/w) G (App.-A) & 75% (w/w) Tech. (App.-B) | Alintco (Pvt) Ltd., Karachi. | Maize stem borer. | 03.10.1998 | 30.06.2001 |
| 425-B | Imidachloprid | Insect. | Confidor | 200 SL & 94% Tech. (App.-A,B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton whiteflies (adult & nymph @ 250ml / acre, Cotton jassids & thrips @ 60ml / acre, Sugarcane termites @ 250 ml / acre). | 29.04.2003 | 30.06.2004 |

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|---|---|---|---|---|---|---|---|---|
| 425-A | Imidachloprid | Insect. | Confidor | WS 70 (Appendix-C) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | **Confidor WS 70:** Cotton jassids, whiteflies, thrips & maize shootfly as seed dressing @ 5g/kg seeds. | | |
| 426 | Fenvalerate+ Dimethoate | Insect. | Edimetol-D | 40EC(11.11+31.25%),Fenv.90%& Dim.96%Tech.(App.A,B,C) | Agricides (Pvt) Ltd., Karachi. | Cotton jassids and bollworms. | 18.08.2001 | 30.06.2004 |
| 427 | Methamidophos | Insect. | Edron | 50% (w/w) SC (App-A) & Tech. 73% (w/w) (App-B) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Cotton bollworms. | 28.01.2002 | 30.06.2004 |
| 428 | Dichlorvos | Insect. | Edvos | 50% (w/v) EC (App-A) & 93% (w/w) Tech.(App-B) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Okra jassids and aphids. | 01.08.2001 | 30.06.2004 |
| 429 | Dimethoate | Insect. | Dimethion | 40% (w/v) EC (App-A) & 95% (w/w) Tech.(App-B) | Agricides (Pvt) Ltd., Karachi. | Cotton Jassids. | 04.08.2001 | 30.06.2004 |
| 432 | Cypermethrin | Insect. | Cheeta | 10ec,92%-t | FMC International Ltd., Lahore. | | | |
| 433 | Cypermethrin | Insect. | Peskil | 10% (w/w) EC (App-A) & 90% (w/w) Tech.(App-B) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Cotton jassids, Pink and Spotted bollworms. | 22.08.2001 | 30.06.2004 |
| 434 | Furathiocarb | Insect. | Promet | 400cs,85-t | Novartis (Pakistan) Ltd., Karachi. | | | |
| 435 | Deltamethrin+ Monocrotophos | Insect. | Tiger | 9+300 g/l (App.-A), Deltamethrin 98% Tech. (App.-B) & Monocrotophos 77% Tech. (App.-C) | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | Cotton jassids, thrips and bollworms. | 23.06.1998 | 30.06.2001 |
| 436 | Cinmethylin | Herb. | Argold | 100 g/l EC , 2.5 g/kg G (App.-A & B) & Tech. (App.-C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Rice - Weeds. | 28.02.2001 | 30.06.2004 |
| 438 | Chlorotoluron | Herb. | Agmol Combi | 60%WP & Tech.MCPA-Na97%,Chloroto.97%Min.(App-A,B) | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi. | Weeds in Wheat. | 22.04.2002 | 30.06.2004 |
| 439 | Metasulfuran methyl | Herb. | Ally | 20 DF (App.-A) & 93% Tech. (App.-B) | Du Pont Inc., Karachi. | Weeds in rice. | 04.03.1999 | 30.06.2001 |
| 440 | Glyphosate Ammonium | Herb. | Basta | 20 SL & 95-99% Tech. (App.A,B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Weeds in Sugarcane. | 05.03.2003 | 30.06.2004 |
| 441 | Bentazon | Herb. | Basagran | 48% (w/w) (App-A) & 96% (w/w) Tech.(App-B) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Weeds in rice. | 04.08.2001 | 30.06.2004 |

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|---|---|---|---|---|---|---|---|---|
| 442 | Isoproturon | Herb. | Matrix | 75% (w/w) WP & 90% (w/w) Tech. (App.-B) | Alintco (Pvt) Ltd., Karachi. | Weeds in Wheat. | 31.07.1998 | 30.06.2001 |
| 443 | Trifluralin | Herb. | Olitref | 48ec,95-t | United Distributor (Pvt) Ltd., Karachi. | | | |
| 444 | Fenoxaprop-P-ethyl | Herb. | Puma-S | 75 EW (69 g/l) & 93% Tech. (Appendix-A, B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | **Wheat:** Avena @ 250ml/acre. **Wheat:** Avena & Phalaris @ 500ml/acre | 22.02.2003 | 30.06.2004 |
| 445 | Flurochloridone | Herb. | Racer | 25 CS (Appendix-A) | ICI Pakistan (Pvt) Ltd., Lahore. | Weeds in Potato. | 01.07.1998 | 30.06.2001 |
| 446 | Piperphos+2,4-D | Herb. | Rilof-H | 500 EC (w/v) (App.-A) & Piperophos 94% Tech. (w/w) (App.-B) & 2,4-D 97% Tech. (w/w) (App.-C) | Novartis (Pakistan) Ltd., Karachi. | Weeds in rice. | 11.02.1999 | 30.06.2001 |
| 447 | Metribuzin | Herb. | Sencor | 250 EC (w/v) (App-A) & 90% Tech. (w/w) (App-B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Potato broad leaf weeds & grasses @ 250 g / acre. Wheat broad leaf weeds & grasses @ 80-100 g / acre. | 28.04.2003 | 30.06.2004 |
| 448 | Difenoconazole | Fung. | Score | 250 Ec&92-T | Novartis (Pakistan) Ltd., Karachi. | | | |
| 449 | Hexythiazox | Acari | Nisorum | 10% (w/w) WP (App-A) & 97 %Tech. (App-B) | Arysta Agro Pakistan (Pvt.) Ltd. Office No. 213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Cotton and apple mites. | 02.01.2002 | 30.06.2004 |
| 450 | Cypermethrin | Insect. | Meherthrin | 10% (w/v) EC (App.-A) & 90% (w/w) Tech. (App.-B) | Mehran Agro Chemical (Pvt) Ltd., Karachi. | Cotton bollworms. | 12.10.1994 | 30.06.1995 |
| 451 | Methamidophos | Insect. | Grip | 60% (w/v) SL (App-A) & 73% Tech. (w/w) (App-B) | United Distributor (Pvt) Ltd., Karachi. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | 30.06.2001 | 30.06.2004 |
| 452 | Dimethoate | Insect. | Aniron | 40% (w/v) EC (App-A) & 96% Tech. (App-B) | United Distributor (Pvt) Ltd., Karachi. | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | 30.06.2001 | 30.06.2004 |
| 455 | Copper Oxichloride | Fung. | Nucop | 50WP | Mehran Agro Chemical (Pvt) Ltd., Karachi. | | | |

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| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
|---|---|---|---|---|---|---|---|---|
| 456 | Cypermethrin+ Dimethoate | Insect. | Zapata | 40 EC (40 + 300% w/v) (App.-A) & Cypermethrin Tech. 90% (w/w) (App.-B) | GHR (Pvt) Ltd., Karachi. | Cotton Jassids, Whiteflies, Thrips and Bollworms. | 01.08.1998 | 30.06.2001 |
| 457 | Quinalphos | Insect. | Ekalux | 245fw | Novartis (Pakistan) Ltd., Karachi. | | | |
| 458 | Alphamethrin | Insect. | Fastac | 1 g/kg G (App.-A),Alpcyp. Tech.(App.-B) & 50 g/l EC (App.-C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | (i) 1 g/kg G: Rice - stem borer (ii) 50 g/l EC: Cotton - bollworms and Rice - stem borer & leaf-folder, gram pod borers & mango hoppers. | 26.06.2003 | 30.06.2004 |
| 459 | Thiodicarb | Insect. | Larvin | 375 Aqueous Flowable (w/w) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton Bollworms, Jassids & whitefly. | 22.02.2003 | 30.06.2004 |
| 462 | Gassyplure | Insect. | Nomate | | Sandoz (Pakistan) Ltd., Karachi. | | | |
| 464 | Pretilachlor | Herb. | Rifit | 500ec,95.5-t | Novartis (Pakistan) Ltd., Karachi. | | | |
| 465 | Diazinon | Insect. | Diazinon | 60% EC (App-A) 95% Tech. & 10% G (App-B & C) | Agricides (Pvt) Ltd., Karachi. | 1) Diazinon 60 EC - Okra Jassids & Aphids.<br>2) Diazinon 10 G - Rice Stem Borer. | 02.08.2001 | 30.06.2004 |
| 466 | Methamidophos | Insect. | Hasaran | 50% (w/w) EC (Appendix-A) | Chemgro International (Pvt.) Ltd., Lahore. | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | 18.05.2000 | 30.06.2001 |
| 466-b | Copper Oxichloride | Fung. | Copoxykill | 50WP | P.C.S.I.R., Karachi. | | | |
| 467 | Sulfur | Fung. | Edsul | 80% WP (w/w) (Appendix-A) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Powdery mildew on Apple, grapes, cucumber and melons. | 25.06.2003 | 30.06.2005 |
| 468 | Zinc Phosphide | Insect. | Zodfos | 80% | National Agro Trading (Pvt) Ltd., Karachi. | | | |
| 468 | Brodifacum | Insect. | Ratco | 0.005wb | National Agro Trading (Pvt) Ltd., Karachi. | | | |
| 469 | Zinc Phosphide | Insect | Ratokill | 80% Dry powder (Appendix-A) | Pakistan Council Scientific and Industries Research Laboratories Complex, Karachi. | Rodent control only. | | 30.06.2001 |
| 470 | Sulfur | Fung. | Sulfokill | 80% WP (Appendix-A) | Pakistan Council Scientific and Industries Research Laboratories Complex, Karachi. | Grapes powdery mildew. | 04.12.1998 | 30.06.2001 |

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| **Reg. No.** | **Product** | | | **Formulation** | **Name of Applicant** | **Uses** | **Registed Date** | **Receiving Date** |
| 471 | Sulfur | Fung. | Thiosulph | 80% WP (Appendix-A) | Archer Chemicals (Pvt.) Ltd., Lahore. | Powdery mildew on apples, grapes, cucumber and Melons. | 08.08.2000 | 30.06.2002 |
| 472 | Copper Oxichloride | Fung. | Perecopper | 50 WP (Appendix-A) | United Technova Cham. (Pvt) Ltd., Karachi. | Downy Mildew of Vegetables, Cucumber, Melon and Anthracnes of Mango, Early and Late Blight of Tomato and Potato. | 20.10.2000 | 30.06.2003 |
| 473 | Sulfur | Fung. | Siarkol Extra | 80% WP (Appendix-A) | Agricides (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Powdery mildews on apples, grapes, cucumber and melons. | 21.08.2003 | 30.06.2006 |
| 474 | Copper Oxichloride | Fung. | Cuprocaffar o | 50WP | Sehar Corporation, Karachi. | | | |
| 475 | Dicofol | Acari | Agrifol | 20% EC (App.-A) & 85% Tech. (App.-B) | Agricides (Pvt) Ltd., Karachi. | Red Spider Mites of Apples. | 04.07.2000 | 30.06.2003 |
| 476 | Fenthion | Insect. | Edfen | 50% EC (App.-A) & 80% Tech. (App.-B) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Onion thrips. | 07.08.2000 | 30.06.2003 |
| 476 | Fenthion | Insect. | Edfen | 50EC &95% Tech. | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | | | |
| 477 | Dimethoate | Insect. | Aragol | I-40 | Sehar Corporation, Karachi. | | | |
| 477 | Dimethoate | Insect. | Aragol | 40 EC | Sehar Corporation, Karachi. | | | |
| 478 | Bradiofaium | Rod. | Ratco | 0.005% Wax Block (App.-A) | Data Universal (Pvt) Ltd., Karachi. | Rats in wheat fields. | 13.07.1998 | 30.06.2001 |
| 479 | Nimbokill | Insect. | Nimbokill | 60% EC (w/v) | Grain Storage Research Laboralies Pakistan Agri Research Council Karachi, Unitersity, Karachi. | Cotton whitefly, thrips, jassids and rice leaffolder and stemborers. | 30.12.1996 | 30.06.1999 |
| 479 | Azadirachtrin | Insect. | Nimbokill | 60 EC | Pakistan Agriculture Research Council, Karachi. | | | |
| 480 | Trifluralin | Herb. | Ipiflour | 48%EC (w/v) & 96% (w/w) Tech. (Appendix-A, B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Grasses, sedges and broad-leafed weeds in cotton. | 22.02.2003 | 30.06.2005 |
| 481 | Metalochlor | Herb. | Dual | 500 g/l EC (App-A) & Tech. 95 % (w/w) (App-B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Broad - leafed weeds, grasses and sedges in cotton and sunflower. | 15.06.2002 | 30.06.2005 |
| 482 | Terbutryn | Herb. | Igran | 500 g/l FW (App.-A) & 98% (w/w) (App.-B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Broad - leaved weeds in potato, sunflower and peas. | 15.06.2002 | 30.06.2005 |

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| 483 | Flufenoxuron | Insect. | Casfas | 40/20 g/l EC (App.-A) &Tech. Fluf. & AlCyp. (App.- B&C) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton - Jassids, Whitefly, thrips & bollworms. | 16.07.2002 | 30.06.2005 |
| 484 | Deltamethrin + Endosulfan | Insect. | Dectran | 328 g/l EC & Delta. 98% (w/w), Endo. 94% (Appendix-A,B&C) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton Jassids, whitefly, Thrips and Bollworms. | 19.02.2003 | 30.06.2005 |
| 485 | Deltamethrin+ Buprofezin | Insect. | Dadeci | | Aventis CropScience Pakistan (Pvt.) Ltd. Korangi Industrial Area, Karachi-74900 | Cotton Jassids, whitefly, Thrips and Bollworms. | 25.03.2000 | 30.06.2002 |
| 486 | Propamacarb-Hydrochloride | Fung. | Previcur | 607 (66.5% w/w) SL (App.-A) | Bayer DAS (Pvt.) Ltd. 18 / III, Flench Street, Off Bleak House Road, Civil Lines, Karachi. | Downy mildew of musk melon. | 04.02.2003 | 30.06.2005 |
| 487 | Chlorfenapyr | Insect. | Pirate | 360 g/l SC (App.-A) & Tech. 94% (App. -B) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Cotton - Jassids, thrips, Heliothis bollworm & mites. | 16.07.2002 | 30.06.2005 |
| 488 | Fipronil | Insect. | Regent | 6.25 ULV (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Locust. | 07.06.2003 | 30.06.2005 |
| 489 | Indoxacarb | Insect. | Steward | 150 g/l SC (Appendix-A) | DuPont Pakisan 2nd Floor, Bahria Complex-1, M.T. Khan Road, Karachi. | Cotton Spotted, Pink and Heliothis bollworms. | | 30.06.2001 |
| 490 | Azadirachtrin | Insect. | Biosal | 0.32% (w/v) EC, 0.05% G & 1.3% (w/w) Min. Tech. (Appendix - A, B, C, D & E) | Universal Agro Chemical (Pvt) Ltd. S-94, S.I.T.E, Karachi. | 0.32% EC: Cotton Jassids, whitefly and thrips and rice leafhoppers. 0.05% G: Rice borers and rice leaf-folder; cotton whitefly; maize borers; lady's finger white fly; cabbage butterfly, and tobacco cutworm. | 27.05.2003 | 30.06.2005 |
| 491 | Toflubenzuron | Insect. | Nomolt | 50 g/l ULV (App. -A) & Tech. 95% (App. -B) | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Desert Locust. | 16.07.2002 | 30.06.2005 |
| 492 | Cypermethrin | Insect. | Kapadin-C | 10% (w/v) EC (Appendix-A) | S. Essa (Pvt) Ltd., Karachi. | Cotton, Pink bollworm, 250 ml / acre Cotton, spotted bollworm, 250 ml / acre | 13.09.1999 | 30.06.2002 |
| 493 | Alpha-Cypermethrin | Insect. | Fastac | 40 g/l ULV & 93% Tech. | BASF Chemicals & Polymers Pakistan (Pvt) Ltd. 46-A, Block-6, P.E.C.H.S., Karachi. | Desert Locust. | 06.09.2002 | 30.06.2005 |
| 494 | Hexacunozole | Fung. | Anvil | 5 SC(w/v) (App-A) & Tech. 85% (w/w) (App-B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Mango powdery mildew. | 26.06.2002 | 30.06.2005 |

| Form - 1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Reg. No.** | **Product** | | | **Formulation** | **Name of Applicant** | **Uses** | **Registed Date** | **Receiving Date** |
| 495 | Lufenuron | Insect. | Match | 50 g/l EC (App-A) & 92 % (w/w) Tech. (App- B) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton Heliothis & armyworm; cauliflower Diamond-back moth and cabbage butterfly, apple codling moth and Heliothis on tomato & potato. | 16.07.2002 | 30.06.2005 |
| 496 | Thiamethoxam | Insect. | Actara | 70 WS (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton jassids & thrips & whitefly & maize shootfly as seed treatment. | 25.04.2003 | 02.05.2006 |
| 497 | Thiamethoxam | Insect. | Actara | 25 WG (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Cotton jassids & thrips, potato and okra jassids, tobacco aphids, mango hoppers and rice whitebacked plant hopper. | 10.07.2003 | 02.05.2006 |
| 498 | Spray Oil | Insect. | Foliol | 84% (w/v) EC (Appendix-A) | Global Petrochemicals (Pvt) Ltd. 118/9, hizer Park, Mumtaz Street, Habibullah Road, Lahore. | Apple san jose scales. | 26.06.2003 | 25.06.2006 |
| 499 | Zinc Phosphide | Insect. | Ratophos | 80% WP | R. A. Associate (Pvt.) Ltd., CC-88, Block-5, Street-5, Sector 14-B, Maria Luxury Apartments, North Karachi. | Rodents Only | 14.02.2001 | 30.06.2004 |
| 500 | Lambda Cyhalothrin | Insect. | Karate | 2.5% SC (w/v) | ICI Pakistan (Pvt) Ltd. ICI House, 5 West Wharf, P. O. Box, No. 4731, Karachi. | Cotton Jassids, Whitefly, Spotted and Heliothis bollworms. | 18.08.2001 | 30.06.2004 |
| 500 | Pretilachlor | Herb. | Rifit | 500 EC (w/v) (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Weeds in rice. | 22.08.2001 | 30.06.2004 |
| 501 | Sulfentrazone | | Authority | 4 F (w/v) (Appendix-A) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | | | |
| 502 | Copper Oxychloride | Fung. | Samaroxy | 50% WP (w/w) | Chem Agro International H. No 76, Str. # 24, Sector F-10/1, Islamabad. | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight,1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | 13.03.2002 | 30.06.2005 |
| 503 | Copper hydrooxide | Fung. | Samar | 77% WP (w/w) | Chem Agro International H. No 76, Str. # 24, Sector F-10/1, Islamabad. | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight,1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | 13.03.2002 | 30.06.2005 |
| 504 | Sulfur | Fung. | Samarvit | 80% WP (w/w) (Appendix-A) | Chem Agro International H. No 76, Str. # 24, Sector F-10/1, Islamabad. | Powdery mildew on appes, grapes, cucumber & melons. | 03.02.2003 | 30.06.2005 |

## Form - 1

| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
|---|---|---|---|---|---|---|---|---|
| 505 | Deltamethrin | Insect. | Decis Super | 100 EC (100 g/l) & Delta. 98% (w/w) Tech. Miin. (Appendix-.A, B & C) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton Spotted, Pink and Heliothis bollworms. | 25.01.2003 | 30.06.2004 |
| 506 | Deltamethrin | Insect. | Decis Tablet | 25% Tablet (250 g/kg) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton Spotted, Pink and Heliothis bollworms. | 05.03.2003 | 30.06.2004 |
| 507 | (Isoxaflutole + Atrazine) | | Merlin Extra | 550 SC (Isoxaflutole & Atrazine) & 95% Tech. (w/w) (App.-A,B&C) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Pre & Post emergence grasses and broad-leaf weeds in Maize; broad-leaf weeds and grasses in sugarcane. | 31.07.2003 | 30.06.2004 |
| 508 | Aluminium Phosphide | Fum. | Ragto-AP | 56 (w/w) Tablets (Appendix-A) | R. A. Associate (Pvt.) Ltd., CC-88, Block-5, Street-5, Sector 14-B, Maria Luxury Apartments, North Karachi. | | | |
| 509 | Aluminium Phosphide | Fum. | Agriphos | 56 (w/w) Tablets (Appendix-A) | Agricides (Pvt) Ltd., Karachi. | | | |
| 510 | Aluminium Phosphide | Fum. | Fumikill | 56 (w/w) Tablets (Appendix-A) | S. Essa (Pvt) Ltd., Karachi. | | | |
| 511 | Permethrin | Insect. | Pounce | 1.5% G (Appendix-A) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | | | |
| 512 | Imidachloprid + Cyfluthrin | | Admire Supra | 50 (w/v) EC (25% w/v + 25% w/v) & Tech. (Imidacloprid 96% w/w, Cyfluthrin 92% w/w) (Appendix-A, B) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton thrips, jassids, whitefly, Heliothis and spotted bollworm. | 02.05.2003 | 30.06.2004 |
| 513 | Oxadiragyl | | Topstar | 80 WG (w/w) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Pre-emergence grasses broad-leaved weeds and sedges in rice; broad-leaved weeds and grasses in potatoes and onions. | 30.07.2003 | 30.06.2004 |
| 514 | Calypso | | Thiacloprid | 240 SC (w/v) (Appendix-A) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton whitefly (nymph & adults), jassids and thrips. | 22.05.2003 | 30.06.2005 |
| 515 | Beta-Cyfluthrin + Chlorpyrifos | | Bulldock | 262.5 EC (w/v) & Tech. (Beta-Cyfluthrin 96.5% Min. & Chlorpyrifos 97% (w/w) (App.-A, B & C) | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900 | Cotton spotted bollworms and Heliothis | 25.06.2003 | 30.06.2005 |
| 516 | Carbosulfan | | ADVANTAGE | 5% G (w/w) (App.-A) & 86.5 (w/w) (App.-B) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Maize stem borers. | 11.07.2003 | 30.06.205 |
| 517 | Emmamectin Benzoate | | TIMER | 1.9% EC (w/v) (App.-A) & 90% (w/w) Tech. (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton Heliothis. | 20.06.2003 | 30.06.2005 |

## Form - 1

| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
|---|---|---|---|---|---|---|---|---|
| 518 | Deltamethrin | | LOCIS | 1.25% ULV (App.-A) & 98% Tech. (w/w) Min. (App.-B, C) | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Desert Locust. | 25.06.2003 | 24.06.2006 |
| 519 | Lambda - Cyhalothrin | | BOXER | 2.5% EC (w/v) (App.-A) & 95% (w/w) Tech. Min. (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton Spotted Bollworm. | 26.06.2003 | 30.06.2005 |
| 520 | Lambda - Cyhalothrin | | BOXER | 2.5% EC (w/v) (App.-A) & 95% (w/w) Tech. Min. (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton Spotted Bollworm. | 26.06.2003 | 30.06.2005 |
| 521 | Acetamiprid | | RANI | 20% SL (w/v) (App.-A) & 90% Tech. (w/w) (App.-B) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton jassids, thrips and whitefly. | 25.06.2003 | 30.06.2005 |
| 522 | Bifenthrin | | RESHAM | 10% EC (w/v) (App.-A) & 96% (w/w) Tech. (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton Spotted Bollworm. | 25.06.2003 | 30.06.2005 |
| 523 | Deltamethrin | | LEOPARD | 2.5% EC (w/v) (App.-A) & 98% (w/w) Tech. (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton spotted bollworm. | 25.06.2003 | 30.06.2005 |
| 524 | Profenofos | | CRACKER | 40% EC (w/v) (App.-A) & 85% (w/w) Tech. (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton Heliothis. | 25.06.2003 | 30.06.2005 |
| 525 | Cartap Hydrochloride | | PILOT | 4% (w/w) G (App.-A) & 98% Tech. (w/w) Min. (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Rice borers. | 25.06.2003 | 30.06.2005 |
| 526 | Imidacloprid | | CROWN | 200 SL (w/v) (App.-A) & 95% Tech. (w/w) (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton jassids, thrips and whitefly. | 25.06.2003 | 30.06.2005 |
| 527 | S-metolachlor | | DUAL GOLD | 960 EC (w/v) (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | grasses, sedges and broad leaved weeds in sugar beet; cauliflower, maize, sugarcane and peas; okra; sunflower; onions; potatoes, and cotton. | 27.06.2003 | 30.06.2005 |
| 528 | Clodinafop - Propargyl | | TOPIK | 15 WP (w/w) (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Avena fatua, phalaris minor, Fox-tail, Poa sp. and other monocot weeds in wheat. | 01.07.2003 | 30.06.2006 |
| 529 | S-Metolachlor + Atrazine | | PRIMEXTRA GOLD | 720 SC (w/v) (Appendix-A) | Syngenta Pakistan Ltd. S - 50, S.I.T.E., Hawkes Bay Road, Karachi. | Grasses, Sedges and Broad-Leaved Weeds in Maize. | 01.07.2003 | 30.06.2006 |

| Form - 1 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Reg. No. | Product | | | Formulation | Name of Applicant | Uses | Registed Date | Receiving Date |
| 530 | Carbofuran | | FURAN | 3% G (w/w) (App.-A) & 97% Tech. (w/w) (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Maize borers. | 01.07.2003 | 30.06.2006 |
| 531 | Carbendazim | | SHINCAR | 50% SC (w/v) (Appendix-A) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Mango powdery mildew, and apples powdery mildew. | 01.07.2003 | 30.06.2006 |
| 532 | Bifenthrin + Abamectin | | NOVASTAR | 56 EC (w/v) (Appendix-A) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Potato jassids. | 01.07.2003 | 30.06.2006 |
| 533 | Acephate | | ORTHENE PELLET | 97% (w/w) (Appendix-A) | FMC United (Pvt) Ltd. 61-A, Main Gulberg, Lahore. | Cotton Jassids, Thrips. | 10.07.2003 | 30.06.2006 |
| 534 | Imidacloprid | | CROWN | 70 WS (w/w) (App.-A) & 95% (w/w) Tech. (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton jassids, thrips and whitefly and maize shoot fly. | 10.07.2003 | 30.06.2006 |
| 535 | Carbendazim | | BAVISTIN | 50% (w/w) DF (Appendix-A) | FMC United (Private) Limited 61-A Main Gulberg, Lahore. | Mango anthracnose and powdery mildew, and apples powdery mildew. | 30.07.2003 | 30.06.2003 |
| 536 | Acetochlor | | SHINTACHLOR | 50% EC (w/v) (App.-A) & 90% (w/w) Tech. Min. (App.-B, C) | FMC United (Private) Limited 61-A Main Gulberg, Lahore. | Broad-leaves weeds, grasses and sedges in rice. | 30.07.2003 | 30.06.2003 |
| 537 | Pendimethalin | | TOP - 330 | 33% EC (w/v) (App.-A) & 90.5% (w/w) Tech. (App.-B, C) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Grasses, sedges and broad-leaved weeds in cotton. | 31.07.2003 | 31-06-2006 |
| 538 | Imidacloprid | | LAUNCHER | 20% SL (w/v) (Appendix-A) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton jassids, thrips and whitefly. | 02.08.2003 | 30.06.2006 |
| 539 | Imidacloprid | | LAUNCHER | 70% WS (w/w) (Appendix-A) | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Cotton jassids, thrips and whitefly and maize shoot fly. | 02.08.2003 | 30.06.2006 |
| 540 | Cypermethrin | | SHERPA | 25% EC (w/v) (Appendix-A) | Bayer CropScience (Private) Limited, Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900. | Cotton Spotted bollworm. | 05.08.2003 | 30.06.2006 |

## 15.6 Company Registration under Form 16

| List of Companies Registration Form-16 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 2 | Welgreen Chemical (Pvt.) Ltd., 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 10.04.2001 | 05.05.2002 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Taiwan | RENEWAL/ REVISED | II | Insect. |
| 8 | A.G. Services & Supplies | Methamidophos | 60 SL | 28.04.1993 | 21.03.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 20 | Nafees (Pvt.) Ltd, 18-H, Vehari. | Methamidophos | 60 SL | 25.05.1993 | 08.04.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 21 | S. ESSA<br>120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Cypermethrin | 10% EC (w/w) (Appendix-A) | 07.05.2002 | 24.05.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.K | Renewal | II | Insect. |
| 23 | Welgreen Chemical (Pvt.) Ltd, Lahore | Cypermethrin | 10EC | 25.05.1993 | 21.03.1993 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Belgium | | II | Insect. |
| 24 | Welgreen Chemical (Pvt.) Ltd, Lahore | Endosulfan | 35 EC | 25.05.1993 | 04.04.1993 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Belgium | | II | Insect. |
| 26 | S. ESSA<br>120 Liaquat Market, M.A. Jinnah Road,<br>Karachi 74000. | Methamidophos | 60% SL (w/v) (Appendix-A) | 06.05.2002 | 12.05.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | U.K | Renewal | Ib | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 27 | S.Essa (Pvt.) Ltd, Karachi. | Endosulfan | 35 EC | 25.05.1993 | 15.04.1993 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.K | | II | Insect. |
| 28 | A.G. Services & Supplies | Cypermethrin | 10EC | 26.05.1993 | 11.04.1993 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | England | | II | Insect. |
| 31 | Crop Care (Pvt) Lahore | Methamidophos | 60 SL | 28.06.1993 | 08.05.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 33 | Camco International | Dimethoate | 40 EC | 22.07.1993 | 24.05.1993 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | China | | II | Insect. |
| 34 | Edgro (Pvt.) Ltd., Marine Trade Centre,<br>BC - 3, Kehkashan, Block - 9,<br>Clifton, Karachi - 75600. | Diazinon | 90% ULV (Appendix-A) | 30.07.2002 | 21.07.2005 | Paddy Borers and Sugarcane Pyrilla. | Indonesia | RENEWAL | II | Insect. |
| 35 | S. Essa (Pvt.) Ltd.<br>120 Liaquat Market, M. A. Jinnah Road,Karachi. | Fenvalerate | 20% EC (w/v) (Appendix-A) | 18.11.2002 | 20.07.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.K | Renewal | II | Insect. |
| 37 | Welgreen Chemical (Pvt.) Ltd.<br>202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Benomyl | 50% WP (w/w) (Appendix-A) | 23.10.2002 | 27.05.2005 | Seed dressing fungicide & melon powdery mildew. | Taiwan | Renewal | III | Fung. |
| 39 | Camco International | Cypermethrin | 10 EC | 31.07.1993 | 24.05.1993 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 41 | Agricides (Pvt) Ltd.<br>Marine Trade Centre, BC-3, Kehkashan, Block-9, Clifton, Karachi. | Cypermethrin | 5% EC (w/v) (Appendix-A) | 16.08.2002 | 01.08.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Argentina | RENEWAL | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 42 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Cypermethrin | 10 EC | 09.08.1993 | 19.06.1993 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.A.E | | II | Insect. |
| 43 | Agricides (Pvt) Ltd. Marine Trade Centre, BC-3, Kehkashan, Block-9, Clifton, Karachi. | Cypermethrin | 10% EC (w/v) (Appendix-A) | 17.08.2002 | 07.08.2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Argentina | RENEWAL/REVISED | II | Insect. |
| 44 | United Technova Cham Karachi | Cypermethrin | 10EC | 09.08.1993 | 09.06.1993 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.K | | II | Insect. |
| 46 | Granulars (Pvt) Ltd, Karachi | Fenitrothion | 80 L | 15.08.1993 | 04.05.1993 | Sucking Insect of Cotton; Sugarcane and Paddy Borers. | Japan | | II | Insect. |
| 47 | Edgro (Pvt.) Ltd, Karachi. | Malathion | 95 ULV | 15.08.1993 | 21.06.1993 | Paddy leaf hoppers, mango hoppers, mealy bugs and tobacco aphids. | China | | III | Insect. |
| 49 | Camco International | Monocrotophos | 40 WSC | 21.08.1993 | 24.05.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |
| 59 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Cypermethrin | 10 EC | 18.10.1993 | 19.07.1993 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 62 | Welgreen Chemical (Pvt.) Ltd, Lahore | Isoproturon | 50 WP | 21.10.1993 | 15.09.1993 | Weeds in Wheat. | China | | III | Herb. |
| 64 | S. Essa (Pvt.) Ltd. 120 Liaquat Market, M. A. Jinnah Road, Karachi. | Isoproturon | 50% (w/v) Flowable (Appendix-A) | 18.11.2002 | 23.10.2005 | Weeds in Wheat. | U.K | Renewal | III | Herb. |
| 65 | S. Essa (Pvt.) Ltd. 120 Liaquat Market, M. A. Jinnah Road, Karachi. | Butachlor | 60% EC (w/v) (Appendix-A) | 30.11.2002 | 23.10.2005 | Weed control in Paddy. | U.K | Renewal | III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 70 | Pakistan Agrochemicals | Cypermethrin | 10 EC | 02.11.1993 | 14.07.1993 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Africa | | II | Insect. |
| 71 | Crop Care (Pvt) Lahore | Monocrotophos | 40 WSC | 03.11.1993 | 16.06.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Taiwan | | Ib | Insect. |
| 76 | Universal Agro Chemicals (Pvt) Ltd.<br>E/ 12, S.I.T.E. Karachi. | Methamidophos | 60 SL | 10.11.1993 | 19.06.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 77 | EPAIDCO (Pvt.) Ltd.<br>111-113 Trade Tower,<br>Abdullah Haroon<br>Road, Karachi. | Diazinon | 90% ULV (Appendix-A) | 30.11.2002 | 21.11.2005 | Paddy Borers and Sugarcane Pyrilla. | Japan | Renewal | II | Insect. |
| 78 | Edgro (Pvt.) Ltd.<br>Marine Trade Centre, BC-3,<br>Kehkashan, Block-9, Clifton,<br>Karachi. | Butachlor | 60% EC (w/v) (Appendix-A) | 25.06.2003 | 30.11.2005 | Weed control in Paddy. | China | Renewal / Revised | III | Herb. |
| 82 | Agricides (Pvt.) Ltd.<br>Marine Trade Centre, BC-3,<br>Kehkashan, Block-9, Clifton,<br>Karachi. | Copper Oxychloride | 50% WP (w/w) (Appendix-A) | 04.02.2003 | 28.12.2005 | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight, 1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | Romania | Renewal | III | Fung. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 83 | Edgro (Pvt.) Ltd, Karachi. | Isoproturon | 75 | 29.12.1993 | 28.04.1993 | Weeds in Wheat. | China | | III | Herb. |
| 87 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Methamidophos | 60% (w/v) SL (Appendix-A) | 09.04.2003 | 15.03.2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal | Ib | Insect. |
| 88 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Cypermethrin | 10% EC (w/v) (Appendix-A) | 16.01.2003 | 31.0.2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal | II | Insect. |
| 95 | International Enterprises | Endosulfan | 35 EC | 15.02.1994 | 21.10.1993 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |
| 96 | International Enterprises | Methamidophos | 60 SL | 15.02.1994 | 21.10.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 97 | International Enterprises | Monocrotophos | 40 WSC | 15.02.1994 | 21.10.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 102 | Pak Pesticide (Pvt) Ltd. Suit No. 12, Irfan Centre, 34-Civic Centre, New Garden Town, Lahore. | Endosulfan | 35 EC | 16.02.1994 | 28.09.1993 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Korea | | II | Insect. |
| 103 | International Enterprises | Cypermethrin | 10 EC | 16.02.1994 | 21.10.1993 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 104 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Benomyl | 50 WP | 16.02.1994 | 03.10.1993 | Seed dressing fungicide & melon powdery mildew. | Hungry | | III | Fung. |
| 106 | National Insecticides Company (Pvt.) Ltd. Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Isoproturon | 500 FL (516 g/l) (Appendix-A) | 04.02.2003 | 22.02.2006 | Weeds in Wheat. | Netherland | Renewal | III | Herb. |
| 107 | National Insecticides Company (Pvt.) Ltd. Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 19.02.2003 | 22.02.2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Netherland | Renewal | II | Insect. |
| 109 | S. Essa (Pvt.) Ltd. 120 Liaquat Market, M. A. Jinnah Road, Karachi. | Dimethoate | 40% EC (w/v) (Appendix-A) | 21.03.2003 | 09.03.2006 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | U.K | Renewal | II | Insect. |
| 111 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Cypermethrin | 10 EC | 31.03.1994 | 03.10.1993 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Jordan | | II | Insect. |
| 112 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Methamidophos | 60 SL | 31.03.1994 | 07.11.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Taiwan | | Ib | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 117 | Pak Pesticide (Pvt) Ltd. Suit No. 12, Irfan Centre, 34-Civic Centre, New Garden Town, Lahore. | Cypermethrin | 10% EC (w/w) (Appendix-A) | 07.02.2002 | 30.03.2003 | Cotton Pink Bollworm 250 ml/acre<br>Cotton Spotted Bollworm 250 ml/acre. | China | RENEWAL/RE VISED | II | Insect. |
| 122 | People Farm Services | Cypermethrin | 10 EC | 11.04.1994 | 07.06.1993 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Spain | | II | Insect. |
| 123 | Al-Muqeet International | Methamidophos | 60 SL | 20.04.1994 | 25.05.1993 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 125 | Al-Muqeet International | Cypermethrin | 10 EC | 20.04.1994 | 25.05.1993 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 126 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Endosulfan | 35 EC | 24.04.1994 | 06.12.1994 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.A.E | | II | Insect. |
| 127 | Nafees (Pvt.) Ltd. 18-H, Vehari. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 22.05.2003 | 17.05.2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Cyprus | Renewal | II | Insect. |
| 128 | Nafees (Pvt.) Ltd. 18-H, Vehari. | Endosulfan | 35% (w/v) EC (Appendix-A) | 22.05.2003 | 17.05.2006 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Cyprus | Renewal | II | Insect. |
| 132 | Global Agro Services | Dimethoate | 40 EC | 19.05.1994 | 01.02.1994 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 134 | Crop Care (Pvt) Lahore | Endosulfan | 35 EC | 30.05.1994 | 02.03.1994 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Malaysia | | II | Insect. |
| 138 | Agri Gold (Pvt.) Ltd, Bahawalpur | Fenvalerate | 20 EC | 08.06.1994 | 20.02.1994 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 142 | Universal Agro Chemicals (Pvt) Ltd.<br>E/ 12, S.I.T.E. Karachi. | Malathion | 2.5 ULV | 08.08.1994 | 02.03.1994 | Paddy leaf hoppers, mango hoppers, mealy bugs and tobacco aphids. | Columbia | | III | Insect. |
| 143 | Universal Agro Chemicals (Pvt) Ltd.<br>E/ 12, S.I.T.E. Karachi. | Fenvalerate | 20EC | 18.08.1994 | 30.12.1993 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Korea | | II | Insect. |
| 144 | International Enterprises, Marine Trade Centre, BC - 3, Kahkashan Block - 9, Clifton, Karachi - 75600. | Fenitrothion | 98% ULV (Appendix-A) | 26.05.2001 | 24.08.2003 | Sucking Insect of Cotton; Sugarcane and Paddy Borers. | China | RENEWAL/REVISED | II | Insect. |
| 145 | Marvi Agrochem (Pvt)Ltd | Methamidophos | 60 SL | 17.10.1994 | 07.07.1994 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Malaysia | | Ib | Insect. |
| 150 | Marvi Agrochem (Pvt)Ltd | Cypermethrin | 10 EC | 23.10.1994 | 07.07.1994 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 151 | Spring Field (Pvt)Ltd | Monocrotophos | 40 WSC | 03.11.1994 | 26.01.1994 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 152 | Al-Muqeet International | Cypermethrin | 10 EC | 03.11.1994 | 28.02.1994 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Korea | | II | Insect. |
| 153 | Noori Trading Corporation | Cypermethrin | 10EC | 03.11.1994 | 02.03.1994 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 154 | Crop Care (Pvt) Lahore | Butachlor | 60 EC | 07.09.1994 | 30.03.1994 | Weed control in Paddy. | Taiwan | | III | Herb. |
| 155 | National Agro Trading | Benomyl | 50 WP | 03.11.1994 | 25.10.1993 | Seed dressing fungicide & melon powdery mildew. | China | | III | Fung. |
| 156 | Asiatic Pesticide | Cypermethrin | 10EC | 20.11.1994 | 19.02.1994 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 157 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Endosulfan | 35% EC (w/w) (Appendix-A) | 02.01.2002 | 22.11.2003 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Korea | Revised | II | Insect. |
| 158 | Universal Agro Chemicals (Pvt) Ltd.<br>E/ 12, S.I.T.E. Karachi. | Endosulfan | 35 EC | 30.11.1994 | 30.05.1994 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Korea | | II | Insect. |
| 159 | Crop Care (Pvt) Lahore | Cypermethrin | 10 EC | 19.12.1994 | 28.03.1994 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Taiwan | | II | Insect. |
| 163 | International Enterprises, Marine Trade Centre, BC - 3, Kahkashan Block - 9, Clifton, Karachi - 75600. | Dimethoate | 40% EC (W/W) (Appendix-A) | 16.02.2001 | 01.07.2004 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | China | RENEWAL/REVISED | II | Insect. |
| 164 | Fast Agro (Pvt)Ltd | Methamidophos | 60 SL | 09.01.1995 | 23.02.1994 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 165 | Jugnu Agrotech (Pvt.) Ltd., Room No. 4, 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Cypermethrin | 10% (w/w) EC (Appendix-A) | 22.06.2001 | 08.01.2004 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | RENEWAL/REVISED | II | Insect. |
| 166 | Jugnu Agrotech (Pvt.) Ltd., Room No. 4, 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Endosulfan | 35% (w/w) EC (Appendix-A) | 07.06.2001 | 08.01.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Korea | RENEWAL/REVISED | II | Insect. |
| 168 | Shani Agrochemicals | Methamidophos | 60 SL | 13.02.1995 | 08.06.1994 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 175 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Dimethoate | 40% (w/w) EC (Appendix-A) | 10.05.2001 | 26.03.2004 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | China | RENEWAL | II | Insect. |
| 177 | Universal Agro Chemicals (Pvt) Ltd.<br>E/ 12, S.I.T.E. Karachi. | Copper Oxychloride | 50 WP | 27.03.1995 | 19.02.1994 | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight, 1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | Columbia | | III | Fung. |
| 178 | Universal Agro Chemicals (Pvt) Ltd.<br>E/ 12, S.I.T.E. Karachi. | Butachlor | 60 EC | 30.03.1995 | 25.10.1994 | Weed control in Paddy. | Taiwan | | III | Herb. |
| 179 | Chemilink (Pvt)Ltd | Endosulfan | 35 EC | 10.04.1995 | 02.03.1994 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Taiwan | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 181 | Pakistan Agrochemicals | Endosulfan | 35 EC | 14.05.1995 | 26.02.1995 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Africa | | II | Insect. |
| 182 | Pakistan Agrochemicals | Endosulfan | 35 EC | 14.05.1995 | 27.02.1995 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.A.E | | II | Insect. |
| 183 | Welcon Chemicals (Pvt.) Ltd. Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Endosulfan | 35% EC (w/v) (Appendix-A) | 04.11.2002 | 16.05.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | Renewal / Revised | II | Insect. |
| 184 | Chemilink (Pvt)Ltd | Cypermethrin | 10EC | 18.05.1995 | 02.03.1994 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Taiwan | | II | Insect. |
| 185 | Excellsior Inter. (Pvt)Ltd, Lahore | Cypermethrin | 10 EC | 24.05.1995 | 13.03.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 186 | Biochem (Pvt)Ltd | Cypermethrin | 5 EC | 25.05.1995 | 23.01.1995 | Cotton Pink Bollworm 500 ml/acre,<br>Cotton Spotted Bollworm 500 ml/acre. | Belgium | | II | Insect. |
| 187 | Quality International Traders (Pvt.) Ltd.<br>9 - Light Industrial Area, Model Town, Bahawalpur. | Endosulfan | 35% (w/w) EC (Appendix-A) | 21.05.2001 | 24.05.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Greece | RENEWAL/REVISED | II | Insect. |
| 188 | Quality International Traders (Pvt.) Ltd.<br>9 - Light Industrial Area, Model Town, Bahawalpur. | Endosulfan | 35% (w/w) EC (Appendix-A) | 21.05.2001 | 24.05.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.K | RENEWAL/REVISED | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 189 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Cypermethrin | 10 EC | 25.05.1995 | 28.02.1995 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.K | | II | Insect. |
| 190 | Farm Shield (Pvt)Ltd | Cypermethrin | 10EC | 25.05.1995 | 19.03.1995 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 191 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Endosulfan | 35% (w/w) EC (Appendix-A) | 21.05.2001 | 24.05.2004 | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre | China | RENEWAL/RE VISED | II | Insect. |
| 192 | Expert Agricare International | Endosulfan | 35 EC | 25.05.1995 | 09.02.1995 | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre | Malaysia | | II | Insect. |
| 193 | Shani Agro Marketing | Endosulfan | 35 EC | 25.05.1995 | 23.01.1995 | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |
| 195 | World Wide Agrochemicals | Cypermethrin | 10 EC | 30.05.1995 | 10.01.1995 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 196 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Cypermethrin | 10% (w/w) EC (Appendix-A) | 19.05.2001 | 29.05.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.K | RENEWAL/RE VISED | II | Insect. |
| 197 | Mehdi (Pvt.) Ltd., Agro Division, Sadaf Palace, Aprt.G-2, Supariwala St., Garden East, Karachi. | Methamidophos | 60% (w/v) SL (Appendix-A) | 26.04.2001 | 29.05.2004 | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | China | RENEWAL/RE VISED | Ib | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 198 | Morgan Chemicals | Endosulfan | 35 EC | 30.05.1995 | 28.12.1994 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |
| 199 | R.B. Avari Enterprises,Karachi | Endosulfan | 35 EC | 30.05.1995 | 09.02.1995 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.A.E | | II | Insect. |
| 200 | National Agro Trading | Cypermethrin | 10 EC | 30.05.1995 | 04.01.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 202 | Farm Shield (Pvt)Ltd | Monocrotophos | 40 WSC | 07.06.1995 | 19.03.1995 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Malaysia | | Ib | Insect. |
| 203 | Expert Agricare International | Methamidophos | 60 SL | 07.06.1995 | 09.02.1995 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Malaysia | | Ib | Insect. |
| 206 | World Wide Agrochemicals | Isoproturon | 50 WP | 12.06.1995 | 10.01.1995 | Weeds in Wheat. | China | | III | Herb. |
| 208 | Excellsior Inter. (Pvt)Ltd, Lahore | Fenvalerate | 20 EC | 14.06.1995 | 13.03.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 209 | Excellsior Inter. (Pvt)Ltd, Lahore | Isoproturon | 50 WP | 14.06.1995 | 13.03.1995 | Weeds in Wheat. | China | | III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 214 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Cypermethrin | 10% (w/w) EC (App.-A) & 92.5% Tech. (w/w) (App.-B) | 29.08.2001 | 17.06.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Greece | RENEWAL/REVISED | II | Insect. |
| 216 | Satoz Agri (Pvt.) Limited, 34,Club Road, Vehari. | Fenvalerate | 20EC | 28.06.1995 | 23.11.1994 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 217 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Monocrotophos | 40% WSC (w/v) (Appendix-A) | 30.06.2001 | 02.07.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Greece | Renewal | Ib | Insect. |
| 218 | Morgan Chemicals | Monocrotophos | 40 WSC | 03.07.1995 | 22.12.1994 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |
| 219 | Morgan Chemicals 2/FI, Shahnaz Arcade, 158 B.Y.C.H.S, Shaheed-e-Millat Road, Karachi. | Cypermethrin | 10% EC (w/w) (Appendix-A) | 24.07.2001 | 02.07.2004 | Cotton Pink Bollworm 250 ml/acre<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 221 | R.B. Avari Enterprises,Karachi | Cypermethrin | 10 EC | 03.07.1995 | 09.02.1995 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 227 | Forward Agro (Pvt)Ltd | Cypermethrin | 10 EC | 11.07.1995 | 19.01.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 230 | Agricides (Pvt) Ltd.<br>Marine Trade Centre, BC-3,<br>Kehkashan, Block-9, Clifton,<br>Karachi. | Endosulfan | 35% EC (w/w)<br>(Appendix-A) | 03.08.2001 | 15.07.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Korea | Renewal / Revised | II | Insect. |
| 231 | Morgan Chemicals 2/FI,<br>Shahnaz Arcade, 158<br>B.Y.C.H.S, Shaheed-e-Millat<br>Road, Karachi. | Dimethoate | 40% EC<br>(Appendix-A) | 24.07.2001 | 17.07.2004 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | China | Renewal / Revised | II | Insect. |
| 232 | Malik Pesticides (Pvt)Ltd | Butachlor | 60 EC | 18.07.1995 | 10.01.1995 | Weed control in Paddy. | China | | III | Herb. |
| 235 | Farm Shield (Pvt)Ltd | Isoproturon | 500 FW | 28.08.1995 | 27.03.1995 | Weeds in Wheat. | U.K | | III | Herb. |
| 236 | Farm Shield (Pvt)Ltd | Cypermethrin | 10 EC | 28.08.1995 | 27.03.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.K | | II | Insect. |
| 238 | Nafees (Pvt.) Ltd.<br>18-H, Vehari. | Isoproturon | 50% WP (w/w)<br>(Appendix-A) | 11.09.2001 | 27.08.2004 | Weeds in Wheat. | China | Renewal / Revised | III | Herb. |
| 239 | Al-Muqeet International | Cypermethrin | 10 EC | 28.08.1995 | 29.03.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.K | | II | Insect. |
| 240 | Nafees (Pvt.) Ltd.<br>18-H, Vehari. | Fenvalerate | 20% EC (w/v)<br>(Appendix-A) | 03.10.2001 | 27.08.2004 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Greece | Renewal / Revised | II | Insect. |
| 241 | Excellsior Inter. (Pvt)Ltd,<br>Lahore | Methamidophos | 60 SL | 30.08.1995 | 24.05.1995 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 246 | International Trade Centre,<br>Karachi | Isoproturon | 50 WP | 12.10.1995 | 12.07.1994 | Weeds in Wheat. | China | | III | Herb. |
| 248 | Pak China Chemicals, 1 - km<br>Bhoptian Chowk, Defence<br>Road off Raiwind Rd, Lahore. | Isoproturon | 50% WP (w/w)<br>(Appendix-A) | 21.09.2002 | 17.10.2004 | Weeds in Wheat. | China | Renewal / Revised | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 249 | Nafees (Pvt.) Ltd.<br>18-H, Vehari. | Monocrotophos | 40% WSC (w/v)<br>(Appendix-A) | 28.11.2001 | 16.10.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Greece | Renewal / Revised | Ib | Insect. |
| 252 | Cotton care (Pvt)Ltd | Methamidophos | 60 SL | 18.10.1995 | 19.03.1995 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 253 | Cotton care (Pvt)Ltd | Cypermethrin | 10EC | 18.10.1995 | 19.03.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 256 | Quality International Traders (Pvt.) Ltd.<br>9 - Light Industrial Area,<br>Model Town, Bahawalpur. | Methamidophos | 60% SL (w/v)<br>(600 g/l)<br>(Appendix-A) | 03.12.2001 | 06.12.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Greece | Renewal / Revised | Ib | Insect. |
| 259 | Nafees (Pvt.) Ltd, 18-H,<br>Vehari. | Endosulfan | 35 EC | 18.12.1995 | 11.07.1995 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Greece | | II | Insect. |
| 264 | Word Wide Agrochemicals | Fenvalerate | 20EC | 08.01.1996 | 25.09.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 265 | Malik Pesticides (Pvt)Ltd | Butachlor | 60 EC | 08.01.1996 | 24.08.1995 | Weed control in Paddy. | China | | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 267 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Methamidophos | 60% SL (w/v) (Appendix-A) | 24.01.2002 | 15.01.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal / Revised | Ib | Insect. |
| 268 | Welcon Chemical (Pvt.) Ltd, Lahore. | Monocrotophos | 40 WSC | 18.01.1996 | 09.01.1995 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |
| 269 | Crop Care (Pvt) Lahore | Fenvalerate | 20 EC | 24.01.1996 | 30.07.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Taiwan | | II | Insect. |
| 270 | Farm Shield (Pvt)Ltd | Fenvalerate | 20 EC | 24.01.1996 | 03.07.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Jordan | | II | Insect. |
| 271 | N.P.C. (Pvt)Ltd | Endosulfan | 35 EC | 28.01.1996 | 15.05.1995 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Malaysia | | II | Insect. |
| 272 | Malik Pesticides (Pvt)Ltd | Isoproturon | 50 WP | 28.01.1996 | 15.02.1995 | Weeds in Wheat. | China | | III | Herb. |
| 273 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Isoproturon | 500 FW (Appendix-A) | 12.12.2002 | 23.01.2005 | Weeds in Wheat. | U.A.E | Renewal | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 274 | National Agro Trading | Endosulfan | 35 EC | 24.01.1996 | 30.03.1995 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Greece | | II | Insect. |
| 275 | Sultan Multi Trading (Pvt.) Ltd., 27, Ali Block, New Garden Town, Lahore. | Methamidophos | 60% SL (w/v) (Appendix-A) | 24.01.2002 | 15.05.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal | Ib | Insect. |
| 278 | Nafees (Pvt.) Ltd.<br>18-H, Vehari. | Cypermethrin | 10% EC (w/v) (Appendix-A) | 14.02.2002 | 27.02.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Argentina | Renewal / Revised | II | Insect. |
| 279 | Farming Sense (Pvt)Ltd | Cypermethrin | 10 EC | 07.03.1996 | 11.10.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Greece | | II | Insect. |
| 280 | Farming Sense (Pvt)Ltd | Methamidophos | 60 SL | 07.03.1996 | 11.10.1995 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Greece | | Ib | Insect. |
| 281 | Farming Sense (Pvt)Ltd | Endosulfan | 35 EC | 07.03.1996 | 11.10.1995 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Greece | | II | Insect. |
| 283 | Khan Crop care (Pvt)Ltd | Isoproturon | 50 WP | 12.03.1996 | 07.09.1995 | Weeds in Wheat. | China | | III | Herb. |
| 284 | Rich Green (Pvt)Ltd | Fenvalerate | 20 EC | 12.03.1996 | 27.04.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 285 | National Agro Trading | Isoproturon | 50 WP | 12.03.1996 | 03.09.1995 | Weeds in Wheat. | China | | III | Herb. |
| 286 | Morgan Chemicals<br>2/FI, Shahnaz Arcade, 158 B.Y.J.C.H.S., Shaheed-e-Millat Road, Karachi. | Cypermethrin | 10% EC (w/v) Appendix-A) | 22.04.2002 | 12.03.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 287 | National Agro Trading | Malathion | 95 ULV | 13.03.1996 | 31.03.1995 | Paddy leaf hoppers, mango hoppers, mealy bugs and tobacco aphids. | Greece | | III | Insect. |
| 288 | Satoz Agri (Pvt.) Limited, 34,Club Road, Vehari. | Cypermethrin | 10 EC | 14.03.1996 | 03.10.1995 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 290 | Farm Shield (Pvt)Ltd | Isoproturon | 500 FW | 13.03.1996 | 03.07.1995 | Weeds in Wheat. | Jordan | | III | Herb. |
| 292 | Farm Shield (Pvt)Ltd | Cypermethrin | 10 EC | 15.04.1996 | 03.07.1995 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Jordan | | II | Insect. |
| 299 | Green Grow (Pvt.) Ltd, 29-B, Small Industrial State, Multan Road, Bahawalpur. | Cypermethrin | 10% EC (w/w) (Appendix-A) | 07.06.2002 | 07.05.2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 300 | Zenith Corporation(Pvt) Ltd Karachi. | Cypermethrin | 10 EC | 13.05.1996 | 27.09.1995 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.A.E | | II | Insect. |
| 301 | Zenith Corporation(Pvt) Ltd Karachi. | Endosulfan | 35 EC | 13.05.1996 | 11.10.1995 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.A.E | | II | Insect. |
| 302 | Dawn Agro Services (Private) Limited, 34/A, Street No.2, Jinnah Town, Sadiqabad- 54350. | Cypermethrin | 10% (w/w) EC (Appendix-A) | 22.05.202 | 14.05.2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.K | Renewal | II | Insect. |
| 303 | Dawn Agro Services (Private) Limited, 34/A, Street No.2, Jinnah Town, Sadiqabad- 54350. | Endosulfan | 35% EC (w/w) (Appendix-A) | 22.05.202 | 14.05.2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.K | Renewal | II | Insect. |
| 304 | Dawn Agro Services (Pvt) Ltd, Sadiqabad. | Fenvalerate | 20 EC | 15.05.1996 | 05.12.1995 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.K | | II | Insect. |
| 305 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Methamidophos | 60% SL (w/v) (Appendix-A) | 29.06.2002 | 15.05.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal / Revised | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 306 | Expert Agricare International | Fenvalerate | 20EC | 13.05.1996 | 26.12.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 314 | Crop Care (Pvt) Lahore | Isoproturon | 50 WP | 02.06.1996 | 04.02.1996 | Weeds in Wheat. | China | | III | Herb. |
| 315 | Green Grow (Pvt.) Ltd.<br>29-B, Small Industrial State,<br>Multan Road, Bahawalpur. | Methamidophos | 60% SL (w/v)<br>(Appendix-A) | 16.07.2002 | 01.06.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal / Revised | Ib | Insect. |
| 316 | Universal Agro Chemicals<br>(Pvt) Ltd.<br>E/ 12, S.I.T.E. Karachi. | Cypermethrin | 10 EC | 02.06.1996 | 18.07.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Turkey | | II | Insect. |
| 318 | KTK Pesticides (Pvt.) Ltd.<br>29-M-Civic Centre Model<br>Town (Extentdion) Lahore. | Fenvalerate | 20% EC (w/v)<br>(Appendix-A) | 10.07.2002 | 01.06.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 321 | Eva International (Pvt.) Ltd.<br>133-134, Eden Centre, 43 Jail<br>Road,<br>Lahore. | Isoproturon | 50 WP | 07.08.1996 | 16.01.1996 | Weeds in Wheat. | China | | III | Herb. |
| 322 | Anwaar Agro Services<br>Street-4, Hussain Abad (Opp.<br>Gulbahar), Peshawar. | Cypermethrin | 10% EC (w/v)<br>(Appendix-A) | 15.11.2002 | 06.08.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal | II | Insect. |
| 323 | Expert Agricare International | Cypermethrin | 10EC | 04.08.1996 | 12.09.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 325 | Pan Pacific (Pvt.) Ltd.,<br>12 - M, Block - 6, P.E.C.H.S.,<br>Karachi. | Cypermethrin | 10% (w/v) EC<br>(App.-A)<br>& 93% (w/w) Tech.<br>(App.-B) | 05.09.2002 | 14.08.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.K | Renewal | II | Insect. |
| 326 | Anwaar Agro Services<br>Street-4, Hussain Abad (Opp.<br>Gulbahar),<br>Peshawar. | Isoproturon | 75% WP (w/w)<br>(Appendix-A) | 15.10.2002 | 14.08.2005 | Weeds in Wheat. | China | Renewal | III | Herb. |
| 327 | Pak China Chemicals, 1 - Km<br>Bhoptian Chowk, Defence<br>Road off Raiwind Road,<br>Lahore. | Cypermethrin | 10% EC (w/v)<br>(App.-A)<br>& 92% (w/w) Tech.<br>(App.-B, C) | 27.06.2002 | 14.08.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Belgium | Renewal / Revised | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 328 | United Technova Cham Karachi | Endosulfan | 35 EC | 15.08.1996 | 11.02.1996 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Germany | | II | Insect. |
| 329 | Eva International (Pvt.) Ltd. 133-134, Eden Centre, 43 Jail Road, Lahore. | Cypermethrin | 10 EC | 18.08.1996 | 16.01.1996 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 330 | Word Wide Agrochemicals | Butachlor | 60 EC | 20.08.1996 | 17.12.1995 | Weed control in Paddy. | China | | III | Herb. |
| 333 | Anwaar Agro Services | Methamidophos | 60 SL | 20.08.1996 | 11.01.1996 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 334 | Anwaar Agro Services Street-4, Hussain Abad (Opp. Gulbahar),Peshawar. | Fenvalerate | 20% EC (w/v) (Appendix-A) | 15.10.2002 | 19.08.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal | II | Insect. |
| 335 | Marvi Agrochem (Pvt.) Ltd., 12 - M, Block - 6, P.E.C.H.S., Karachi. | Dimethoate | 40% EC (w/v) (Appendix-A) | 21.03.2003 | 24.08.2005 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | Malaysia | Renewal | II | Insect. |
| 336 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Cypermethrin | 5% EC (w/v) (Appendix-A) | 15.10.2002 | 23.09.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.A.E | Renewal | II | Insect. |
| 337 | Universal Agro Chemicals (Pvt) Ltd. S-94, S.I.T.E. Karachi. | Isoproturon | 50% WP (w/w) (Appendix-A) | 16.08.2003 | 15.10.2005 | Weeds in Wheat. | China | Renewal / Revised | III | Herb. |
| 339 | Pan Pacific (Pvt.) Ltd. 12 - M, Block - 6, P. E. C. H. S., Karachi. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 22.05.2003 | 09.11.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.K | Renewal / Revised | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 340 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Methamidophos | 60% SL (App.-A) & 70% (w/w) Tech. (App.-B) | 06.05.2003 | 19.11.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal / Revised | Ib | Insect. |
| 341 | Word Wide Agrochemicals | Methamidophos | 60 SL | 18.12.1996 | 08.04.1996 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 345 | Pan Pacific (Pvt.) Ltd.<br>12 - M, Block - 6, P. E. C. H. S., Karachi. | Endosulfan | 35% (w/v) EC (App.-A) & 94% (w/w) Tech. (App.-B) | 26.05.2003 | 04.12.2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.K | Renewal / Revised | II | Insect. |
| 350 | Seatco (Pvt.) Ltd.<br>133-N, Block, Model Town, Lahore. | Isoproturon | 50% (w/w) WP (Appendix-A) | 01.01.2003 | 04.12.2005 | Weeds in Wheat. | China | Renewal / Revised | III | Herb. |
| 351 | Crop Care (Pvt) Lahore | Monocrotophos | 40 WSC | 29.01.1997 | 26.09.1996 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Malaysia | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 352 | Welcon Chemicals (Pvt.) Ltd., Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Endosulfan | 35% EC (w/v) (App.-A) & 94% Tech. (w/w) (App.-B) | 19.02.2003 | 18.02.2006 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Malaysia | Renewal / Revised | II | Insect. |
| 353 | Khan Crop care (Pvt)Ltd | Butachlor | 60 EC | 05.04.1997 | 29.10.1995 | Weed control in Paddy. | China | | III | Herb. |
| 354 | Welcon Chemical (Pvt.) Ltd Suit No. 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Monocrotophos | 40% SWC (w/v) (Appendix-A) | 25.04.2003 | 30.03.2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Malaysia | Renewal / Revised | Ib | Insect. |
| 355 | Farm Chemicals | Endosulfan | 35 EC | 16.04.1997 | 23.10.1996 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Thailand | | II | Insect. |
| 356 | Co-Farmers (Pvt)Ltd | Fenvalerate | 20 EC | 16.04.1997 | 23.10.1996 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Taiwan | | II | Insect. |
| 357 | Co Farmers (Pvt)Ltd | Methamidophos | 60 SL | 16.04.1997 | 28.10.1996 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Taiwan | | Ib | Insect. |
| 358 | Fresh Gro (Pvt)Ltd | Dimethoate | 40 EC | 24.04.1997 | 13.11.1995 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | | | | |
| 359 | Agrar Pak (Pvt)Ltd | Endosulfan | 35 EC | 24.04.1997 | 04.01.1997 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.K | | II | Insect. |
| 360 | Sabzazar & Co. (Pvt.) Ltd. Plot No. 3 & 4, Opp. Wazir Mansion Railway Station Mauripur Road, Daryabad, Karachi. | Isoproturon | 500 g/l SC (App.-A) | 24.05.2003 | 23.04.2006 | Weeds in Wheat. | Germany | Renewal | III | Herb. |
| 361 | Excellsior Inter. (Pvt)Ltd, Lahore | Endosulfan | 35 EC | 25.04.1997 | 10.03.1996 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Cyprus | | II | Insect. |
| 362 | National Pesticides Corp. | Methamidophos | 60 SL | 15.05.1997 | 10.12.1996 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Malaysia | | Ib | Insect. |
| 363 | Warble (Pvt.) Ltd.<br>Suit No. 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Endosulfan | 35% (w/v) EC (Appendix-A) | 10.07.2003 | 13.06.2006 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Malaysia | Renewal / Revised | II | Insect. |
| 364 | Warble (Pvt.) Ltd.<br>Suit No. 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Monocrotophos | 40% WSC (w/v) (App.-A) & 72% Tech.<br>(w/w) Min. (App.-B) | 11.07.2003 | 13.06.2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre | Malaysia | Renewal | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | |
| 365 | Green Grow (Pvt.) Ltd,225-Shadman Colony Bahawalpur. | Endosulfan | 35 EC | 28.06.1997 | 26.03.1997 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Cyprus | | II | Insect. |
| 366 | National Pesticides Corp. | Cypermethrin | 10EC | 19.07.1997 | 08.12.1996 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 367 | Agrar Pak (Pvt)Ltd | Isoproturon | 500 FL | 24.07.1997 | 04.01.1997 | Weeds in Wheat. | U.K | | III | Herb. |
| 368 | Crop Care (Pvt) Lahore | Methamidophos | 60 SL | 25.07.1997 | 03.09.1996 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Malaysia | | Ib | Insect. |
| 369 | Warble (Pvt) Ltd.<br>Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Methamidophos | 60% (w/v) SL | 18.08.2003 | 25.07.2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Malaysia | Renewal | Ib | Insect. |
| 370 | United Technova Cham (Pvt.) Ltd.<br>702, Mashriq Centre, Block - 14, Gulshan-e-Iqbal, Karachi. | Methamidophos | 60% (W/V) SL (Appendix-A) | 09.06.2003 | 22.05.2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 371 | The Saggus (Pvt.) Ltd., 20 - G, Saggus House, Vehari. | Endosulfan | 35% (w/v) EC (Appendix-A) | 12.06.2001 | 20.07.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Cyprus | RENEWAL/REVISED | II | Insect. |
| 372 | Warble(Pvt) Ltd, Sit 18,3rd Floor, Lahore | Cypermethrin | 10EC | 19.08.1997 | 09.12.1996 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 373 | Warble (Pvt) Ltd.<br>Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cypermethrin | 10% EC (w/v) (App.-A)<br>& 92% (w/w) Tech. Min. (App.-B) | 02.09.2003 | 22.08.2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Malaysia | Renewal | II | Insect. |
| 374 | Welgreen Chemical (Pvt.) Ltd, Lahore | Isoproturon | 500 GL | 04.09.1997 | 06.08.1996 | Weeds in Wheat. | Belgium | | III | Herb. |
| 375 | Pan Pacific (Pvt) Ltd, Karachi | Isoproturon | 500 GL | 27.09.1997 | 26.09.1996 | Weeds in Wheat. | U.K | | III | Herb. |
| 376 | Marvi Agrochem (Pvt)Ltd | Monocrotophos | 40 WSC | 22.09.1997 | 21.08.1996 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Malaysia | | Ib | Insect. |
| 377 | World wide Agrochemicals | Monocrotophos | 40 WSC | 26.05.1997 | 07.08.1995 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 378 | Sabzazar & Company(Pvt)Ltd | Copper Oxychloride | 50 WP | 01.09.1997 | 27.10.1996 | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight, 1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | Germany | | III | Fung. |
| 379 | Sabzazar & Company (Pvt)Ltd | Benomyl | 50 WP | 01.09.1997 | 23.06.1996 | Seed dressing fungicide & melon powdery mildew. | Germany | | III | Fung. |
| 380 | Crop Care (Pvt) Lahore | Cypermethrin | 10EC | 13.11.1997 | 26.09.1996 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 381 | Kashtkar International | Cypermethrin | 10 EC | 13.11.1997 | 30.01.1997 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Greece | | II | Insect. |
| 382 | Kashtkar International (Pvt)Ltd | Endosulfan | 35 EC | 13.11.1997 | 30.01.1997 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Greece | | II | Insect. |
| 383 | Farm Shield (Pvt)Ltd | Copper Oxychloride | 50 WP | 17.10.1997 | 25.07.1996 | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight, 1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | Malaysia | | III | Fung. |
| 384 | Peoples Farm Services (Pvt.) Ltd., 9 - Ahmad Mansion, Shahrah -e- Quaid -e- Azam, Lahore. | Butachlor | 60% EC (Appendix - A) | 10.04.2001 | 20.11.2003 | Weed control in Paddy. | China | RENEWAL | III | Herb. |
| 385 | Welcon Chemical (Pvt.) Ltd., 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Methamidophos | 60% (W/V) SL (Appendix-A) | 17.02.2001 | 12.05.2003 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Malaysia | RENEWAL/REVISED | Ib | Insect. |
| 386 | Rayndos (Pvt)Ltd | Cypermethrin | 10 EC | 06.12.1997 | 23.10.1996 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Korea | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 387 | Dawn Agro Services (Private) Limited, 34 - 2/A, Jinnah Town, Sadiqabad- 54350. | Isoproturon | 500 (W/V) FW (Appendix-A) | 28.02.2001 | 12.11.2003 | Weeds in Wheat. | U.K | RENEWAL | III | Herb. |
| 388 | National Pesticides Corporation | Isoproturon | 75 WP | 10.01.1998 | 04.01.1997 | Weeds in Wheat. | China | | III | Herb. |
| 389 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Monocrotophos | 40 WSC | 03.02.1998 | 19.02.1997 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |
| 390 | Granulars (Pvt.) Ltd., Kassam Manzil, 1st Floor, 1 / 29, Randal Road, Karachl - 74400. | Endosulfan | 35% (w/v) EC (Appendix-A) | 02.03.2001 | 15.02.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Greece | RENEWAL/RE VISED | II | Insect. |
| 391 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Endosulfan | 35% (W/V) EC (Appendix-A) | 28.02.2001 | 03.06.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Cyprus | RENEWAL/RE VISED | II | Insect. |
| 392 | R.K. Chemicals | Endosulfan | 35 EC | 09.03.1998 | 11.08.1997 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Taiwan | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 393 | R.K. Chemicals | Methamidophos | 60 SL | 09.03.1998 | 11.08.1997 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Taiwan | | Ib | Insect. |
| 394 | Commander Agro (Pvt.) Ltd, 75-Askaria Colony,Shershah Road, Multan Cantt. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 02.03.2001 | 18.03.2004 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | England | RENEWAL/REVISED | II | Insect. |
| 395 | Reliance Chemicals (Pvt.) Ltd., Lakson Square Building No. 2, Sarwar Shaheed Road, Karachi. | Monocrotophos | 40% (w/w) SC (Appendix-A) | 27.03.2001 | 18.03.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Taiwan | RENEWAL/REVISED | Ib | Insect. |
| 396 | Reliance Chemicals (Pvt.) Ltd., Lakson Square Building No. 2, Sarwar Shaheed Road, Karachi. | Methamidophos | 60% (w/v) SL (Appendix-A) | 28.03.2001 | 18.03.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Taiwan | RENEWAL/REVISED | Ib | Insect. |
| 397 | Shad(Pvt)Ltd | Fenvalerate | 20 EC | 20.03.1998 | 12.07.1995 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Greece | | II | Insect. |
| 398 | Zagro NPC (Pvt.) Ltd., (Formerly; National Pesticides Corporation (Pvt.) Ltd.) Plot No.59, Sector 24, Korangi Industrial Area, Karachi. | Monocrotophos | 40% (w/v) WSC (Appendix-A) | 30.06.2001 | 02.04.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre | Malaysia | RENEWAL/REVISED | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | |
| 399 | Zagro NPC (Pvt.) Ltd., (Formerly; National Pesticides Corporation (Pvt.) Ltd.) Plot No.59, Sector 24, Korangi Industrial Area, Karachi. | Methamidophos | 60% (w/v) SL (600 g/l) (Appendix-A) | 29.06.2001 | 02.04.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Malaysia | REVISED | Ib | Insect. |
| 400 | Zagro NPC (Pvt.) Ltd., (Formerly; National Pesticides Corporation (Pvt.) Ltd.) Plot No.59, Sector 24, Korangi Industrial Area, Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 30.06.2001 | 02.04.2004 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Malaysia | RENEWAL/REVISED | II | Insect. |
| 401 | Shad(Pvt)Ltd | Methamidophos | 60 SL | 03.04.1998 | 12.07.1995 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Greece | | Ib | Insect. |
| 402 | Commander Agro (Pvt.) Ltd, 75-Askaria Colony,Shershah Road, Multan Cantt. | Isoproturon | 500 (W/V) FW (Appendix-A) | 02.03.2001 | 05.04.2004 | Weeds in Wheat. | London | Renewal | III | Herb. |
| 403 | Zagro NPC (Pvt.) Ltd., (Formerly; National Pesticides Corporation (Pvt.) Ltd.) Plot No.59, Sector 24, Korangi Industrial Area, Karachi. | Dimethoate | 40% (w/v) EC (Appendix-A) | 30.06.2001 | 31.05.2004 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | Malaysia | Renewal / Revised | II | Insect. |
| 404 | Eva International (Pvt.) Ltd. 133-134, Eden Centre, 43 Jail Road, Lahore. | Monocrotophos | 40% WSC (w/v) (Appendix-A) | 04.04.2002 | 17.06.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre | China | Renewal / Revised | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | |
| 405 | Ali Akbar Enterprises<br>H# 97, ST# 12 Cavalary Ground (Ext.), Lahore Cantt. | Endosulfan | 35% EC (w/v) (Appendix-A) | 22.01.2002 | 22.07.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.A.E | Renewal | II | Insect. |
| 406 | Quality International Traders (Pvt.) Ltd.<br>9 - Light Industrial Area, Model Town, Bahawalpur. | Cypermethrin | 10% EC (w/w) (Appendix-A) | 07.07.2001 | 22.07.2004 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.A.E | Renewal | II | Insect. |
| 407 | Quality International Traders (Pvt.) Ltd.<br>9 - Light Industrial Area, Model Town, Bahawalpur. | Endosulfan | 35% EC (w/v) (Appendix-A) | 06.07.2001 | 22.07.2004 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.A.E | Renewal / Revised | II | Insect. |
| 408 | Pak China Chemicals,<br>H# 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Isoproturon | 50% WP (Appendix-A) | 22.01.2002 | 30.09.2004 | Weeds in Wheat. | U.A.E | Renewal | III | Herb. |
| 409 | Granulars (Pvt.) Ltd.<br>Kassam Manzil 1st Floor, 1/29,<br>Randal Road, Karachi. | Fenvalerate | 20% EC (w/v) (Appendix-A) | 04.04.2002 | 23.02.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 410 | International Trade Centre, Karachi | Endosulfan | 35 EC | 25.02.1999 | 17.06.1998 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Singapore | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 411 | Nafees (Pvt.) Ltd.<br>18-H, Vehari. | Methamidophos | 60 SL | 25.02.1999 | 12.12.1996 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 412 | Nafees (Pvt.) Ltd.<br>18-H, Vehari. | Endosulfan | 35% EC (w/v)<br>(Appendix-A) | 14.02.2002 | 24.02.2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Greece | Renewal / Revised | II | Insect. |
| 413 | Nafees (Pvt.) Ltd.<br>18-H, Vehari. | Methamidophos | 60% SL (w/v)<br>(App.-A)<br>& 70% (w/w) Tech.<br>(App.-B) | 14.02.2002 | 24.02.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal | Ib | Insect. |
| 414 | Waseem Brothers(Pvt)Ltd | Thiophanate Methyl | 70 WP | 24.02.1999 | 07.11.1998 | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | China | | III | Fung. |
| 415 | Granulars (Pvt) Ltd.<br>Kassam Manzil 1st Floor,<br>1/29,<br>Randal Road, Karachi. | Methamidophos | 60% SL (w/v)<br>(Appendix-A) | 14.02.2002 | 24.02.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal / Revised | Ib | Insect. |
| 416 | Granulars (Pvt) Ltd.<br>Kassam Manzil 1st Floor,<br>1/29,<br>Randal Road, Karachi. | Cypermethrin | 10% EC (w/v)<br>(Appendix-A) | 14.02.2002 | 24.02.205 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Greece | Renewal / Revised | II | Insect. |
| 417 | Waseem Brothers(Pvt)Ltd | Carbendazim | 50 WP | 24.02.1999 | 07.11.1998 | Grape, Apple, Peas Powdery Mildew and sugarbeet Leaf spots. | China | | III | Fung. |
| 418 | Pan Pacific (Pvt) Ltd, Karachi | Cypermethrin | 5 EC | 25.02.1999 | 24.01.1998 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 419 | Zenith Corporation(Pvt) Ltd Karachi. | Monocrotophos | 40 WSC | 27.02.1999 | 14.02.1996 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | U.A.E | | Ib | Insect. |
| 420 | Agri Gold (Pvt.) Ltd.<br>232/5 Block VI, Model Town-B, Bahawalpur. | Endosulfan | 35% EC (w/v) (Appendix-A) | 14.02.2002 | 28.02.2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.A.E | Renewal / Revised | II | Insect. |
| 421 | Marvi Agrochem (Pvt)Ltd | Endosulfan | 35 EC | 01.03.1999 | 07.03.1997 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |
| 422 | Chem Agro International (Pvt) Ltd.<br>House No. 76, Str. 24, Sector F-10/1, Islamabad. | Cypermethrin | 10% EC (w/v) (Appendix-A) | 29.05.2002 | 31.12.2002 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal | II | Insect. |
| 423 | Green Aero Agrochemicals | Fenvalerate | 20 EC | 04.03.1999 | 02.10.1996 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 424 | Ali Akbar Enterprises, Lahore | Cartap Hydrochloride | 4 G | 03.03.1999 | 09.01.1999 | Rice Stem Borers. | China | | II | Insect. |
| 425 | Chem Agro International (Pvt) Ltd.<br>House No. 76, Str. 24, Sector F-10/1, Islamabad. | Methamidophos | 60% SL (w/v) (Appendix-A) | 18.05.2002 | 13.03.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal / Revised | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 426 | Warble (Pvt) Ltd.<br>Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Endosulfan | 35% EC (w/v) (Appendix-A) | 22.04.2002 | 18.03.2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Cyprus | Renewal / Revised | II | Insect. |
| 427 | Mehdi (Pvt)Ltd | Endosulfan | 35 EC | 13.03.1999 | 07.12.1998 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.K | | II | Insect. |
| 428 | Marvi Agrochem (Pvt) Ltd.<br>29-M, Civic Centre, Model Town, Lahoer. | Isoproturon | 50% WP (w/w) (Appendix-A) | 14.06.2002 | 31.03.2005 | Weeds in Wheat. | China | Renewal / Revised | III | Herb. |
| 429 | Dynamic Agrilinks (Pvt) Ltd.<br>148-149 Mall Plaza, Mall Road,<br>Multan Cantt. | Cypermethrin | 10% EC (w/w) (Appendix-A) | 12.04.2002 | 02.04.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 430 | Dynamic Agrilinks (Pvt) Ltd.<br>148-149 Mall Plaza, Mall Road,<br>Multan Cantt. | Fenpropathrin | 20% EC (w/w) (Appendix-A) | 03.04.2002 | 02.04.2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | Renewal / Revised | II | Insect. |
| 431 | Dynamic Agrilinks (Pvt) Ltd.<br>148-149 Mall Plaza, Mall Road,<br>Multan Cantt. | Methamidophos | 60% SL (w/v) (Appendix-A) | 12.03.2002 | 02.04.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal / Revised | Ib | Insect. |
| 432 | Welcon Chemicals (Pvt.) Ltd.<br>Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Metalaxyl + Mancozeb | 72% (w/w) WP (8% w/w + 64% Min.<br>w/w) (Appendix-A) | 11.11.2002 | 02.04.2005 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | Renewal / Revised | III | Herb. |
| 433 | Quality International Traders (Pvt.) Ltd.<br>9 - Light Industrial Area, Model Town, Bahawalpur. | Beta-Cypermethrin | 4.5 EC | 03.04.1999 | 17.12.1999 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 434 | Nafees (Pvt.)Ltd. 18-H, Vehari. | Alpha-Cypermethrin | 5% EC (w/v) (Appendix-A) | 27.03.2002 | 02.04.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Greece | Renewal / Revised | II | Insect. |
| 435 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Pendimethalin | 33% EC (w/v) (App.-A) & 90.5% Tech. (w/w) (App.-B) | 17.10.2002 | 03.04.2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | Revised | III | Herb. |
| 436 | Welcon Chemicals (Pvt.) Ltd. Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Pendimethalin | 33% EC (w/v) (Appendix-A) | 07.05.2002 | 02.04.2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | Renewal / Revised | III | Herb. |
| 437 | Crop Care (Pvt) Lahore | Pendimethalin | 33 EC | 03.04.1999 | 08.03.1999 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 438 | Nafees (Pvt.)Ltd. 18-H, Vehari. | Lambda - Cyhalothrin | 2.5% EC (w/v) (Appendix-A) | 27.03.2002 | 02.04.2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Renewal / Revised | II | Insect. |
| 439 | S. Essa (Pvt.) Ltd. 120 Liaquat Market, M. A. Jinnah Road, Karachi. | Alpha-Cypermethrin | 5% EC (w/v) (Appendix-A) | 27.03.2002 | 02.04.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Kingdom | Renewal / Revised | II | Insect. |
| 440 | S. Essa (Pvt.) Ltd. 120 Liaquat Market, M. A. Jinnah Road, Karachi. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 16.06.2003 | 02.04.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Singapore | Renewal / Revised | II | Insect. |
| 441 | Nafees (Pvt.)Ltd. 18-H, Vehari. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 29.03.2002 | 02.04.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Greece | Renewal / Revised | II | Insect. |
| 442 | Granulars (Pvt) Ltd. Kassam Manzil 1st Floor, 1/29, Randal Road, Karachi. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 12.03.2002 | 02.04.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Greece | Renewal / Revised | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 443 | The Saggus (Pvt.) Ltd., 20-G, Saggus House, Vehari. | Methamidophos | 60% SL (w/v) (Appendix-A) | 22.04.2002 | 24.02.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal / Revised | Ib | Insect. |
| 444 | The Saggus (Pvt.) Ltd., 7 - B, Shadman II, Lahore. | Cypermethrin | 10% EC (w/v) (App.-A) & 91% (w/v) Tech. (App.-B) | 22.04.2002 | 15.03.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal | II | Insect. |
| 445 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Lambda - Cyhalothrin | 2.5% EC (w/w) (Appendix-A) | 04.04.2002 | 02.04.2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Renewal / Revised | II | Insect. |
| 446 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Carbofuran | 3 G,97% T | 03.04.1999 | 18.01.1999 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 447 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Carbofuran | 3% G (w/w) (App.-A) & 90% D.B. Tech. (App.-B, C) | 08.07.2002 | 02.04.2005 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | China | Revised | Ib | Insect. |
| 448 | Welcon Chemical (Pvt.) Ltd, Lahore. | Carbofuran | 3 G,97% T | 03.04.1999 | 09.01.1999 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 449 | Pak China Chemicals H# 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Methamidophos | 60% SL (w/v) (App.-A) & 70% (w/w) Tech. Min. (App.-B) | 16.03.2002 | 03.04.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Renewal / Revised | Ib | Insect. |
| 450 | KTK Pesticides (Pvt.) Ltd. 29-M-Civic Centre Model Town (Extentdion), Lahore. | Fenpropathrin | 20% EC (w/w) (Appendix-A) | 22.05.2002 | 14.04.2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | Renewal / Revised | II | Insect. |
| 451 | KTK Pesticides,29-M-Civic Centre Model Town(Extentdion) Lahore | Cypermethrin | 10 EC | 15.04.1999 | 26.01.1999 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 452 | Croplands(Pvt)Ltd | Buprofezin | 25 WP | 12.04.1999 | 01.02.1999 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 453 | Croplands(Pvt)Ltd | Metalaxyl + Mancozeb | 72 WP | 12.04.1999 | 02.01.1999 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 454 | Excellsior Inter. (Pvt)Ltd, Lahore | Beta-Cypermethrin | 4.5 EC | 22.04.1999 | 24.02.1999 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 455 | Pesto Agri(Pvt)Ltd | Beta-Cypermethrin | 4.5 EC | 20.04.1999 | 27.02.1999 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 456 | Seatco (Pvt.) Ltd. 133-N, Block, Model Town, Lahore. | Pendimethalin | 33% EC (w/v) (Appendix-A) | 05.11.2002 | 13.05.2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | Renewal / Revised | III | Herb. |
| 457 | Seatco (Pvt.) Ltd, Lahore. | Beta-Cypermethrin | 4.5 EC | 14.05.1999 | 01.01.1999 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 458 | Dynamic Agrilinks (Pvt) Ltd. 148-149 Mall Plaza, Mall Road, Multan Cantt. | Lambda - Cyhalothrin | 2.5% EC (w/v) (Appendix-A) | 18.05.2002 | 18.06.2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Renewal / Revised | II | Insect. |
| 459 | Dynamic Agrilinks (Pvt) Ltd. 148-149 Mall Plaza, Mall Road, Multan Cantt. | Alpha-Cypermethrin | 5% EC (w/w) (Appendix-A) | 16.05.2002 | 18.06.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Belgium | Renewal / Revised | II | Insect. |
| 460 | Dynamic Agrilinks (Pvt) Ltd. 148-149 Mall Plaza, Mall Road, Multan Cantt. | Fenvalerate | 20% EC (w/w) (Appendix-A) | 17.05.2002 | 18.06.2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal | II | Insect. |
| 462 | Pace Pesticides (Pvt) Ltd. I. E. Industrial Estate, Multan. | Cypermethrin | 5 EC | 19.06.1999 | 22.03.1999 | Cotton Pink Bollworm 500 ml/acre, Cotton Spotted Bollworm 500 ml/acre. | China | | II | Insect. |
| 463 | Pace Pesticides (Pvt) Ltd. I. E. Industrial Estate, Multan. | Beta-Cypermethrin | 4.5 EC | 19.06.1999 | 22.03.1999 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 464 | Pace Pesticides (Pvt) Ltd. I. E. Industrial Estate, Multan. | Endosulfan | 35 EC | 19.06.1999 | 22.03.1999 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 465 | Pace Pesticides (Pvt) Ltd. I. E. Industrial Estate, Multan. | Lambda - Cyhalothrin | 2.5% EC (w/v) (Appendix-A) | 10.06.2002 | 18.06.2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Renewal / Revised | II | Insect. |
| 466 | Pace Pesticides (Pvt) Ltd. I. E. Industrial Estate, Multan. | Chlorpyrifos | 40% EC (W/W) (Appendix-A) | 11.06.2002 | 18.06.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | Renewal / Revised | II | Insect. |
| 467 | Farmers Equity (Pvt) Ltd. 148-149 Mall Plaza, Mall Road, Multan Cantt. | Alpha-Cypermethrin | 5% EC (w/v) (Appendix-A) | 18.05.2002 | 18.06.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Holland | Renewal | II | Insect. |
| 468 | Commander Agro (Pvt) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 18.05.2002 | 18.06.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Egland | Renewal / Revised | II | Insect. |
| 469 | Commander Agro (Pvt) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Endosulfan | 35% EC (w/w) (Appendix-A) | 18.05.2002 | 18.06.2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Egland | Renewal | II | Insect. |
| 470 | Commander Agro(Pvt)Ltd | Alpha-Cypermethrin | 4.5 EC | 19.06.1999 | 17.04.1999 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Egland | | II | Insect. |
| 471 | Grnaulars(Pvt)Ltd | Beta-Cypermethrin | 4.5 EC | 19.06.1999 | 06.04.1999 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 472 | Farmers Equity(Pvt)Ltd | Fenvalerate | 20 EC | 19.06.1999 | 16.03.1999 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 473 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Alpha-Cypermethrin | 5% EC (w/v) (Appendix-A) | 29.10.2002 | 18.06.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | Renewal / Revised | II | Insect. |
| 474 | Nafees (Pvt.)Ltd. 18-H, Vehari. | Beta-Cypermethrin | 4.5% EC (w/w) (Appendix-A) | 10.07.2002 | 20.06.2005 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | Renewal / Revised | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 475 | Nafees (Pvt.)Ltd. 18-H, Vehari. | Cypermethrin | 10% EC (w/v) (Appendix-A) | 07.06.2003 | 20.06.2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Revised | II | Insect. |
| 476 | Nafees (Pvt.)Ltd. 18-H, Vehari. | Lambda - Cyhalothrin | 2.5% EC (w/v) (Appendix-A) | 05-09-2002 | 20.06.2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Renewal / Revised | II | Insect. |
| 477 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Alpha-Cypermethrin | 5% EC (w/v) (App.-A) & 97% (w/w) Tech. Min. (App.-B) | 15.11.2002 | 20.06.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.K | Renewal / Revised | II | Insect. |
| 478 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Chlorpyrifos | 40% EC (w/v) (App.-A) & 95% (w/w) Tech. (App.-B) | 27.06.2002 | 20.06.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.K | Renewal / Revised | II | Insect. |
| 479 | Welcon Chemicals (Pvt.) Ltd., Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Quinalphos | 25 EC | 21.06.1999 | 18.01.1999 | Cotton pest complex and sugarcane, borers. | China | | II | Insect. |
| 480 | Welcon Chemicals (Pvt.) Ltd., Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Chlorpyrifos | 40% EC (W/W) (Appendix-A) | 10.07.2002 | 20.08.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Cyprus | Renewal / Revised | II | Insect. |
| 481 | Warble(Pvt) Ltd. Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cartap Hydrochloride | 4% G (w/w) (App.-A) & 98% (w/w) Tech. (App.-B) | 16.07.2002 | 20.06.2005 | Rice Stem Borers. | China | Renewal | II | Insect. |
| 482 | Welcon Chemicals (Pvt.) Ltd., Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Chlorpyrifos | 40% EC (w/v) (App.-A) & 94% (w/w) Tech. (App.-B) | 16.08.2002 | 20.06.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Malaysia | RENEWAL/RE VISED | II | Insect. |
| 483 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Fenvalerate | 20% (w/v) EC (App.-A) & 92% Tech. Min. (w/w) (App.-B) | 22.05.2003 | 20.06.2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Malaysia | Renewal / Revised | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 484 | Warble (Pvt.) Ltd.<br>Suit No. 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Beta-Cypermethrin | 4.5% (w/v) EC (App.-A) & 90% Tech. (w/w) Min. (App.-B) | 04.02.2003 | 20.06.2005 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | Revised | II | Insect. |
| 485 | Warble(Pvt) Ltd.<br>Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Monocrotophos | 40% WSC (w/v) (Appendix-A) | 16.07.2002 | 20.06.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Cyprus | Renewal | Ib | Insect. |
| 486 | Welcon Chemicals (Pvt.) Ltd., Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cypermethrin | 10% EC (w/v) (App.-A) & 93% (w/v) Tech. (App.-B) | 05.09.2002 | 20.06.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.K | RENEWAL/REVISED | II | Insect. |
| 487 | Welcon Chemicals (Pvt.) Ltd., Suite No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Alpha-Cypermethrin | 5% EC (w/v) (Appendix-A) | 16.08.20002 | 20.06.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.K | RENEWAL/REVISED | II | Insect. |
| 488 | Pak China Chemicals<br>1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 01.12.2003 | 20.06.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | RENEWAL/REVISED | II | Insect. |
| 489 | Farmers Equity (Pvt) Ltd.<br>148-149 Mall Plaza, Mall Road,<br>Multan Cantt. | Monocrotophos | 40% WSC (w/w) (Appendix-A) | 18.05.2002 | 21.06.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre | Malaysia | Renewal | Ib | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | |
| 490 | Pakistan Agro Chemicals (Pvt.) Ltd.,<br>38 - C / IV, Block - 6,<br>P.E.C.H.S., Karachi. | Lambda - Cyhalothrin | 2.5% (W/V) EC (App.A) & 98% (W/W) Tech. (App.B) | 22.03.2001 | 21.06.2002 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Revised | II | Insect. |
| 491 | Vital Chemicals Corporation | Beta-Cypermethrin | 4.5 EC | 21.06.1999 | 17.04.1999 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 492 | Vital Chemicals Corporation | Monocrotophos | 40 WSC | 21.06.1999 | 24.03.1999 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |
| 493 | Vital Chemicals Corporation<br>10-A/2, Gulgashat Colony,<br>Bosan Road, Multan. | Lambda - Cyhalothrin | 2.5% EC (w/v) (Appendix-A) | 15.07.2002 | 21.06.2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | RENEWAL/REVISED | II | Insect. |
| 494 | Vital Chemicals Corporation | Cartap Hydrochloride | 4 G, 98% Tech | 21.06.1999 | 24.03.1999 | Rice Stem Borers. | China | | II | Insect. |
| 495 | Pakistan Agro Chemicals (Pvt.) Ltd.<br>38 - C / IV, Block - 6,<br>P.E.C.H.S.<br>Karachi. | Profenofos | 40% EC (w/w) (App.-A)<br>& 85% Tech. (w/w) (App.-B) | 21.08.2001 | 22.06.2002 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | Revised | II | Insect. |
| 496 | Solex Chemicals (Pvt.) Ltd.,<br>Solex House 768,<br>Mahmoodabad, Khanewal Road, Multan. | Endosulfan | 35% EC (w/v) (Appendix-A) | 09.08.2002 | 22.06.2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | RENEWAL/REVISED | II | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| 497 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Beta-Cypermethrin | 4.5% EC (w/w) (Appendix-A) | 29.04.2003 | 22.06.2005 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | Revised | II | Insect. |
| 498 | Excellsior Inter. (Pvt)Ltd, Lahore | Fenpropathrin | 20 EC | 23.06.1999 | 16.03.1999 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 499 | Excellsior Inter. (Pvt)Ltd, Lahore | Lambda - Cyhalothrin | 2.5 EC | 23.06.1999 | 01.02.1999 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 500 | Excellsior Inter. (Pvt)Ltd, Lahore | Monocrotophos | 40 WSC | 23.06.1999 | 01.02.1999 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |
| 501 | Marvi Agrochem (Pvt) Ltd. 29-M, Civic Centre, Model Town, Lahoer. | Alpha-Cypermethrin | 5% EC (w/w) (App.-A) & 95% (w/w) Tech. (App.-B) | 10.07.2002 | 24.06.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.K | Renewal | II | Insect. |
| 502 | Crop Care (Pvt) Lahore | Deltamethrin | 2.5 EC | 24.06.1999 | 14.01.1999 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 503 | Excellsior Inter. (Pvt)Ltd, Lahore | Profenofos | 40 EC | 24.06.1999 | 22.02.1999 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 504 | Mak Agrochemicals (Pvt.) Ltd. Suit # 805, 8th Floor, Land Mark Plaza, 5/6 Jail Road, Lahore. | Cartap Hydrochloride | 4% G (w/w) (App.-A) & 98% (w/w) (App.-B) Tech. | 22.07.2002 | 23.06.2005 | Rice Stem Borers. | China | Renewal | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 505 | Mehdi (Pvt.) Ltd, Karachi. | Fenpropathrin | 20 EC | 24.06.1999 | 05.01.1999 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 506 | Radix Chemical, (Pvt.) Ltd, Multan | Fenvalerate | 20 EC | 25.06.1999 | 17.02.1999 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Taiwan | | II | Insect. |
| 507 | Radix Chemical, (Pvt.) Ltd, Multan | Endosulfan | 35 EC | 25.06.1999 | 17.02.1999 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Taiwan | | II | Insect. |
| 508 | Radix Chemical, (Pvt.) Ltd, Multan | Chlorpyrifos | 40 EC | 25.06.1999 | 17.02.1999 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Taiwan | | II | Insect. |
| 509 | Crop Care (Pvt) Lahore | Methamidophos | 60 SL | 29.06.1999 | 24.02.1999 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 510 | Dawn Agro Services (Pvt) Ltd, Sadiqabad. | Chlorpyrifos | 40 EC | 30.06.1999 | 26.03.1999 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Egland | | II | Insect. |
| 511 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Endosulfan | 35% EC (w/v) (Appendix-A) | 22.07.2002 | 29.06.2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.A.E | RENEWAL | II | Insect. |
| 512 | Dawn Agro Services (Private) Limited 34 - 2/A, Jinnah Town, Sadiqabad- 54350. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 25.06.2003 | 02.07.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Egland | Revised | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 513 | Kissan Agrochemicals | Lambda - Cyhalothrin | 2.5 EC | 03.07.1999 | 19.05.1999 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 514 | Green Grow (Pvt.) Ltd. 29-B, Small Industrial State, Multan Raoad, Bahawalpur. | Beta-Cypermethrin | 4.5% EC (w/v) (Appendix-A) | 22.07.2002 | 07.07.2005 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | Renewal / Revised | II | Insect. |
| 515 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Triazophos | 40% EC (w/v) (Appendix-A) | 06-09-2002 | 07.07.2005 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | Renewal / Revised | Ib | Insect. |
| 516 | Pesto Agri(Pvt)Ltd | Deltamethrin | 2.5 EC | 08.07.1999 | 27.02.1999 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 517 | Pesto Agri(Pvt)Ltd | Methamidophos | 60 SL | 08.07.1999 | 01.03.1999 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 518 | Marvi Agrochem (Pvt.) Ltd., 12 - M, Block - 6, P.E.C.H.S., Karachi. | Chlorpyrifos | 40% EC (w/v) (App.-A) & 95% (w/w) Tech. (App.-B) | 22.07.2002 | 07.07.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.K | Renewal / Revised | II | Insect. |
| 519 | Union Agro Industries, D - 5, Sector 32 - A, Korangi, Karachi. | Dimehypo | 4% (w/w) G (App.-A) & 98 % Tech. (App.-B) | 05.09.2002 | 08.07.2005 | Rice Borers. | China | Renewal / Revised | | Insect. |
| 520 | Dawn Agro Services (Private) Limited 34 - 2/A, Jinnah Town, Sadiqabad- 54350. | Lambda - Cyhalothrin | 2.5% EC (w/v) (Appendix-A) | 30.07.2002 | 16.07.2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | RENEWAL/RE VISED | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 521 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Cypermethrin | 10% EC (w/v) (Appendix-A) | 02.09.2002 | 19.08.2005 | Cotton Pink Bollworm 250 ml/acre<br>Cotton Spotted Bollworm 250 ml/acre. | U.A.E | RENEWAL/REVISED | II | Insect. |
| 522 | Kissan Supplies Services (Pvt.) Ltd.<br>46-2nd Floor Hafeez Centre, Gulberg III, Lahore. | Methamidophos | 60% SL (w/v) (Appendix-A) | 22.07.2003 | 26.08.2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | Revised | Ib | Insect. |
| 523 | Peoples Farm Services (Pvt.) Ltd., 9 - Ahmad Mansion, Shahrah -e- Quaid -e- Azam, Lahore. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 22.03.2003 | 26.08.2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 524 | KTK Pesticides (Pvt.) Ltd. 29-M-Civic Centre Model Town (Extentdion), Lahore | Carbofuran | 3% (w/w) G (App.-A) & 97% (w/w) Tech. (App.-B) | 22.05.2003 | 15.09.2005 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | China | Renewal | Ib | Insect. |
| 525 | Pakistan Agro Chemicals (Pvt)Karachi | Metalaxyl + Mancozeb | 72% (W/W) WP | 18.09.1999 | 15.03.1999 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 526 | Welcon Chemical (Pvt.) Ltd, Lahore. | Mancozeb | 70% (W/W) WP | 21.09.1999 | 22.03.1999 | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 527 | Pak China Chemicals, 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Metalaxyl + Mancozeb | 72% (w/w) WP (64 + 8%) (Appendix-A) | 28-09-2002 | 20-09-2005 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | Renewal / Revised | III | Herb. |
| 528 | Pak China Chemicals, 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Mancozeb | 80% (w/w) WP (Appendix-A) | 28-09-2002 | 20-09-2005 | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | China | Renewal / Revised | III | Fung. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 529 | Pakistan Agro Chemicals (Pvt)Karachi | Imidacloprid | 25% W/W WP | 23.09.1999 | 09.04.1999 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 530 | Granulars (Pvt.) Ltd. Kassam Manzil, 1st Floor, 1 / 29, Randal Road, Karachl - 74400. | Metalaxyl + Mancozeb | 72% (w/w) WP (64 + 8%) (Appendix-A) | 27-09-2002 | 28.09.2005 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | Taiwan | Renewal / Revised | III | Herb. |
| 531 | Farm Shield, Lahore | Buprofezin | 25 % (w/w) WP | 01.10.1999 | 01.06.1999 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 532 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Buprofezin | 25% (w/w) WP (Appendix - A) | 29.01.2003 | 29.09.2005 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | Renewal | III | Insect. |
| 533 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 04.11.2002 | 30.09.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.A.E | Renewal / Revised | II | Insect. |
| 534 | Cropland (Pvt.) Ltd. 35 / E, Shah Rukn-e-Alam Colony, Phase II, Multan. | Mancozeb | 80% (w/w) WP (Appendix-A) | 30.11.2002 | 29.09.2005 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China | Renewal | III | Fung. |
| 535 | Welcon Chemical (Pvt.) Ltd, Lahore. | Isoproturon | 50 WP | 04.10.1999 | 09.01.1999 | Weeds in Wheat. | China | | III | Herb. |
| 536 | Welcon Chemicals (Pvt.) Ltd., Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Copper Oxychloride | 50% (w/w) WP (84% Min. Copper Oxychloride equivalent to 50% w/w copper as pure matal) (Appendix-A) | 17.10.2002 | 04.10.2005 | Potato, Early blight, 1000 gm / acre Potato, Late blight, 1000 gm / acre Tomato, Early blight, 1000 gm / acre Tomato, Late blight, 1000 gm / acre Chilies, Leaf blight, 500 gm / acre Cucurbits, Downy mildew, 500 gm / acre | U.K | Renewal | III | Fung. |
| 537 | Chemgro International (Pvt.) Ltd. 29-M, Civic Centre, Model Town (Ext.) Lahore. | Isoproturon | 50% (w/w) WP (Appendix-A) | 19.05.2003 | 08.10.2005 | Weeds in Wheat. | China | Renewal | III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 538 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Isoproturon | 50 % (w/w) WP (Appendix-A) | 29.01.2003 | 08.10.2005 | Weeds in Wheat. | China | Renewal / Revised | III | Herb. |
| 539 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Endosulfan | 35% EC (w/v) (Appendix-A) | 03.10.2002 | 07.10.2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Greece | Renewal | II | Insect. |
| 540 | Quality International Traders (Pvt.) Ltd.<br>9 - Light Industrial Area, Model Town, Bahawalpur. | Copper Oxychloride | 50% WP (84% Min. Copper Oxychloride equivalent to 50% w/w copper as pure matal) (Appendix-A) | 23-09-2002 | 07.10.2005 | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight, 1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | Cyprus | Renewal | III | Fung. |
| 541 | Granulars (Pvt.) Ltd.<br>Kassam Manzil, 1st Floor, 1 / 29,<br>Randal Road, Karachl - 74400. | Alpha-Cypermethrin | 5% EC (w/v) (Appendix-A) | 23.09.2002 | 12.10.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Greece | Renewal / Revised | II | Insect. |
| 542 | Crop Care (Pvt) Lahore | Carbofuran | 3%G<br>97%Tech(W/W) | 16.10.1999 | 13.02.1999 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 543 | Farmers Equity, Lahore | Isoproturon | 50 % W/W WP | 20.10.1999 | 11.02.1999 | Weeds in Wheat. | China | | III | Herb. |
| 544 | S. Essa (Pvt) Ltd, Karachi | Buprofezin | 25 % (w/w) WP | 25.10.1999 | 12.05.1999 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | Singapure | | III | Insect. |
| 545 | Pace Pesticides(Pvt)Ltd,Multan | Cartap Hydrochloride | 4%G 98% Tech | 28.10.1999 | 22.03.1999 | Rice Stem Borers. | China | | II | Insect. |
| 546 | Pace Pesticides(Pvt)Ltd,Multan | Metalaxyl + Mancozeb | 72% (W/W) WP | 28.10.1999 | 08.09.1999 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 547 | Seatco (Pvt.) Ltd, Lahore. | Dimehypo | | 20.10.1999 | 01.01.1999 | Rice Borers. | China | | | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 548 | Seatco (Pvt.) Ltd, Lahore. | Endosulfan | 35 EC | 20.10.1999 | 01.02.1999 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |
| 549 | Welcon Chemicals (Pvt.) Ltd., Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 15.10.2002 | 28.10.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.K | Renewal / Revised | II | Insect. |
| 550 | R.B. Avari Enterprises,Karachi | Lambda - Cyhalothrin | | 29.10.1999 | 04.05.1999 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 551 | Farmers Equity(Pvt)Ltd | Imidacloprid | | 02.11.1999 | 19.03.1999 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 552 | Farm Shield (Pvt)Ltd | Imidacloprid | | 02.11.1999 | 01.06.1999 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 553 | Farm Shield (Pvt)Ltd | Lambda - Cyhalothrin | | 02.11.1999 | 01.06.1999 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 554 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 10.07.2003 | 16.11.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | Renewal / Revised | II | Insect. |
| 555 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Mancozeb | 80% (w/w) WP (Appendix-A) | 30.11.2002 | 16.11.2005 | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | China | Renewal | III | Fung. |
| 556 | International Trade Centre 120 Liaquat Market, M.A.Jinnah Road, Karachi. | Pendimethalin | 33% (w/v) EC (Appendix-A) | 25.01.2003 | 16.11.2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | Renewal / Revised | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 557 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Pendimethalin | 33% (w/v) EC (Appendix-A) | 01.01.2003 | 16.11.2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | Renewal / Revised | III | Herb. |
| 558 | Pan Pacific (Pvt) Ltd, Karachi | Cartap Hydrochloride | | 17.11.1999 | 12.07.1999 | Rice Stem Borers. | China | | II | Insect. |
| 559 | United Technova Cham (Pvt.) Ltd. 702, Mashriq Centre, Block - 14, Gulshan-e-Iqbal, Karachi. | Pendimethalin | 33% EC (w/v) (Appendix-A) | 16.01.2003 | 16.11.2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | Bulgaria | Renewal | III | Herb. |
| 560 | Warble(Pvt) Ltd, Sit 18,3rd Floor, Lahore | Bromoxynil + MCPA | | 19.11.1999 | 09.10.1999 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |
| 561 | Pak China Chemicals, 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Isoproturon | 500 FW (Appendix-A) | 19.11.2002 | 24.11.2005 | Weeds in Wheat. | U.A.E | Renewal / Revised | III | Herb. |
| 562 | Pak China Chemicals, 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Bromoxynil + MCPA | 200 / 200 EC (w/v) (Appendix-A) | 02.12.2002 | 01.12.2005 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | Renewal | II +III | Herb. |
| 563 | Pan Pacific (Pvt.) Ltd., 12 - M, Block - 6, P.E.C.H.S., Karachi. | Alpha-Cypermethrin | 4.5% (w/v) EC (App.-A) & 90% Tech. (w/w) (App.-B) | 18.06.2003 | 01.12.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | Renewal / Revised | II | Insect. |
| 564 | Sultan Multi Trading (Pvt.) Ltd. Suit # 4, 2nd Floor, 3 Civic Centre, Central Plaza, New Garden Town, Lahore. | Cypermethrin | 10% EC (w/v) (Appendix-A) | 04.11.2002 | 03.12.2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 565 | Sultan Multi Trading (Pvt.) Ltd. Suit # 4, 2nd Floor, 3 Civic Centre, Central Plaza, New Garden Town, Lahore. | Beta-Cypermethrin | 4.5% (w/v) EC (Appendix-A) | 01.01.2003 | 03.12.2005 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | Renewal / Revised | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 566 | R.B. Avari Enterprises,Karachi | Methomyl | 90% (W/W) SP | 10.12.1999 | 19.06.1999 | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, Jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphid. | China | | Ib | Insect. |
| 567 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Metalaxyl + Mancozeb | 72% WP (8% w/w + 64% w/w) (Appendix-A) | 05.03.2003 | 17.12.2005 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | Renewal / Revised | III | Herb. |
| 568 | Pan Gold (Pvt.) Ltd, Lahore | Cypermethrin | | 04.12.1999 | 22.03.1999 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 569 | KTK Pesticides,29-M-Civic Centre Model Town(Extentdion) Lahore | Monocrotophos | | 31.12.1999 | 08.01.1999 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | | Ib | Insect. |
| 570 | Granulars (Pvt) Ltd. Kassam Manzil 1st Floor, 1/29, Randal Road,Karachi. | Esfenvalerate | 5% EC (w/v) (Appendix-A) | 16.01.2003 | 11.01.2006 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | Taiwan | Renewal / Revised | II | Insect. |
| 571 | S. ESSA 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 05.03.2003 | 10.01.2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Renewal / Revised | II | Insect. |
| 572 | Granulars (Pvt.) Ltd. Kassam Manzil, 1st Floor, 1/29, Randal Road, Karachi - 74400. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 25.01.2003 | 10.01.2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Renewal / Revised | II | Insect. |
| 573 | Granulars (Pvt) Ltd, Karachi | Profenofos | 40%EC | 10.01.2000 | 05.08.1999 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 574 | Chem Agro International (Pvt.) Ltd. House No. 76, Str. 24, Sector F-10/1, Islamabad. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 98 % Tech. (App.-B) | 12.04.2003 | 11.01.2006 | Rice Stem Borers. | China | Renewal | II | Insect. |
| 575 | Nokon (Pvt.) Ltd. 110-a, Govt. Officer Co-operative, Housing Society, Farid Town, Sahiwal. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 25.04.2003 | 13.01.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 576 | Pan Pacific (Pvt.) Ltd. 12 - M, Block - 6, P. E. C. H. S., Karachi. | Dimethoate | 40% EC (w/v) (App.-A) & 96% Tech. (w/w) (App.-B) | 22.05.2003 | 17.01.2006 | Cotton, Jassids, 400 ml/acre Cotton, Thrips, 400 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Tobacco, Aphids, 400 ml/acre Oil seed, Aphids, 400 ml/acre Sugarcane, Pyrilla, 400 ml/acre | China | Renewal / Revised | II | Insect. |
| 577 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | Chlorpyrifos | 40% (w/v) EC | 16.08.2003 | 28.12.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | Renewal / Revised | II | Insect. |
| 578 | Chem Agro International(Pvt.) Ltd,Islamabad. | Alpha-Cypermethrin | | 25.01.2000 | 19.05.1999 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | | II | Insect. |
| 579 | Warble(Pvt) Ltd, Sit 18,3rd Floor, Lahore | Chlorpyrifos | 40% (w/v) EC (Appendix-A) | 21.03.2003 | 01.01.2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Malaysia | Renewal / Revised | II | Insect. |
| 580 | Peoples Farm Services (Pvt.) Ltd., 9 - Ahmad Mansion, Shahrah -e- Quaid -e- Azam, Lahore. | Fenvalerate | 20% (w/v) EC | 07.10.2003 | 26.01.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 581 | Granulars (Pvt) Ltd, Karachi | Deltamethrin | | 03.02.2000 | 08.09.1999 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 582 | Welgreen Chemical (Pvt.) Ltd, Lahore | Beta-Cypermethrin | | 31.01.2000 | | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 583 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Mancozeb | | 31.01.2000 | 17.02.1999 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 584 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 25.01.2003 | 30.01.2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | Renewal / Revised | II | Insect. |
| 585 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 29.01.2003 | 02.02.2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | Greece | Renewal / Revised | II | Insect. |
| 586 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Fenvalerate | | 31.01.2000 | 28.08.1999 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 587 | Welcon Chemicals (Pvt.) Ltd., Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Fenvalerate | 20% EC (w/v) (App.-A) & 90% Tech. (w/w) (App.-B) | 19.02.2003 | 30.01.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 588 | Unica International (Pvt.) Ltd, Lahore. | Lambda - Cyhalothrin | | 31.01.2000 | 03.07.1999 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 589 | Seatco (Pvt.) Ltd.,133-N, Block, Model Town, Lahore-54700 | Metalaxyl + Mancozeb | 72% WP (8% w/w + 64% w/w) (App.-A) | 05.03.2003 | 30.01.2006 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | Renewal / Revised | III | Herb. |
| 590 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Methamidophos | | 10.02.2000 | 27.12.1999 | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 591 | Crop Care (Pvt) Lahore | Beta-Cypermethrin | | 10.02.2000 | 13.02.1999 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 592 | Pakistan Agro Chemicals (Pvt.) Ltd, 38-C/iv, Block-6,PECHS,Karachi | Trifluralin | | 11.02.2000 | 21.12.1999 | Annual grasses and broad leaved weeds in cotton, soyabean and vegetables. | China | | | |
| 593 | Ramsan International (Pvt.) Ltd,Lahore. | Malathion | 95 ULV | 11.02.2000 | 29.10.1999 | Paddy leaf hoppers, mango hoppers, mealy bugs and tobacco aphids. | U.K | | III | Insect. |
| 594 | Crop Care (Pvt) Lahore | Chlorpyrifos | | 10.02.2000 | 03.07.1999 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Malaysia | | II | Insect. |
| 595 | KTK Pesticides,29-M-Civic Centre Model Town(Extentdion) Lahore | Mancozeb | | 10.02.2000 | 09.01.1999 | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 596 | Excellsior Inter. (Pvt)Ltd, Lahore | Buprofezin | 25 % (w/w) WP | 10.02.2000 | 01.02.1999 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 597 | Nafees (Pvt.)Ltd, 18-H, Vehari. | Buprofezin | | 25.02.2000 | 27.12.1999 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 598 | SC Dyestuff and Chemicals (Pvt.) Ltd.<br>2nds floor,Palace Cinema, Building, Civil Lines, Karachi. | Fenitrothion | 98% (w/w) ULV (Appendix-A) | 19.02.2003 | 24.02.2006 | Sucking Insect of Cotton; Sugarcane and Paddy Borers. | Japan | Renewal | II | Insect. |
| 599 | Quality International Traders (Pvt.) Ltd.<br>9 - Light Industrial Area, Model Town, Bahawalpur. | Chlorpyrifos | 40% (w/v) EC (Appendix-A) | 05.03.2003 | 28.02.2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.A.E | Renewal | II | Insect. |
| 600 | Quality International Traders (Pvt.) Ltd.<br>9 - Light Industrial Area, Model Town, Bahawalpur. | Cartap Hydrochloride | 4% G (w/w) (App.-A)<br>& 98% Tech. (w/w) (App.-B) | 05.03.2003 | 28.02.2006 | Rice Stem Borers. | China | Renewal | II | Insect. |
| 601 | Copricorn Associates 714-C, Block 2, Off-Tariq Road, Karachi. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 98 % Tech. (App.-B) | 04.02.2003 | 02.03.2006 | Rice Stem Borers. | China | Renewal | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 602 | Pakistan Agro Chemicals (Pvt.) Ltd, 38-C/iv, Block-6, PECHS,Karachi | Pendimethalin | | 04.08.2000 | 20.12.1999 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 603 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Profenofos | 50% EC (w/v) (App.-A) & 90% Tech. (w/w) (App.-B) | 12.04.2003 | 03.03.2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | France | Renewal | II | Insect. |
| 604 | Ali Akbar Enterprises, Lahore | Monomehypo | | 07.03.2000 | 04.01.2000 | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 605 | Techcare Services (Pvt.) Ltd,Lahore | Pendimethalin | | 08.03.2000 | 27.12.1999 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 606 | Copricorn Associates 714-C, Block 2, Off-Tariq Road, Karachi. | Dimehypo | 4% (w/w) G (App.-A) & 95% Tech. (w/w) (App.-B) | 14.05.2003 | 31.12.2003 | Rice Borers. | China | Renewal / Revised | | Insect. |
| 607 | Welcon Chemicals (Pvt.) Ltd., Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Carbosulfan | | 02.03.2000 | 09.01.1999 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 608 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Monomehypo | 5% (w/w) G (App.-A) & 95% Tech. (w/w) (App.-B) | 21.03.2003 | 07.03.2006 | Rice borers, rice leaf roller, and sugarcane borers. | China | Renewal / Revised | | |
| 609 | Pan Pacific (Pvt.) Ltd. 12 - M, Block - 6, P. E. C. H. S., Karachi. | Chlorpyrifos | 40% (w/v) EC (App.-A) & 94% (w/w) Tech. (App.-B) | 22.05.2003 | 09.02.2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | Renewal | II | Insect. |
| 610 | Granulars (Pvt.) Ltd. Kassam Manzil 1st Floor, 1/29, Randal Road, Karachi. | Cypermethrin | 5% EC (w/v) (Appendix-A) | 19.02.2003 | 09.03.2006 | Cotton Pink Bollworm 500 ml/acre, Cotton Spotted Bollworm 500 ml/acre. | Greece | Renewal | II | Insect. |
| 611 | Acumen(Pvt.) Ltd,Karachi. | Isoproturon | | 15.02.2000 | 12.06.1999 | Weeds in Wheat. | China | | III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 612 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Buprofezin | | 16.03.2000 | 10.12.1999 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 613 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Cartap Hydrochloride | | 11.03.2000 | 27.12.1999 | Rice Stem Borers. | China | | II | Insect. |
| 614 | Elite Agro Services 149 Mall Plaza Mall road, Multan cantt, Multan. | Endosulfan | 35% (W/V) EC (Appendix-A) | 19.06.2003 | 19.03.2006 | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre | London | Renewal / Revised | II | Insect. |
| 615 | Elite Agro Services 149 Mall Plaza Mall road, Multan Cantt. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 17.06.2003 | 19.03.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | London | Renewal / Revised | II | Insect. |
| 616 | Elite Agro Services 149 Mall Plaza Mall road, Multan Cantt. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 17.06.2003 | 19.03.2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | London | Renewal / Revised | II | Insect. |
| 617 | Elite Agro Services 149 Mall Plaza Mall road, Multan Cantt. | Lambda - Cyhalothrin | | 20.03.2000 | 31.01.2000 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 618 | Elite Agro Services 149 Mall Plaza Mall Road, Multan Cantt. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 18.06.2003 | 20.03.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 619 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Endosulfan | 35 EC | 21.03.2000 | 12.02.2000 | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |
| 620 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Fenpropathrin | 20 EC | 21.03.2000 | 27.12.1999 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 621 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Pendimethalin | 33% EC (w/v) (Appendix-A) | 11.06.2003 | 15.03.2006 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | Renewal / Revised | III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 622 | Warble(Pvt) Ltd, Sit 18,3rd Floor, Lahore | Buprofezin | | 18.03.2000 | 19.03.1999 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 623 | National Insecticide Co.,Karachi | Profenofos | | 15.03.2000 | 14.10.1999 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | Suitzerland | | II | Insect. |
| 624 | Welcon Chemical (Pvt.) Ltd, Lahore. | Dimehypo | | 16.03.2000 | 27.12.1999 | Rice Borers. | China | | | Insect. |
| 625 | Reliance Chemicals, Karachi. | Pendimethalin | | 22.03.2000 | 01.07.1999 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 626 | Universal Agro Chemicals (Pvt) Ltd. S-94, S.I.T.E. Karachi. | Endosulfan | 35% (W/V) EC (Appendix-A) | 28.04.2003 | 20.03.2006 | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre | America | Renewal / Revised | II | Insect. |
| 627 | Welcon Chemical (Pvt.) Ltd Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cartap Hydrochloride | | 22.03.2000 | 22.03.1999 | Rice Stem Borers. | China | | II | Insect. |
| 628 | Welcon Chemical (Pvt.) Ltd Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Fenvalerate | 20% (w/v) EC (App.-A) & 92% Tech. (w/w) (App.-B) | 22.05.2003 | 21.03.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Malaysia | Renewal / Revised | II | Insect. |
| 629 | Granulars (Pvt) Ltd, Karachi | Buprofezin | | 27.03.2000 | 31.01.2000 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 630 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Bifenthrin | 10% EC (w/v) (App.-A) & 96% Tech. (w/w) (App.-B) | 23.05.2003 | 29.03.2006 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | Renewal / Revised | | Insect. |
| 631 | Welcon Chemical (Pvt.) Ltd Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Bifenthrin | 10% EC (w/v) (Appendix-A) | 24.04.2003 | 29.03.2006 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | Renewal / Revised | | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 632 | Granulars (Pvt.) Ltd,Kassam Manzil, 1st Floor, 1 / 29,Randal Road, Karachl - 74400. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 09.04.2003 | 29.03.2006 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | Renewal / Revised | II | Insect. |
| 633 | Warble(Pvt) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Buprofezin | 25% (w/w) WP (Appendix - A) | 28.04.2003 | 02.04.2006 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | Renewal / Revised | III | Insect. |
| 634 | Marvi Agrochem (Pvt.) Ltd., 12 - M, Block - 6, P.E.C.H.S., Karachi. | Carbofuran | 3% (w/w) G (App.-A) & 98% (w/w) Tech. (App.-B) | 12.06.2003 | 04.04.2006 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | Renewal | Ib | Insect. |
| 635 | Data Univesal | Methamidophos | 60 SL | 08.04.2000 | 10.07.1999 | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | Germany | | Ib | Insect. |
| 636 | Elite Agro Services 149 Mall Plaza Mall road, Multan cantt, Multan | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 19.06.2003 | 04.04.2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | London | Renewal / Revised | II | Insect. |
| 637 | Elite Agro Services 149 Mall Plaza Mall road, Multan cantt, Multan | Beta-Cypermethrin | | 05.04.2000 | 31.01.2000 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 638 | Ali Akbar Enterprises, Lahore | Esfenvalerate | | 10.04.2000 | 15.01.2000 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 639 | Helb Pesticide and Chemicals Pakistan(Pvt.) Ltd, 131 Mall Plaza Multan Cantt. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 21.03.2003 | 12.04.2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Egypet | Renewal / Revised | II | Insect. |
| 640 | Helb Pesticide and Chemicals Pakistan(Pvt.) Ltd, 131 Mall Plaza Multan Cantt. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 21.03.2003 | 12.04.2006 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | Egypet | Renewal / Revised | II | Insect. |
| 641 | Helb Pesticide and Chemicals Pakistan(Pvt.) Ltd, 131 Mall Plaza Multan Cantt. | Cypermethrin | 20% (w/v) EC (Appendix-A) | 21.03.2003 | 12.04.2006 | Cotton Pink Bollworm 125 ml/acre, Cotton Spotted Bollworm 125 ml/acre. | Egypet | Renewal / Revised | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 642 | Helb Pesticide and Chemicals Pakistan(Pvt.) Ltd, 131 Mall Plaza Multan Cantt. | Chlorpyrifos | 40% (w/v) EC (Appendix-A) | 21.03.2003 | 12.04.2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Egypet | Renewal / Revised | II | Insect. |
| 644 | Satoz Agri (Pvt.) Limited, 34,Club Road, Vehari. | Bifenthrin | | 18.04.2000 | 14.02.2000 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 645 | Farmtech (Pvt.) 12-M, B-6 PECHS,Karachi. | Pendimethalin | | 18.04.2000 | 21.12.1999 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 646 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Pendimethalin | | 21.04.2000 | 12.02.2000 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 647 | Arotech | Chlorpyrifos | | 21.04.2000 | 23.02.2000 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 648 | Grow More | Alpha-Cypermethrin | | 21.04.2000 | 06.11.1999 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | | II | Insect. |
| 649 | Grow More | Lambda - Cyhalothrin | | 21.04.2000 | 30.10.1999 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 650 | Crop Care (Pvt) Lahore | Cartap Hydrochloride | | 21.04.2000 | 16.03.2000 | Rice Stem Borers. | China | | II | Insect. |
| 651 | Nafees (Pvt.) Ltd. 18-H, Vehari. | Pendimethalin | 33% EC (w/v) (Appendix-A) | 29.04.2003 | 21.04.2006 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | Renewal | III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 652 | Helb Pesticide and Chemicals Pakistan(Pvt.) Ltd, 131 Mall Plaza Multan Cantt. | Methamidophos | 60% (w/v) SL (50% w/w) (Appendix-A) | 21.03.2003 | 12.04.2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Egypet | Renewal | Ib | Insect. |
| 653 | Helb Pesticide and Chemicals Pakistan(Pvt.) Ltd, 131 Mall Plaza Multan Cantt. | Deltamethrin | 2.5% EC (w/v) (Appendix-A) | 21.03.2003 | 12.04.2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | Egypet | Renewal / Revised | II | Insect. |
| 655 | Techcare Services (Pvt.) Ltd,Lahore | Cartap Hydrochloride | | 22.04.2000 | 29.03.2000 | Rice Stem Borers. | China | | II | Insect. |
| 656 | Zenith Corporation (Pvt) Ltd. E-12, S.I.T.E., Karachi. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 98% Tech. (w/w) (App.-B, C) | 21.08.2003 | 21.04.2006 | Rice Stem Borers. | China | Renewal | II | Insect. |
| 657 | Wel Green | Alpha-Cypermethrin | | 22.04.2000 | 21.02.2000 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Belgium | | II | Insect. |
| 658 | Ali Akbar Enterprises, Lahore | Carbendazim | | 22.04.2000 | 11.01.2000 | Powdery mildew on grapes, apples and peas and sugarbeet leaf spots. | China | | III | Fung. |
| 659 | Pak China Chemicals, H# 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Cypermethrin | 5% EC (w/v) (App.-A)<br>& 90% (w/w) Tech. (App.-B) | 28.11.2001 | 21.04.2003 | Cotton Pink Bollworm 500 ml/acre<br>Cotton Spotted Bollworm 500 ml/acre | China | Revised | II | Insect. |
| 660 | Ali Akbar Enterprises, Lahore | Methamidophos | | 22.04.2000 | 11.03.2000 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 661 | Sabzazar & Co (Pvt.) Ltd, Karachi. | Acephate | | 22.04.2000 | 20.10.1999 | Cotton pink, spotted and heliothis bollworms, army worm and thrips, whitefly, aphids, jassids. | China | | III | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 662 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Pendimethalin | 33% (w/v) EC (Appendix-A) | 29.04.2003 | 21.04.2006 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | Renewal / Revised | III | Herb. |
| 664 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Cypermethrin | | 04.05.2000 | 05.04.2000 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 665 | Pakistan Agro Chemicals (Pvt.) Ltd, 38-C/iv, Block-6,PECHS,Karachi | Cypermethrin | | 04.05.2000 | 06.03.2000 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 666 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Chlorpyrifos | 40% (w/v) EC | 05.08.2003 | 05.05.2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | Renewal / Revised | II | Insect. |
| 667 | Agrotak (Pvt.) Ltd. 158-B Sheraz Villas, Phase-III, Cavalry Ground, Ext. Cantt. Lahore. | Fenvalerate | 20% (w/w) EC (Appendix-A) | 27.06.2001 | 05.05.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Revised | II | Insect. |
| 668 | Marvi Agrochem (Pvt.) Ltd., 12 - M, Block - 6, P.E.C.H.S., Karachi. | Fenvalerate | 20% (w/w) EC (App.-A) & 88% (w/w) Tech. (App.-B) | 21.05.2001 | 05.05.2003 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Revised | II | Insect. |
| 669 | Edgro (Pvt.) Ltd, Karachi. | Deltamethrin | 2.5 EC | 10.05.2000 | 11.02.2000 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 671 | Nafees (Pvt.) Ltd. 18-H, Vehari. | Isoproturon | 50% WP (w/w) (Appendix-A) | 22.05.2003 | 12.05.2006 | Weeds in Wheat. | China | Renewal | III | Herb. |
| 672 | Nafees (Pvt.) Ltd. 18-H, Vehari. | Mancozeb | 80% WP (w/w) (Appendix-A) | 26.05.2003 | 12.05.2006 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China | Renewal | III | Fung. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 673 | Archer Chemicals (Pvt.) Letd, Lahore | Carbendazim | | 05.05.2000 | 10.07.1999 | Powdery mildew on grapes, apples and peas and sugarbeet leaf spots. | Taiwan | | III | Fung. |
| 674 | Well Agro Wise (Pvt) Ltd, Multan. | Methamidophos | | 04.05.2000 | 17.02.1999 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 675 | Seatco (Pvt.) Ltd.,133-N, Block, Model Town, Lahore-54700 | Carbendazim | 50% (w/w) WP | 20.08.2003 | 05.05.2006 | Powdery mildew on grapes, apples and peas and sugarbeet leaf spots. | China | Renewal / Revised | III | Fung. |
| 678 | Pace Pesticide Multan | Buprofezin | | 15.05.2000 | 22.03.1999 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 679 | S.Essa (Pvt.) Ltd, Karachi. | Monocrotophos | 40 WSC | 17.05.2000 | 06.05.1999 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Singapure | | Ib | Insect. |
| 680 | Jugnu Enterprises,Room No. 4, 2nd Floor, Arkay Square, Extention,Shahrah-e-Liaquat, Karachi-74000. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 30.07.2003 | 12.05.2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Renewal / Revised | II | Insect. |
| 681 | Elite Agro Services<br>149 Mall Plaza Mall road, Multan cantt, Multan. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 19.06.2003 | 16.05.2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 682 | Elite Agro Services<br>149 Mall Plaza Mall road, Multan cantt, Multan. | Carbofuran | 3% (W/W) G 97% Tech | 17.05.2000 | 21.04.2000 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | China | | Ib | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 683 | Elite Agro Services 149 Mall Plaza Mall road, Multan cantt, Multan. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 25.06.2003 | 16.05.2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | | II | Insect. |
| 684 | Mehdi (Pvt.) Ltd, Karachi. | Beta-Cypermethrin | | 17.05.2000 | 18.04.2000 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 685 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Dicofol | 18.5% (w/v) EC (Appendix-A) | 22.05.2003 | 16.05.2006 | Mites of cotton, sugarcane, apples and almonds. | China | Renewal / Revised | III | Acar. |
| 686 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Alpha-Cypermethrin | 4.5%EC | 17.05.2000 | 31.01.2000 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | | II | Insect. |
| 687 | Elite Agro Services 149 Mall Plaza Mall road, Multan Cantt. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 18.06.2003 | 16.05.2006 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | Renewal / Revised | II | Insect. |
| 688 | Elite Agro Services 149 Mall Plaza Mall road, Multan cantt, Multan | Chlorpyrifos | | 17.05.2000 | 31.01.2000 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 689 | Elite Agro Services 149 Mall Plaza Mall road, Multan cantt, Multan | Isoproturon | 50SC | 17.05.2000 | 21.04.2000 | Weeds in Wheat. | China | | III | Herb. |
| 690 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 14.05.2003 | 16.05.2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.A.E | Renewal / Revised | II | Insect. |
| 691 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Mancozeb | 80% (w/w) WP | 22.09.2003 | 16.05.2006 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China | Renewal / Revised | III | Fung. |
| 692 | Kissan Supplies and Services | Butachlor | 60% (w/v) EC (Appendix-A) | 28.04.2003 | 16.05.2006 | Weed control in Paddy. | China | Renewal / Revised | III | Herb. |
| 693 | Dawn Agro Services (Private) Limited, 34/A, Street No.2, Jinnah Town, Sadiqabad- 54350. | Beta-Cypermethrin | 4.5% (w/v) EC (Appendix-A) | 22.05.2003 | 12.05.2006 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | Renewal / Revised | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 694 | Pan Pacific (Pvt) Ltd, Karachi | Bifenthrin | | 22.06.2001 | 15.05.2002 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | Revised | | Insect. |
| 695 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 24.05.2003 | 16.05.2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.A.E | Renewal | II | Insect. |
| 696 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Isoproturon | | 17.05.2000 | 20.11.1999 | Weeds in Wheat. | China | | III | Herb. |
| 697 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Isoproturon | 500 g/l SC (App.-A) | 07.06.2003 | 16.05.2006 | Weeds in Wheat. | U.A.E | Renewal | III | Herb. |
| 698 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Deltamethrin | | 17.05.2000 | 01.06.1999 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 699 | Unica Inernational (Pvt.) Ltd, Lahore | Alpha-Cypermethrin | | 17.05.2000 | 08.05.2000 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | | II | Insect. |
| 700 | Unica Inernational (Pvt.) Ltd, Lahore | Beta-Cypermethrin | | 17.05.2000 | 08.05.2000 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 701 | Unica Inernational (Pvt.) Ltd, Lahore | Chlorpyrifos | | 17.05.2000 | 03.05.2000 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 702 | Unica Inernational (Pvt.) Ltd, Lahore | Fenpropathrin | 20 EC | 17.05.2000 | 08.05.2000 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 703 | Burhan Chemicals (Pvt.) Ltd 35 - E, Shah Rukan-e-Alam Colony, Multan. | Lambda - Cyhalothrin | 2.5% EC (w/v) (Appendix-A) | 19.05.2003 | 18.05.2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Renewal / Revised | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 704 | Kisan Supplies Services Ltd. 645-C, Faisal Town, Lahore. | Monocrotophos | 40% WSC (w/v) | 20.08.2003 | 16.05.2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | China | Renewal / Revised | Ib | Insect. |
| 705 | Elite Agro Services 149 Mall Plaza Mall road, Multan cantt, Multan | Cartap Hydrochloride | 4 G, 98% Tech | 17.05.2000 | 21.04.2000 | Rice Stem Borers. | China | | II | Insect. |
| 706 | Elite Agro Services 149 Mall Plaza Mall road, Multan cantt, Multan | Profenofos | 40 EC | 17.05.2000 | 21.04.2000 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 707 | Acumen (Pvt.) Ltd, Karachi. | Carbendazim | | 17.05.2000 | 08.04.1999 | Grape, Apple, Peas Powdery Mildew and sugarbeet Leaf spots. | China | | III | Fung. |
| 708 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Bifenthrin | | 17.05.2000 | 18.04.2000 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 709 | S. ESSA 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Buprofezin | 25% (w/w) WP (Appendix-A) | 07.06.2003 | 16.05.2006 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | Renewal / Revised | III | Insect. |
| 710 | S. ESSA 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Cypermethrin | | 17.05.2000 | 11.05.2000 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Singapure | | II | Insect. |
| 711 | S. ESSA 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Alpha-Cypermethrin | | 18.05.2000 | 11.05.2000 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Singapure | | II | Insect. |
| 712 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 19.05.2003 | 16.05.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 713 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Metalaxyl + Mancozeb | 72% (w/w) WP | 16.08.2003 | 17.05.2006 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | Renewal / Revised | III | Herb. |
| 714 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Buprofezin | 25% (w/w) WP (Appendix - A) | 22.05.2003 | 17.05.2006 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | Renewal | III | Insect. |
| 715 | Archer Chemicals (Pvt.) Letd, Lahore | Lambda - Cyhalothrin | 2.5 EC | 18.05.2000 | 03.02.2000 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 716 | Radix Chemical, (Pvt.) Ltd, Multan | Alpha-Cypermethrin | | 17.05.2000 | 22.02.2000 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | | II | Insect. |
| 717 | Sultan Multi Trading (Pvt.) Ltd. Suit # 4, 2nd Floor, 3 Civic Centre, Central Plaza, New Garden Town, Lahore. | Isoproturon | 50% (w/w) WP | 05.08.2003 | 17.05.2006 | Weeds in Wheat. | China | Renewal / Revised | III | Herb. |
| 718 | Sultan Multi Traders (Pvt.) Ltd, 27 Ali Block, New Garden Town, Lahore. | Cartap Hydrochloride | 4 G, 98% Tech | 17.05.2000 | 16.03.2000 | Rice Stem Borers. | China | | II | Insect. |
| 719 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 26.05.2003 | 16.05.2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.A.E | Renewal / Revised | II | Insect. |
| 720 | United Distributors Pakistan Ltd | Lambda - Cyhalothrin | | 18.05.2000 | 19.05.1999 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 721 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 26.05.2003 | 17.05.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.A.E | Renewal / Revised | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 722 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Endosulfan | 35% (W/V) EC (Appendix-A) | 26.05.2003 | 17.05.2006 | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre | U.A.E | Renewal | II | Insect. |
| 723 | Zagro NPC (Pvt.) Ltd. 25-Y Main Road, New Multan. | Profenofos | 40% (w/v) EC | 20.08.2003 | 05.05.2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | Malaysia | Renewal / Revised | II | Insect. |
| 724 | Zagro NPC (Pvt.) Ltd. 25-Y Main Road, New Multan. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 07.06.2003 | 05.05.2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Malaysia | Renewal / Revised | II | Insect. |
| 725 | Dawn Agro Services (Private) Limited, 34 - 2/A, Jinnah Town, Sadiqabad- 54350. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 18.06.2003 | 21.06.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 726 | Green Grow (Pvt.) Ltd. 225-Shadman Colony Bahawalpur. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 12.06.2003 | 23.06.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 727 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Imidacloprid | | 28.06.2000 | 27.12.1999 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 728 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Imidacloprid | 25% EC (w/v) (Appendix-A) | 10.07.2003 | 27.06.2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | Renewal | II | Insect. |
| 729 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Imidacloprid | 25% EC (w/v) (Appendix-A) | 10.07.2003 | 27.06.2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | Renewal / Revised | II | Insect. |
| 730 | Universal Agro Chemicals (Pvt.) Ltd. S - 94, S.I.T.E. Karachi. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 01.07.2003 | 25.06.2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | Renewal / Revised | II | Insect. |
| 731 | Quality International Traders | Imidacloprid | 25% (w/w) WP | 10.07.2003 | 05.07.2006 | Cotton Jassids, whitefly and thrips, rice | China | Renewal | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | (Pvt.) Ltd.<br>9 - Light Industrial Area,<br>Model Town, Bahawalpur. | | (Appendix - A) | | | plant hoppers and apple aphids. | | | | |
| 732 | Edgro (Pvt.) Ltd., Marine Trade Centre,<br>BC - 3, Kehkashan, Block - 9,<br>Clifton, Karachi - 75600. | Profenofos | 40% EC W/W (App.-A) & 85% W/W Tech. (App.-B) | 29.03.2001 | 07.05.2003 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | Renewal / Revised | II | Insect. |
| 733 | Edgro (Pvt.) Ltd., Marine Trade Centre,<br>BC - 3, Kehkashan, Block - 9,<br>Clifton, Karachi - 75600. | Endosulfan | 35% (W/V) EC (App.-A) & 94% (W/W) Tech. (App.-B) | 29.03.2001 | 06.07.2003 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China / UAE | Renewal / Revised | II | Insect. |
| 734 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 29.07.2003 | 05.07.2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 735 | ICI Pakistan Ltd., ICI House,<br>63 - Mozang Road, Lahore. | Chlorpyrifos | | 11.07.2000 | 27.12.1999 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 736 | Pak China Chemicals<br>1 - Km Bhoptian Chowk,<br>Defence Road off Raiwind Road, Lahore. | Imidacloprid | 25% WP (w/w) (Appendix-A) | 18.06.2003 | 07.07.2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | Renewal / Revised | II | Insect. |
| 737 | Zagro NPC (Pvt.) Ltd.<br>25-Y Main Road, New Multan. | Endosulfan | 35% (w/v) EC | 06.08.2003 | 10.07.2006 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Malaysia | Renewal / Revised | II | Insect. |
| 738 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Imidacloprid | 25% (W/W) WP (Appendix - A) | 31.03.2001 | 07.12.2003 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | REVISED | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 739 | Chemgro Internation (Pvt.) Ltd, Lahore | Methamidophos | | 06.07.2000 | 08.01.1999 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 740 | Du Ponet Pakistan Opration (Pvt.) Ltd, Karachi. | Deltamethrin | | 19.07.2000 | 24.06.2000 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | Switzerland | | II | Insect. |
| 741 | Archer Chemicals (Pvt.) Letd, Lahore | Cypermethrin | | 21.07.2000 | 04.07.2000 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 742 | Welgreen Chemical (Pvt.) Ltd, Lahore | Bromoxynil + MCPA | | 24.07.2000 | 21.02.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | Belgium | | II +III | Herb. |
| 743 | Excellsior Inter. (Pvt)Ltd, Lahore | Mancozeb | | 13.07.2000 | 04.03.2000 | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 744 | Radix Chemical, (Pvt.) Ltd, Multan | Bromoxynil + MCPA | | 24.07.2000 | 22.02.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | Belgium | | II +III | Herb. |
| 745 | HELB Pesticides & Chemicals Pakistan (Pvt.) Ltd. 131 Mall Plaza Quid-e-Azam Road, Multan Cant. | Fenvalerate | 20 % (w/v) EC (Appendix-A) | 05.08.2003 | 02.08.2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Egypt | Renewal / Revised | II | Insect. |
| 746 | Kisan Supplies Services Ltd. 645-C, Faisal Town, Lahore. | Fenvalerate | 20% (w/v) EC | 05.08.2003 | 04.08.2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | Renewal / Revised | II | Insect. |
| 747 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 15.07.2003 | 04.08.2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.A.E | Renewal / Revised | II | Insect. |
| 748 | Pakistan Agro Chemicals (Pvt.) Ltd, Karachi. | Isoproturon | | 18.08.2000 | 26.06.2000 | Weeds in Wheat. | South Africa | | III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 749 | Dada Jee Corporation, Lahore. | Thiophanate Methyl | 70 % WP | 24.08.2000 | 09.02.2000 | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | China | | III | Fung. |
| 750 | Kisan Supplies Services Ltd. 645-C, Faisal Town, Lahore. | Isoproturon | 500 FW (w/v) | 20.08.2003 | 25.08.2006 | Weeds in Wheat. | Saudi Arabia | Renewal | III | Herb. |
| 751 | Seatco (Pvt.) Ltd. 133-N, Block, Model Town, Lahore. | Thiophanate Methyl | 70% (w/w) WP | 06.09.2003 | 23.08.2006 | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | China | Renewal | III | Fung. |
| 752 | U.M.Enterprises Karachi. | Cypermethrin | | 26.08.2000 | 29.04.1998 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Saudi Arabia | | II | Insect. |
| 753 | Cortec International (Pvt.) Ltd, Lahore. | Metalaxyl + Mancozeb | 72 % (W/W)WP | 30.08.2000 | 24.08.2000 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 754 | Archer Chemicals (Pvt.) Ltd, Lahore | Metalaxyl + Mancozeb | 72 % (W/W)WP | 31.08.2000 | 05.08.2000 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 755 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Isoproturon | 50 WP (w/w) | 06.09.2003 | 29.08.2006 | Weeds in Wheat. | U.A.E | Renewal | III | Herb. |
| 756 | Pan Pacific (Pvt.) Ltd, Karachi. | Bromoxynil + MCPA | 200/200 EC | 04.09.2000 | 22.04.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | U.K | | II +III | Herb. |
| 757 | Marvi Agrochem (Pvt)Ltd | Mancozeb | 80% (W/W)WP | 06.09.2000 | 13.11.1999 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 758 | Granulars (Pvt) Ltd, Karachi. | Bromoxynil + MCPA | 200/200 EC | 07.09.2000 | 06.03.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |
| 759 | Chem Agro Internation (Pvt.) Ltd, Karachi. | Bromoxynil + MCPA | 200/200 EC | 07.09.2000 | 13.09.1999 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 760 | Marvi Agrochem (Pvt)Ltd | Bromoxynil + MCPA | 200/200 EC | 07.09.2000 | 02.02.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |
| 761 | Acumen (Pvt.) Ltd, Karachi. | Metalaxyl + Mancozeb | 72 % (W/W)WP | 07.09.2000 | 10.08.1999 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 762 | National Insecticide Company(Pvt) Ltd,Karachi. | Bromoxynil + MCPA | 200/200 EC | 07.09.2000 | 03.02.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |
| 763 | Marvi Agrochem (Pvt)Ltd | Copper Oxychloride | | 14.09.2000 | 04.03.2000 | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight, 1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | China | | III | Fung. |
| 764 | Marvi Agrochem (Pvt)Ltd | Metalaxyl + Mancozeb | | 14.09.2000 | 07.09.1999 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 765 | Pakistan Agro Chemicals (Pvt.) Ltd, Karachi. | Cypermethrin | 10% EC | 14.09.2000 | 20.06.2000 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | South Africa | | II | Insect. |
| 766 | Vital Chemicals Corporation, Lahore. | Mancozeb | 80% (W/W)WP | 16.09.2000 | 20.04.1999 | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 767 | Vital Chemicals Corporation, Lahore. | Metalaxyl + Mancozeb | 72 % (W/W)WP | 16.09.2000 | 03.05.2000 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 768 | Vital Chemicals Corporation, Lahore. | Bromoxynil + MCPA | 200/200 EC | 16.09.2000 | 03.05.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 769 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Metribuzin | 70% WP (w/w) (Appendix- A) | 23-09-2002 | 13.10.2003 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | Revised | III | Herb. |
| 770 | Warble(Pvt) Ltd, Sit 18,3rd Floor, Lahore | Bromoxynil + MCPA | 200/200 EC | 14.10.2000 | 12.05.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | U.A.E | | II +III | Herb. |
| 771 | Capricon Associates Karachi. | Carbofuran | 3 % (W/W)G | 16.10.2000 | 19.06.2000 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 772 | Farming Sense (Pvt.) Ltd, Multan. | Buprofezin | 25 % (w/w) WP | 12.10.2000 | 27.08.1999 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 773 | Techcare Services (Pvt.) Ltd. Lahore. | Metalaxyl + Mancozeb | 72 % (W/W)WP | 16.10.2000 | 27.12.1999 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 774 | Pan Pacific (Pvt.) Ltd, Karachi. | Metribuzin | 70 % WP | 17.10.2000 | 20.09.2000 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | | III | Herb. |
| 775 | Pace Pesticide (Pvt.) Ltd, Multan. | Isoproturon | | 18.10.2000 | 15.07.2000 | Weeds in Wheat. | China | | III | Herb. |
| 776 | Agrotech Pesticides 17-H, Vehari, | Methamidophos | 60 SL | 18.10.2000 | 24.08.2000 | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 777 | Dawn Agro Services (Pvt) Ltd, Sadiqabad. | Bromoxynil + MCPA | 200/200 EC | 18.10.2000 | 16.09.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | U.K | | II +III | Herb. |
| 778 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Bromoxynil + MCPA | 200/200 EC (20% w/v + 20% w/v) (Appendix-A) | 06.07.2001 | 18.10.2003 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | U.K | Revised | II +III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 779 | Sabzazar & Co (Pvt.) Ltd, Karachi. | Pendimethalin | 33 % (W/V)EC | 21.10.2000 | 18.04.2000 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 780 | Archer Chemicals (Pvt.) Letd, Lahore | Bromoxynil + MCPA | 200/200 EC | 21.10.2000 | 24.08.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |
| 781 | Cortec International (Pvt.) Ltd, Lahore. | Bromoxynil + MCPA | 200/200 EC | 21.10.2000 | 24.08.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | U.K | | II +III | Herb. |
| 782 | Solex Chemicals (Pvt.) Ltd, Multan. | Bromoxynil + MCPA | 200/200 EC | 25.10.2000 | 29.03.2000 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |
| 783 | Agrolet Chemicals Industries 711- X, D.H.A., Lahore Cantt. | Pendimethalin | 33% EC (w/v) (Appendix-A) | 20.03.2002 | 25.10.2003 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | Revised | III | Herb. |
| 784 | Weal AG Corporation, Lahore. | Methamidophos | 60 SL | 26.10.2000 | 17.07.1999 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 785 | Helb Pesticide & Chemicals Pakistan (Pvt.) Ltd, Multan. | Endosulfan | 35 (W/V)EC | 26.10.2000 | 31.07.2000 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Egypt | | II | Insect. |
| 786 | Helb Pesticide & Chemicals Pakistan (Pvt.) Ltd, Multan. | Metalaxyl + Mancozeb | 72 % (W/W)WP | 27.10.2000 | 31.07.2000 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | Egypt | | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 787 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Pendimethalin | 33 % (W/V)EC | 26.10.2000 | 20.03.2000 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 788 | Zagro NPC (Pvt.) Ltd, Karachi. | Mancozeb | 80 % (W/W)WP | 26.10.2000 | 29.03.2000 | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | Malaysia | | III | Fung. |
| 789 | Agrolet International Lahore. | Lambda - Cyhalothrin | 2.5 EC | 26.10.2000 | 08.04.2000 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 790 | Green Grow (Pvt.) Ltd,225-Shadman Colony Bahawalpur. | Endosulfan | 35 (W/V)EC | 27.10.2000 | 29.03.2000 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |
| 791 | Nafees (Pvt.) Ltd, 18-H, Vehari. | Imidacloprid | 25% (W/W)WP | 07.11.2000 | 13.09.2000 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 792 | Helb Pesticide & Chemicals Pakistan (Pvt.) Ltd, Multan. | Imidacloprid | 25% (W/W)WP | 07.11.2000 | 19.09.2000 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | Egypt | | II | Insect. |
| 793 | Khawaja Agro Cemicals , Lahore. | Mancozeb | 80% (W/W)WP | 14.11.2000 | 13.09.2000 | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 794 | Granulars (Pvt) Ltd, Kassam Manzil 1st Floor, 1/29, Randal Road,Karachi. | Quinalphos | 25% EC(W/W) | 14.11.2000 | 12.10.1999 | Cotton pest complex and sugarcane, borers. | China | | II | Insect. |
| 795 | Agi Mark Services, Karachi. | Endosulfan | 35% (W/V)EC | 15.11.2000 | 22.03.2000 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Cyprus | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 796 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Isoproturon | 50% WP | 15.11.2000 | 16.09.2000 | Weeds in Wheat. | U.A.E | | III | Herb. |
| 797 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Isoproturon | 500 FW | 15.11.2000 | 16.09.2000 | Weeds in Wheat. | U.A.E | | III | Herb. |
| 798 | Solex Chemicals (Pvt.) Ltd, Multan. | Isoproturon | 50% WP | 15.11.2000 | 04.09.2000 | Weeds in Wheat. | China | | III | Herb. |
| 799 | Vital Chemicals Corporation, Lahore. | Isoproturon | 50% FW(W/V) | 17.11.2000 | 28.10.2000 | Weeds in Wheat. | U.A.E | | III | Herb. |
| 800 | Vital Chemicals Corporation, Lahore. | Isoproturon | 50% WP(W/W) | 18.11.2000 | 28.10.2000 | Weeds in Wheat. | U.A.E | | III | Herb. |
| 801 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Isoproturon | 50% WP (w/w) (Appendix-A) | 09.04.2002 | 17.11.2003 | Weeds in Wheat. | China | Revised | III | Herb. |
| 802 | Welcon Chemical (Pvt.) Ltd, Lahore. | Isoproturon | 75% WP(W/W) | 20.11.2000 | 04.10.2000 | Weeds in Wheat. | U.A.E | | III | Herb. |
| 803 | Solex Chemicals (Pvt.) Ltd, Multan. | Isoproturon | 500 FW(W/V) | 12.12.2000 | 09.10.2000 | Weeds in Wheat. | London | | III | Herb. |
| 805 | Pan Pacific (Pvt.) Ltd., 12 - M, Block - 6, P.E.C.H.S., Karachi. | Imidacloprid | 25% (w/v) EC (App.-A) & 85% (w/w) Tech. (App.-B) | 21.05.2001 | 12.11.2003 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | REVISED | II | Insect. |
| 806 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Isoproturon | 50% WP(W/W) | 12.12.2000 | 26.9.2000 | Weeds in Wheat. | China | | III | Herb. |
| 807 | Econ Co-operation, Lahore | Monomehypo | 5% G | 22.01.2001 | | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 808 | Agri Mark Services, Karachi. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 22.01.2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Malaysia | | II | Insect. |
| 809 | Pak China Chemicals, H# 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Beta-Cypermethrin | 4.5% (w/w) (App.-A) & 90% Tech. (w/w) (App.-B) | 02.06.2001 | 23.01.2004 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | REVISED | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 810 | Pak China Chemicals, H# 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 98 % Tech. (App.-B) | 23.05.2001 | 23.01.2004 | Rice Stem Borers. | China | REVISED | II | Insect. |
| 811 | Khawaja Agro Cemicals , Lahore. | Cypermethrin | 10 % (w/w) EC (Appendix-A) | 24.01.2001 | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 812 | Helb Pesticide & Chemicals Pakistan (Pvt.) Ltd, Multan. | Profenofos | 50% EC(W/W) | 24.01.2001 | | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | Egypt | | II | Insect. |
| 813 | Burhan Chemicals , Multan | Isoproturon | 50% WP(W/W) | 24.01.2001 | | Weeds in Wheat. | China | | III | Herb. |
| 814 | Pak China Chemicals, H# 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Monomehypo | 5% G (App.-A) & 95% Tech. (w/w) (App.-B) | 23.05.2001 | 24.01.2004 | Rice borers, rice leaf roller, and sugarcane borers. | China | Revised | | |
| 815 | Pak China Chemicals, H# 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Deltamethrin | 2.5% EC (w/v) (App.-A) & 98% Tech. (w/w) (App.-B) | 28.11.201 | 24.01.2004 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | Revised | II | Insect. |
| 816 | S.Essa, Karachi. | Quinalphos | 20% 'EC(W/V) | 29.01.2001 | | Cotton pest complex and sugarcane, borers. | U.K | | II | Insect. |
| 817 | Solex Chemicals (Pvt.) Ltd, Multan. | Bromoxynil + MCPA | 200/200 EC | 30.01.2001 | | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | London | | II +III | Herb. |
| 818 | R.B.Avari Enterprises (Pvt.) Ltd., Karachi. | Deltamethrin | 2.5% EC | 29.01.2001 | | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 819 | Green Gro (Pvt.) Ltd Bhawalpur. | Bromoxynil + MCPA | 200/200 EC | 15.02.2001 | | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | England | | II +III | Herb. |
| 820 | Ali Akbar Enterprises Lahore Cantt. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 12.02.2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.A.E | | II | Insect. |
| 821 | Agri Mark Services, Karachi. | Esfenvalerate | 5 % EC (w/w) | 14.02.2001 | | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 822 | Helb Pesticide & Chemicals Pakistan (Pvt.) Ltd, Multan. | Buprofezin | 25 % (w/w) WP | 14.02.2001 | | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | Egypt | | III | Insect. |
| 823 | Integrated Pest Management (Pvt.) Ltd, Multan. | Buprofezin | 25 % (w/w) WP | 14.02.2001 | | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 825 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Monomehypo | 5% (w/w) G (App.-A) & 95% Tech. (App.-B) | 29.04.2003 | 13.02.2004 | Rice borers, rice leaf roller, and sugarcane borers. | China | Revised | | |
| 826 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Metalaxyl + Mancozeb | 72 % (W/W)WP | 15.02.2001 | | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 827 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Bromoxynil + MCPA | 200/200 EC | 15.02.2001 | | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | U.A.E | | II +III | Herb. |
| 828 | Agri Mark Services, Karachi. | Profenofos | 40% (w/w) EC (Appendix - A) | 14.02.2001 | | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 829 | Welgreen Chemical (Pvt.) Ltd., Lahore. | Cartap Hydrochloride | 4% G & 98% Tech. | 17.02.2001 | | Rice Stem Borers. | China | | II | Insect. |
| 830 | S.Essa, Karachi. | Bromoxynil + MCPA | 200/200 EC | 16.02.2001 | | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |
| 831 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Carbofuran | 3% (w/w) G (App.-A) & 97% Tech. (w/w) (App.-B) | 25.04.2003 | 28.02.2004 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | Revised | Ib | Insect. |
| 832 | Agri Pest Management (Pvt.) Ltd., Multan. | Lambda - Cyhalothrin | 2.5 EC | 02.03.2001 | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 833 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Dimehypo | 4% (w/w) G (App.-A) & 95% Tech. (w/w) (App.-B) | 29.04.2003 | 27.02.2004 | Rice Borers. | China | Revised | | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 834 | S.Essa, Karachi. | Bromoxynil + MCPA | 200/200 EC | 01.03.2001 | | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | Singapore | | II +III | Herb. |
| 835 | Agrolet International Lahore. | Isoproturon | 50% WP(W/W) | 02.03.2001 | | Weeds in Wheat. | U.A.E | | III | Herb. |
| 836 | Welgreen Chemical (Pvt.) Ltd., Lahore. | Lambda - Cyhalothrin | 200%200 EC(W/V) | 02.03.2001 | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 837 | National Insecticides Company (Pvt.) Ltd, Karachi. | Chlorpyrifos | 40%EC & 94% Tech. W/W | 28.03.2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 838 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Isoproturon | 500 FW (Appendix-A) | 22.04.2002 | 27.03.2004 | Weeds in Wheat. | U.A.E | Renewal | III | Herb. |
| 839 | Chem. Agro International, Islamabad. | Monomehypo | 5%G & 95%Tech W/W | 28.03.2001 | | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 840 | Dada Jee Corporation, Lahore. | Isoproturon | 75% WP(W/W) | 28.03.2001 | | Weeds in Wheat. | U.A.E | | III | Herb. |
| 841 | Welgreen Chemical (Pvt.) Ltd., Lahore. | Monomehypo | 5%G & 95%Tech W/W | 28.03.2001 | | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 842 | National Insecticides Company (Pvt.) Ltd, Karachi. | Imidacloprid | 25% WP(W/W) | 10.04.2001 | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 844 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Alpha-Cypermethrin | 5% EC (w/v) (Appendix-A) | 29.04.2003 | 11.04.2004 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | UK | Revised | II | Insect. |
| 845 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Cypermethrin | 10 % (w/v) EC (Appendix-A) | 24.05.2003 | 11.04.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | UK | Revised | II | Insect. |
| 846 | Welcon Chemical (Pvt.) Ltd, Lahore. | Metribuzin | 70% WP | | | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 847 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Diafenthiuron | 50% SC(W/V) | | | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China | | III | Insect. |
| 848 | Nafees (Pvt) Ltd., Vehari. | Diafenthiuron | 50% SC(W/V) | | | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China | | III | Insect. |
| 849 | Nafees (Pvt) Ltd., Vehari. | Acetochlor | 50% (w/w) EC | | | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 850 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cypermethrin | 10% (w/v) EC (App. -A) & 92% (w/w) Tech. (App.-B) | 04.02.2003 | 11.04.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | Revised | II | Insect. |
| 851 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Alpha-Cypermethrin | 5% EC (w/w) (Appendix-A) | 09.04.2002 | 20.04.2004 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.A.E | Revised | II | Insect. |
| 852 | Agrolet International Lahore. | Diafenthiuron | 50%SC W/V | | | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China | | III | Insect. |
| 853 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Cypermethrin | 10% EC (w/w) (Appendix-A) | 09.04.2002 | 20.04.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.A.E | Revised | II | Insect. |
| 854 | Kapadin Intdernational (Pvt.) Ltd., Karachi. | Alpha-Cypermethrin | 5% W/W EC | | | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Saudi Arabia. | | II | Insect. |
| 855 | Agri Pest Management (Pvt.) Ltd., Multan. | Beta-Cypermethrin | 4.5 % (w/w) EC (Appendix-A) | | | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 856 | Capricorn Associate, Karachi. | Monomehypo | 5%G & 95%Tech W/W | | | Rice borers, rice leaf roller, and sugarcane borers. | | | | |
| 857 | Bayer CropSciense (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Agea, Karachi-74900. | Cypermethrin | 10% (w/v) EC (App. -A) & 92% (w/w) Tech. (App.-B) | 20.01.2003 | 29.04.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | France | Revised | II | Insect. |
| 858 | Bayer CropSciense (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Agea, Karachi-74900. | Alpha-Cypermethrin | 5% (w/v) EC (App.-A) & 95% Tech. (w/w) (App.-B) | 04.02.2003 | 29.04.2004 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | France | Revised | II | Insect. |
| 859 | Agrolet International Lahore. | Cypermethrin | 10 % (w/w) EC (Appendix-A) | | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 860 | Agri Mark Services, Karachi. | Methamidophos | 60% SL W/V | | | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Mayasia | | Ib | Insect. |
| 861 | FarmEco (Pvt.) Ltd., 262-B, Gulgasht Colony, Multan. | Methamidophos | 60% SL (w/v) (Appendix-A) | 10.06.2002 | 04.05.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China. | Revised | Ib | Insect. |
| 862 | Chemgro International (Pvt.) Ltd., Lahore. | Monomehypo | 5%G & 95%Tech W/W | | | Rice borers, rice leaf roller, and sugarcane borers. | China. | | | |
| 863 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Deltamethrin | 2.5%EC W/V | | | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China. | | II | Insect. |
| 864 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 95% (w/w) Tech. (App.-B) | 11.06.2003 | 04.05.2004 | Rice Stem Borers. | China. | Revised | II | Insect. |
| 865 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Ametryn + Atrazine | 80% WP | | | Weeds in maize, rice and sugarcane. | China. | | III | Herb. |
| 866 | Wel Agro Wise (Pvt.) Ltd. 47/A Industrial Estate, Multan. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 07.10.2003 | 04.05.2004 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 867 | Agri Pest Management (Pvt.) Ltd., Multan. | Cypermethrin | 10 % (w/w) EC (Appendix-A) | | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 868 | Farming Sense (Pvt.) Ltd., Multan | Cypermethrin | 10 % (w/w) EC (Appendix-A) | | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 869 | Farming Sense (Pvt.) Ltd., Multan | Methamidophos | 60%SL W/V | | | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China. | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 870 | Pan Pacific (Pvt,) Ltd., Karachi. | Monomehypo | 5%G & 95%Tech W/W | | | Rice borers, rice leaf roller, and sugarcane borers. | China. | | | |
| 871 | FarmEco (Pvt.) Ltd., 262-B, Gulgasht Colony, Multan. | Buprofezin | 25 % WP (w/w) (Appendix-A) | 10.06.2002 | 10.05.2004 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China. | Revised | III | Insect. |
| 872 | FarmEco (Pvt.) Ltd., 262-B, Gulgasht Colony, Multan. | Fenvalerate | 20% (w/w) EC (Appendix-A) | 10.06.2002 | 10.05.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 873 | Pan Pacific (Pvt,) Ltd., Karachi. | Buprofezin | 25% & 95% Tech. EC(W/W) | | | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China. | | III | Insect. |
| 874 | Prizm Agro Marketing (Pvt.) Ltd., Vehari. | Buprofezin | 25 % (w/w) WP | | | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China. | | III | Insect. |
| 875 | Prizm Agro Marketing (Pvt.) Ltd., Vehari. | Isoproturon | 50% WP(W/W) | | | Weeds in Wheat. | China. | | III | Herb. |
| 876 | United Distributors Pakistan Limited, Karachi. | Cypermethrin | 10% EC | | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 877 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Monomehypo | 5% G (w/w) (App.-A) & 95% (w/w) Tech. (App.-B) | 23.07.2002 | 09.05.2004 | Rice borers, rice leaf roller, and sugarcane borers. | China. | REVISED | | |
| 878 | Kapadin Intdernational (Pvt.) Ltd., Karachi. | Fenvalerate | 20 %( w/w) EC | | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 880 | Agrolet International 131/3, Kot Lakhpat Industrial Estate, Lahore. | Fenvalerate | 20 %( w/w) EC | | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 881 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Esfenvalerate | 5% EC (w/w) (App.-A) & 90% (w/w) Min. Tech. (App.-B) | 16.03.2002 | 18.05.2004 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | Revised | II | Insect. |
| 882 | Zagro (Pvt.) Ltd., Karachi. | Lambda - Cyhalothrin | 2.5 EC W/V | | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 883 | S.Essa, Karachi. | Diafenthiuron | 50% SC(W/W) | | | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China. | | III | Insect. |
| 884 | Seatco (Pvt.) Ltd., Karachi. | Diafenthiuron | 50% SC(W/W) | | | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China. | | III | Insect. |
| 885 | Green Gro (Pvt.) Ltd Bhawalpur. | Buprofezin | 25 % (w/w) WP | | | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China. | | III | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 886 | Sultan Multi Trading (Pvt.) Ltd., Lahore. | Isoproturon | 500 FW(W/V) | | | Weeds in Wheat. | China. | | III | Herb. |
| 887 | Dawn Agro Services (Pvt.) Ltd., Sadiqabad. | Imidacloprid | 25% EC(W/W) | | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 888 | Helb Pesticide & Chemicals Pakistan (Pvt.) Ltd, Multan. | Monocrotophos | 40 WSC | | | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | Egypt. | | Ib | Insect. |
| 889 | Elite Agro Services, Multan Cantt. | Imidacloprid | 25% (W/W)WP | | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 890 | National Insecticides Company (Pvt.) Ltd, Karachi. | Diafenthiuron | 50% & 92%Tech SC & Tech(W/W) | | | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China. | | III | Insect. |
| 891 | Marvi Agrochem (Pvt.) Ltd., Karachi. | Fenpropathrin | 20 %( w/w) EC (Appendix-A) | | | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | | II | Insect. |
| 892 | FarmEco Enterprises, 262-B, Gulgasht Colony, Bosan Road, Multan. | Fenpropathrin | 20% ( w/w) EC (Appendix-A) | 27.06.2002 | 28.05.2004 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | Revised | II | Insect. |
| 893 | Granulars (Pvt.) Ltd., Karachi. | Fenpropathrin | 20 %( w/w) EC (Appendix-A) | | | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | | | II | Insect. |
| 894 | Solex Chemicals (Pvt.) Ltd, Multan. | Deltamethrin | 2.5% EC(W/V) | | | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China. | | II | Insect. |
| 895 | S.Essa, Karachi. | Imidacloprid | | | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 896 | Commander Agro (Pvt.) Ltd., Multan Cantt. | Methamidophos | 60% SL (W/V) | | | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre | Malaysia | | Ib | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | | | | |
| 897 | Defence Agro Chem<br>38 - E Shah Rukn-e- Alam , Mutan. | Fenvalerate | 20% EC | | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 898 | Defence Agro Chem. Multan. | Cypermethrin | | | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 899 | Defence Agro Chem. Multan. | Beta-Cypermethrin | 4.5 % (w/w) EC (Appendix-A) | | | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China. | | II | Insect. |
| 900 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Fenpropathrin | 20% & 92%Tech EC & Tech(W/W) | | | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | | II | Insect. |
| 901 | Sultan Multi Trading (Pvt.) Ltd., Lahore. | Fenvalerate | 20 %( w/w) EC (Appendix-A) | | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 902 | Pak Pansy (Pvt.) Ltd., Karachi. | Methamidophos | 60% SL(W/V) | | | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China. | | Ib | Insect. |
| 903 | Unica International (Pvt) Ltd., Lahore. | Methamidophos | 60% SL (W/V) | | | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China. | | Ib | Insect. |
| 904 | Dynamic Agrilinks (Pvt.) Ltd., | Buprofezin | 25 % (w/w) WP (Appendix-A) | | | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China. | | III | Insect. |
| 905 | Ali Akbar Enterprises Lahore Cantt. | Cartap Hydrochloride | 4% G & 95% Tech. | | | Rice Stem Borers. | China. | | II | Insect. |
| 906 | Union Agro Industries<br>D - 5, Sector 32 - A, Korangi, Karachi. | Cartap Hydrochloride | 4% G (w/w) (App.-A)<br>& 98% Tech. (w/w) (App.-B) | 03.11.2002 | 25.02.2005 | Rice Stem Borers. | China. | Revised | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 907 | Vital Chemical Corporation, Lahore. | Imidacloprid | 25% EC(W/W) | | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 908 | Solex Chemicals (Pvt.) Ltd, Multan. | Imidacloprid | 25% EC(W/W) | | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 909 | FarmEco (Pvt.) Ltd., 262-B, Gulgasht Colony, Multan. | Beta-Cypermethrin | 4.5 % (w/w) EC (Appendix-A) | 10.06.2002 | 20.06.2004 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China. | Revised | II | Insect. |
| 910 | FarmEco Enterprises, 262-B, Gulgasht Colony, Bosan Road, Multan. | Lambda - Cyhalothrin | 2.5% EC (w/v) (Appendix-A) | 10.06.2002 | 20.06.2004 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | Revised | II | Insect. |
| 911 | FarmEco Enterprises, 262-B, Gulgasht Colony, Bosan Road, Multan. | Cypermethrin | 10% EC (w/w) (Appendix-A) | 10.06.2002 | 20.06.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 912 | KTK Pesticide (Pvt.) | Imidacloprid | 25% WP(W/W) | | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 913 | Farming Sense (Pvt.) Ltd., Multan | Lambda - Cyhalothrin | 2.5 EC W/V | | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 914 | Farming Sense (Pvt.) Ltd., Multan | Cypermethrin | 4.5% | | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 915 | Commander Agro (Pvt.) Ltd., Multan Cantt. | Cypermethrin | 10 % (w/w) EC (Appendix-A) | | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 916 | Wel Agro Wise (Pvt.) Ltd., Multan. | Buprofezin | 25 % (w/w) WP | | | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China. | | III | Insect. |
| 917 | Dinamic Agrilinks (Pvt.) Ltd., Multan. | Pendimethalin | 33% EC (W/V) | | | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China. | | III | Herb. |
| 918 | Pakistan Agrochemicals (Pvt.) Ltd., Karachi. | Monomehypo | 5%G & 95%Tech W/W | | | Rice borers, rice leaf roller, and sugarcane borers. | | | | |
| 919 | Welgreen Chemical (Pvt.) Ltd., Lahore. | Imidacloprid | 25% (W/W)WP | | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 920 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Bifenthrin | 10% EC (w/v) (Appendix-A) | 24.05.2003 | 21.06.2004 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China. | Revised | | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 921 | Agrolet Chemicals Industries 711- X, D.H.A., Lahore Cantt. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 15.05.2002 | 21.06.2004 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | UAE | Revised | II | Insect. |
| 922 | Agrolet Chemicals Industries 711- X, D.H.A., Lahore Cantt. | Methamidophos | 60% SL (w/v) (App.A) & 73% Tech. (w/v) (App.-B) | 16.03.2002 | 21.06.2004 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China. | Revised | Ib | Insect. |
| 923 | Green Gro (Pvt.) Ltd Bhawalpur. | Imidacloprid | 25% EC(W/W) | | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 924 | Green Gro (Pvt.) Ltd Bhawalpur. | Lambda - Cyhalothrin | | | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 925 | Swat Agro Trade Peshawar Cantt. | Chlorpyrifos | | | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Malaysia | | II | Insect. |
| 926 | Wel Agro Wise (Pvt.) Ltd., Multan. | Lambda - Cyhalothrin | 2.5 EC W/V | | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 927 | Unica International (Pvt) Ltd., Lahore. | Cypermethrin | 10 % (w/w) EC (Appendix-A) | | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 928 | United Distributors Pakistan Limited, Karachi. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Greece | | II | Insect. |
| 929 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China. | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 930 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Chlorpyrifos | 40% (w/v) EC (Appendix - A) | 18.05.2002 | 21.06.2004 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.A.E. | Revised | II | Insect. |
| 931 | Prizm Agro Marketing (Pvt.) Ltd., Vehari. | Lambda - Cyhalothrin | 2.5 EC W/V | | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 932 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Cypermethrin | 10% & 92% EC (W/W)& Tech(W/W) | | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Germany. | | II | Insect. |
| 933 | Commander Agro (Pvt.) Ltd., Multan Cantt. | Alpha-Cypermethrin | 5% W/W EC | | | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.K. | | II | Insect. |
| 934 | Unica International (Pvt) Ltd., Lahore. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Malaysia | | II | Insect. |
| 935 | Pak Pansy (Pvt.) Ltd., Karachi. | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Malaysia | | II | Insect. |
| 936 | Commander Agro (Pvt.) Ltd., Multan Cantt. | Endosulfan | 35 (W/V)EC | | | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Malaysia | | II | Insect. |
| 937 | Wel Agro Wise (Pvt.) Ltd. 47/A Industrial Estate, Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 07.10.2003 | 25.06.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 938 | Kapadin Intdernational (Pvt.) Ltd., Karachi. | Cypermethrin | 10% EC(W/V) | | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Saudi | | II | Insect. |
| 939 | Pak Pansy (Pvt.) Ltd., Karachi. | Endosulfan | 35 (W/V)EC | | | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre | Malaysia | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | | | | |
| 940 | Unica International (Pvt) Ltd., Lahore. | Endosulfan | 35 (W/V)EC | | | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Malaysia | | II | Insect. |
| 941 | Agrotak (Pvt.) Ltd., Lahore. | Cypermethrin | | | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 942 | National Insecticides Company (Pvt.) Ltd, Karachi. | Pendimethalin | 33%& 90% EC & Tech(W/W) | | | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | Greece | | III | Herb. |
| 943 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Carbendazim | 50% WP (w/w) (App.-A) & 98% Tech. (w/w) (App.-B) | 16.03.2002 | 27.06.2004 | Grape, Apple, Peas Powdery Mildew and sugarbeet Leaf spots. | China. | Revised | III | Fung. |
| 944 | Sadi Enterprises (Pvt.) Ltd., Quetta. | Dicofol | 18.5 % (w/w) EC (Appendix-A) | 29-06-2001 | | Mites of cotton, sugarcane, apples and almonds. | China. | | III | Acar. |
| 945 | Elite Agro Services, Multan Cantt. | Dicofol | 18.5 % (w/w) EC (Appendix-A) | 29-06-2001 | | Mites of cotton, sugarcane, apples and almonds. | China. | | III | Acar. |
| 946 | Ali Akbar Enterprises Lahore Cantt. | Chlorpyrifos | 40% (w/v) EC (App-A) & 97% Tech. (w/w) (App-B) | 30-06-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | | | II | Insect. |
| 947 | Pak China Chemicals, Lahore. | Lambda - Cyhalothrin | 2.5% (w/v) EC (App-A) & 95% Tech. (w/w) (App-B) | 29-06-2001 | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 948 | Dawn Agro Services (Pvt.) Ltd., Sadiqabad. | Pendimethalin | 33 % (w/v) EC (Appendix-A) | 28-06-2001 | | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China. | | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 949 | Pak Pansy (Pvt.) Ltd., Karachi. | Cypermethrin | 10 % (w/w) EC (Appendix-A) | 28-06-2001 | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | | | II | Insect. |
| 950 | Welcon Chemicals (Pvt.) | Carbendazim | 50 % (w/w) WP (Appendix-A) | 29-06-2001 | | Grape, Apple, Peas Powdery Mildew and sugarbeet Leaf spots. | China. | | III | Fung. |
| 951 | FMC United (Private) Limited, | Chlorpyrifos | 40% (w/v) EC (App-A) & 97% Tech. (w/w) (App-B) | 30-06-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | | | II | Insect. |
| 952 | Agrotak (Pvt.) Ltd. | Imidacloprid | 25% (w/v) EC (Appendix - A) | 30-06-2001 | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 953 | Green Gro (Pvt.) Ltd | Cartap Hydrochloride | 4% (w/w) G (App-A) & 98% Tech. (w/w) (App-B) | 05-06-2001 | | Rice Stem Borers. | China. | | II | Insect. |
| 954 | United Distributors Pakistan Limited. | Profenofos | 40% (w/w) EC (Appendix - A) | 06-07-2001 | | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China. | | II | Insect. |
| 955 | National Insecticides Company (Pvt.) Ltd., | Carbofuran | 3%(w/w) G (App-A) & 98% Tech.(w/w) (App-B) | 06-07-2001 | | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China. | | Ib | Insect. |
| 956 | Farming Sense (Pvt.) Ltd., | Chlorpyrifos | 40% EC (w/w) (Appendix-A) | 07-07-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.A.E. | | II | Insect. |
| 957 | Peoples Farm Services (Pvt.) Ltd., | Chlorpyrifos | 40% (w/w) EC (Appendix - A) | 07-07-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.A.E. | | II | Insect. |
| 958 | Agrolet Chemicals Industries 5A-5B, Industrial Estate, Multan. | Triazophos | 40% (w/w) EC (App.-A) & 80% Tech. (w/w) (App.-B) | 19-09-2002 | 08.07.2004 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China. | Revised | Ib | Insect. |
| 959 | R.B. Avari Enterprises (Pvt.) Ltd., | Chlorpyrifos | 40% EC (w/w) (Appendix-A) | 10-07-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane | China. | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | borers and bugs, maize borer, orchard codling moth and vegetable beetles. | | | | |
| 960 | Green Gro (Pvt.) Ltd | Buprofezin | 25% (w/w) WP (Appendix-A) | 10-07-2001 | | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China. | | III | Insect. |
| 961 | Welgreen Chemical (Pvt.) Ltd. | Diafenthiuron | 50% (w/w) SC (App-A) & 92% (w/w) Min. Tech. (App-B) | 10-07-2001 | | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China. | | III | Insect. |
| 962 | United Distributor Pakistan Ltd., Karachi. | Fenpropathrin | | 10-07-2001 | | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | | II | Insect. |
| 963 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Chlorpyrifos | 20% (w/w) EC (App.-A) & 97% (w/w) Tech. (App.-B) | 04.02.2003 | 10.07.2004 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Greece | Revised | II | Insect. |
| 964 | Jugnu Enterprises, | Beta-Cypermethrin | 4.5 % (w/w) EC (Appendix-A) | 17-07-2001 | | Cotton Pink Spotted Bollworms and Cauliflower Caterpillar. | China. | | II | Insect. |
| 965 | Green Gro (Pvt.) Ltd | Alpha-Cypermethrin | 5 % (w/w) EC (Appendix-A) | 17-07-2001 | | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | | | II | Insect. |
| 966 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Methomyl | 20% (w/v) EC (Appendix-A) | 24.05.2003 | 16.07.2004 | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, Jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphid. | China. | Revised | Ib | Insect. |
| 967 | Sabzazar & Co. (Pvt.) Ltd. Plot No. 3 & 4, Opp. Wazir Mansion Railway Station Mauripur Road, Daryabad, Karachi. | Diuron | 80% (w/w) WP (Appendix-A) | 24.05.2003 | 15.07.2004 | Broad leaf weeds & grasses in sugarcane and wheat. | Germany. | Revised | III | Herb. |
| 968 | Commander Agro (Pvt.) Ltd, | Chlorpyrifos | 40% EC (w/v) (Appendix-A) | 17-07-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China. | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 969 | Swat Agro Trade, | Mancozeb | 80 % (w/w) WP (Appendix-A) | 18-07-2001 | | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | | | III | Fung. |
| 970 | Peoples Farm Services (Pvt.) Ltd., | Fenpropathrin | 20 %( w/w) EC (Appendix-A) | 21-07-2001 | | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | U.A.E | | II | Insect. |
| 971 | Farming Sense (Pvt.) Ltd., | Fenpropathrin | 20 %( w/w) EC (Appendix-A) | 21-07-2001 | | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | U.A.E | | II | Insect. |
| 972 | Wel Agro Wise (Pvt.) Ltd. 47/A Industrial Estate, Multan. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 07.10.2003 | 20.07.2004 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | U.A.E | Revised | II | Insect. |
| 973 | Meraj Agro Chemicals (Pvt.) Ltd., | Chlorpyrifos | 40% EC (w/w) (Appendix-A) | 21-07-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.A.E | | II | Insect. |
| 974 | Wel Agro Wise (Pvt.) Ltd., | Fenvalerate | 20 %( w/w) EC | 23-07-2001 | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.A.E | | II | Insect. |
| 975 | Solar Agro Chemicals, | Fenvalerate | 20 %( w/w) EC | 23-07-2001 | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.A.E | | II | Insect. |
| 976 | Meraj Agro Chemicals (Pvt.) Ltd., | Fenvalerate | 20 %( w/w) EC | 23-07-2001 | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.A.E | | II | Insect. |
| 977 | Agrolet International | Trifluralin | 48% (w/v) EC (App-A) & 95% (w/w) Tech. (App-B) | 24-07-2001 | | Annual grasses and broad leaved weeds in cotton, soyabean and vegetables. | China. | | III | Herb. |
| 978 | Chem-Agro International, | Fenvalerate | 20 %( w/w) EC | 24-07-2001 | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.AE | | II | Insect. |
| 979 | Warble (Pvt.) Ltd. | Esfenvalerate | 5% (w/w) EC & 90% (w/w) Tech. | 25-07-2001 | | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | | II | Insect. |
| 980 | Solex Chemicals (Pvt.) Ltd | Esfenvalerate | 5 % EC (w/w) | 25-07-2001 | | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | | II | Insect. |
| 981 | Farming Sense (Pvt.) Ltd., | Fenvalerate | 20 %( w/w) EC | 26-07-2001 | | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U.A.E | | II | Insect. |
| 982 | Meraj Agro Chemicals (Pvt.) Ltd., | Profenofos | 40% EC | 26-07-2001 | | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | U.A.E | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 983 | Fatima Farming Care (Pvt.) Ltd., | Chlorpyrifos | 40% EC (w/w) (Appendix-A) | 26-07-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U.A.E | | II | Insect. |
| 984 | Solar Agro Chemicals, | Fenpropathrin | 20 %( w/w) EC (Appendix-A) | 26-07-2001 | | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | U.A.E | | II | Insect. |
| 985 | Meraj Agro Chemicals (Pvt.) Ltd., | Fenpropathrin | 20 %( w/w) EC (Appendix-A) | 26-07-2001 | | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | U.A.E | | II | Insect. |
| 986 | Meraj Agro Chemicals (Pvt.) Ltd., | Cypermethrin | 10 % (w/w) EC (Appendix-A) | 26-07-2001 | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.A.E | | II | Insect. |
| 987 | Solar Agro Chemicals, | Cypermethrin | 10 % (w/w) EC (Appendix-A) | 26-07-2001 | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.A.E | | II | Insect. |
| 988 | Wel Agro Wise (Pvt.) Ltd. 47/A Industrial Estate, Multan. | Alpha-Cypermethrin | 5% (w/v) EC | 07.10.2003 | 25.07.2004 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.A.E | Revised | II | Insect. |
| 989 | Solar Agro Chemicals, | Alpha-Cypermethrin | 5% EC | 26-07-2001 | | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.A.E | | II | Insect. |
| 990 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Carbofuran | 3% G (w/w) (App.-A) & 75% DB Tec h. (w/w) (App.-B) | 21.10.2002 | 01.08.2004 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China. | Revised | Ib | Insect. |
| 991 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Cypermethrin | 10% (w/v) EC | 07.10.2003 | 02.08.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.AE | Revised | II | Insect. |
| 992 | Techcare Services (Pvt.) Ltd., Lahore | Bromoxynil + MCPA | 5 % (w/w) EC | 03-08-2001 | | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China. | | II +III | Herb. |
| 993 | Solex Chemicals (Pvt.) Ltd | Imidacloprid | 25% (W/W) EC | 18-08-2001 | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 994 | Kapadin International (Pvt.) Ltd., 1103, Business Centre Mumtaz Hassan Road, Karachi-74000 | CHLORPYRIFOS | 40% EC (w/v) | 18-08-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | | | II | Insect. |
| 995 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Endosulfan | 35% (w/v) EC | 18-08-2001 | | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U.A.E | | II | Insect. |
| 996 | Techcare Services (Pvt.) Ltd., 29 - M Civic Centre, Model Town (Ext.) Lahore. | Acetochlor | 50% (w/w) EC | 18-08-2001 | | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China. | | III | Herb. |
| 997 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Profenofos | 50% (w/w) EC (App.-A) & 85% Tech. (w/w) (App.-B) | 20.03.2002 | 22.08.2004 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China. | Revised | II | Insect. |
| 998 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | CHLORPYRIFOS | 40% EC (w/w) (Appendix-A) | 27-08-2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | | | II | Insect. |
| 999 | Pak China Chemicals., H# 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Beta - Cyfluthrin | 2.5% (w/v) EC (2.9% w/w) & 97% Tech. (w/w) (App.-A, B) | 21.03.2003 | 26.08.2004 | Cotton Pink, Spotted and American bollworms, Jassids, Whitefly, thrips, Aphids | Germany. | Revised | II | Insect. |
| 1000 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Bifenthrin | 10% EC (w/w) (App.-A) & 96% Tech. (w/w) (App.-B) | 20.03.2002 | 26.08.2004 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China. | Revised | | Insect. |
| 1001 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | CHLORPYRIFOS | 40% EC (w/w) (App.-A) & 94% Tech. (w/w) (App.-B) | 16.03.2002 | 26.08.2004 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China. | Revised | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1002 | Green Gro (Pvt.) Ltd 225 - Shadman Colony Ahmed - Pur East Bhawalpur. | Isoproturon | 50% WP (w/w) | 27-08-2001 | | Weeds in Wheat. | Tianiin. | | III | Herb. |
| 1003 | Agri - Edgro Limited 43 - A, Industrial Estate, Multan. | Deltamethrin | 2.5 % (w/v) EC (Appendix-A) | 11.06.2003 | 26.08.2004 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | U.A.E | Revised | II | Insect. |
| 1004 | Meraj Agro Chemicals (Pvt.) Ltd., 1880-B, Khanewal Road, Multan. | Deltamethrin | 2.5 % (w/w) EC (Appendix-A) | 27-08-2001 | | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | U.A.E | | II | Insect. |
| 1005 | Chem - Agro International House No.76 ST # 24 Sector F-10/1, Islamabad. | Metalaxyl + Mancozeb | 72% (w/w) WP (64 + 8%) (Appendix-A) | 29-08-2001 | | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China. | | III | Herb. |
| 1006 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Alpha-Cypermethrin | 5 % (w/w) EC | 01-09-2001 | | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U.A.E | | II | Insect. |
| 1008 | Agri - Edgro Limited 43 - A, Industrial Estate, Multan. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 19.06.2003 | 31.08.2004 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.A.E | Revised | II | Insect. |
| 1009 | Agri - Edgro Limited 43 - A, Industrial Estate, Multan. | Alpha-Cypermethrin | 5% (w/v) EC (App.-A) & 97% (w/w) Tech. (App.-B & C) | 26.05.2003 | 31.08.2004 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Egypt. | Revised | II | Insect. |
| 1010 | Agri - Edgro Limited 43 - A, Industrial Estate, Multan. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 24.05.2003 | 31.08.2004 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Egypt. | Revised | II | Insect. |
| 1011 | Agri - Edgro Limited 43 - A, Industrial Estate, Multan. | Profenofos | 40% (w/v) EC (Appendix-A) | 10.06.2003 | 26.08.2004 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | U.A.E | Revised | II | Insect. |
| 1012 | Sultan Multi Trading (Pvt.) Ltd., 27, Ali Block, New Garden Town, Lahore. | Endosulfan | 35% (w/w) EC | 11-09-2001 | | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre | China. | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | | | | |
| 1013 | Kapadin Internatioal (Pvt.) Ltd., 1103, Business Centre Mumtaz Hassan Road, Karachi-74000 | Endosulfan | 35% (w/v) EC | 12-09-2001 | | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | | | II | Insect. |
| 1014 | Granulars (Pvt.) Ltd., Kassam Manzil, 1st Floor, 1/29 Randal Road, Karachi. | IMIDACLOPRID | 25% (w/w) WP | 19-09-2001 | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1015 | Granulars (Pvt.) Ltd., Kassam Manzil, 1st Floor, 1/29 Randal Road, Karachi. | IMIDACLOPRID | 25% (w/v) EC | 19-09-2001 | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1016 | Commander Agro (Pvt.) Ltd, 75-Askaria Colony,Shershah Road, Multan Cantt. | IMIDACLOPRID | 25% (w/w) EC | 19-09-2001 | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1017 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Metalaxyl + Mancozeb | 72% (w/w) WP(8% Min. w/w + 64% Min. w/w) | 27-09-2001 | | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China. | | III | Herb. |
| 1018 | Granulars (Pvt.) Ltd., Kassam Manzil, 1st Floor, 1/29 Randal Road, Karachi. | Diafenthiuron | 50 % (w/w) SC | 27-09-2001 | | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China. | | III | Insect. |
| 1019 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Endosulfan | 35% (w/w) EC | 01-10-2001 | | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China. | | II | Insect. |
| 1020 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Bromoxynil + MCPA | 200/200 EC (20% w/v + 20% w/v) | 04-10-2001 | | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China. | | II +III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1021 | Peoples Farm Services (Pvt.) Ltd., 9 - Ahmad Mansion, Shahrah -e- Quaid -e- Azam, Lahore. | Isoproturon | 50 % WP (w/w) | 04-10-2001 | | Weeds in Wheat. | China. | | III | Herb. |
| 1022 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Isoproturon | 50 % (w/w) WP | 04-10-2001 | | Weeds in Wheat. | China. | | III | Herb. |
| 1023 | Chem - Agro International House No.76 ST # 24 Sector F-10/1, Islamabad. | Isoproturon | 50 % WP (w/w) | 04-10-2001 | | Weeds in Wheat. | China. | | III | Herb. |
| 1024 | Dawn Agro Services (Private) Limited, 34/A, Street No.2, Jinnah Town, Sadiqabad- 54350. | Bromoxynil + MCPA | 200/200 EC (20% w/w + 20% w/w) | 08-10-2001 | | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China. | | II +III | Herb. |
| 1025 | Burhan Chemicals, 24 - 1 - B Industrial Estate Multan | Beta-Cypermethrin | 4.5 % (w/w) EC | 08-10-2001 | | Cotton Pink Spotted Bollworms and Cauliflower Caterpillar. | China. | | II | Insect. |
| 1026 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Bromoxynil + MCPA | 200/200 EC (20% w/v + 20% w/v) | 18-10-2001 | | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China. | | II +III | Herb. |
| 1027 | Radix Chemicals (Pvt.) Ltd., 6 - A, Industrial Estate, Multan. | Isoproturon | 500 FW (w/v) | 18-10-2001 | | Weeds in Wheat. | | | III | Herb. |
| 1028 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Fenvalerate | 20% (w/w)EC | 18-10-2001 | | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U.A.E | | II | Insect. |
| 1029 | Pak China Chemicals H# 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Fenpropathrin | 20% EC (w/w) (App.-A) & 90% Tech. (w/w) (App.-B) | 16.03.2002 | 27.06.2004 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | Revised | II | Insect. |
| 1030 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Metalaxyl + Mancozeb | 72% WP (8% Min. w/w + 64% Min. w/w) (App.-A) | 06.04.2002 | 23.10.2004 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China. | Revised | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1031 | Data Jee Corporation, Theri Sansi, G.T. Road, Gujranwala, Pakistan. | Thiophanate Methyl | 70% (w/w) WP | 25.10.2001 | | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | China. | | III | Fung. |
| 1032 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Mancozeb | 80% WP (w/w) (App.-A) & 85% (w/w) Tech. (App.-B) | 16.03.2002 | 31.10.2004 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China. | Revised | III | Fung. |
| 1033 | Wel Agro Wise (Pvt.) Ltd. 47/A Industrial Estate Multan. | Isoproturon | 50% WP (w/w) | 01.11.2001 | | Weeds in Wheat. | China. | | III | Herb. |
| 1034 | Radix Chemicals (Pvt.) Ltd., 6 - A, Industrial Estate, Multan. | Isoproturon | 50% WP (w/w) | 01.11.2001 | | Weeds in Wheat. | China. | | III | Herb. |
| 1035 | The Saggus (Pvt.) Ltd., 7-B, Shadman II, Lahore. | Isoproturon | 50% WP (w/w) | 02.11.2001 | | Weeds in Wheat. | China. | | III | Herb. |
| 1036 | Kuwait Enterprises D-701, Faiz Muhammad Road, Ghariabad,Sukkur. | Copper Oxychloride | 50% WP (w/w) (Appendix-A) | 04.10.2001 | | Potato, Early blight, 1000 gm / acre Potato, Late blight, 1000 gm / acre Tomato, Early blight, 1000 gm / acre Tomato, Late blight, 1000 gm / acre Chilies, Leaf blight, 500 gm / acre Cucurbits, Downy mildew, 500 gm / acre | Pakistan | | III | Fung. |
| 1037 | HELB Agroscience Pakistan (Pvt.) Ltd. | CHLORPYRIFOS | 40% EC (w/w) (Appendix-A) | 04.12.2001 | | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Egypt. | | II | Insect. |
| 1038 | Welcon Chemicals (Pvt.) Ltd. | Thiophanate Methyl | 70% (w/w) WP (Appendix - A) | 06.12.2001 | | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | China. | | III | Fung. |
| 1039 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | PROPARGITE | 57% (w/w) EC (App-A) & 90% Tech.(w/w) Min.(App-B) | 18.09.2002 | 07.03.2005 | Against mites on citrus. | China. | Revised | III | Acar. |
| 1040 | Agrolet International | Fenpropathrin | 20% (w/w) EC (Appendix-A) | 09-01-2002 | | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | | II | Insect. |
| 1041 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Bromoxynil + MCPA | 200/200 EC (Appendix- A) | 22.04.2002 | 08.01.2005 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China. | Revised | II +III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1042 | United Distributors Pakistan Limited. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 09-01-2002 | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1043 | Farming Sense (Pvt.) Ltd., | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 09-01-2002 | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1044 | Agri Pest Management (Pvt.) Ltd., | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 09-01-2002 | | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1045 | HELB Pesticides & Chemicals Pakistan (Pvt.) Ltd., | Copper Oxychloride | 50% (w/w) WP (Appendix-A) | 09-01-2002 | | Potato, Early blight, 1000 gm / acre Potato, Late blight, 1000 gm / acre Tomato, Early blight, 1000 gm / acre Tomato, Late blight, 1000 gm / acre Chilies, Leaf blight, 500 gm / acre Cucurbits, Downy mildew, 500 gm / acre | Egypt. | | III | Fung. |
| 1046 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Dimehypo | 4% G (w/w) (App.-A) & 95% Tech. (w/w) (App.-B) | 22.04.2002 | 10.01.2005 | Rice Borers. | China. | Revised | | Insect. |
| 1047 | HELB Pesticides & Chemicals Pakistan (Pvt.) Ltd., | Isoproturon | 50 % ( W/W) WP (Appendix-A) | 14-01-2002 | | Weeds in Wheat. | Egypt. | | III | Herb. |
| 1048 | Roots International | Lambda - Cyhalothrin | 2.5 % EC (W/V) (Appendix-A) | 29-01-2002 | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 1049 | Khirman Enterprizes, | Lambda - Cyhalothrin | 2.5 % EC (W/V) (Appendix-A) | 29-01-2002 | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 1050 | Zagro NPC (Pvt.) Ltd., | Metalaxyl + Mancozeb | 72% (w/w) WP (Appendix-A) | 29-01-2002 | | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China. | | III | Herb. |
| 1081 | Agrolet International '131/3, Kot Lakhpat Industrial Estate, 'Lahore. | Lambda - Cyhalothrin | 2.5% (w/v) EC (App.A) & 45% (w/w) Tech. (App.B) | 28-02-2002 | | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 1051 | Zagro NPC (Pvt.) Ltd. 25-Y Main Road, New Multan. | Copper Oxychloride | 50% (w/w) WP (Appendix-A) | 29-01-2002 | 28-01-2005 | Potato, Early blight, 1000 gm / acre Potato, Late blight, 1000 gm / acre Tomato, Early blight, 1000 gm / acre | Malaysia | | III | Fung. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Tomato, Late blight, 1000 gm / acre Chilies, Leaf blight, 500 gm / acre Cucurbits, Downy mildew, 500 gm / acre | | | | |
| 1052 | Pak China Chemicals, 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Ametryn + Atrazine | 80% WP & Tech. Ametryn 96%,Atrazine 97% (w/w) (App-A,B,C,D) | 23.09.2002 | 31-01-2005 | Weeds in maize, rice and sugarcane. | China. | Revised | III | Herb. |
| 1053 | Dada Jee Corporation, H# 97, ST# 12 Cavalary Ground (Ext.), Lahore Cantt. | Carbendazim | 50% (w/w) WP (Appendix - A) | 01-02-2002 | 31-01-2005 | Grape, Apple, Peas Powdery Mildew and sugarbeet Leaf spots. | China. | | III | Fung. |
| 1054 | United Distributors Pakistan Limited., 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Metalaxyl + Mancozeb | 72% (8 + 64%) WP (Appendix-A) | 09-02-2002 | 08-02-2005 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | Greece | | III | Herb. |
| 1055 | Edgro (Pvt.) Ltd.,Marine Trade Centre, BC - 3, Kehkashan,Block - 9, Clifton, Karachi - 75600. | Diafenthiuron | 50% (w/w) SC (App.-A) & 92% (w/w) Min. Tech. (App.-B) | 09-02-2002 | 08-02-2005 | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China. | | III | Insect. |
| 1056 | Nayab International (Pvt.) Ltd.,911 UNI Plaza I.I.Chundrigar Road, Karachi. | Beta-Cypermethrin | 4.5% (w/w) EC (Appendix-A) | 13-02-2002 | 12-02-2005 | Cotton Pink Spotted Bollworms and Cauliflower Caterpillar. | China. | | II | Insect. |
| 1057 | Nayab International (Pvt.) Ltd.,911 UNI Plaza I.I.Chundrigar Road, Karachi. | Fenvalerate | 20 % ( w/w) EC (Appendix-A) | 13-02-2002 | 12-02-2005 | CottonPink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 1058 | Nayab International (Pvt.) Ltd.,911 UNI Plaza I.I.Chundrigar Road, Karachi. | Lambda - Cyhalothrin | 2.5 % EC (W/V) (Appendix-A) | 13-02-2002 | 12-02-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 1059 | Nayab International (Pvt.) Ltd.,911 UNI Plaza I.I.Chundrigar Road, Karachi. | Fenpropathrin | 20 %( w/w) EC (Appendix-A) | 13-02-2002 | 12-02-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | | II | Insect. |
| 1060 | Nayab International (Pvt.) Ltd.,911 UNI Plaza I.I.Chundrigar Road, Karachi. | Cypermethrin | 10 % (W/W) EC (Appendix-A) | 13-02-2002 | 12-02-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1061 | Welcon Chemicals (Pvt.) Ltd., Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Dicofol | 18.5 % (w/w) EC (Appendix-A) | 15-02-2002 | 14-02-2005 | Mites of cotton, sugarcane, apples and almonds. | China. | | III | Acar. |
| 1062 | HELB Agrosciences Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Deltamethrin | 2.5 % (w/w) EC (Appendix-A) | 16-02-2002 | 15-02-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | Egypt. | | II | Insect. |
| 1063 | HELB Agrosciences Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Alpha-Cypermethrin | 5 % (w/w) EC (Appendix-A) | 16-02-2002 | 15-02-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Egypt. | | II | Insect. |
| 1064 | HELB Agrosciences Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Cypermethrin | 20 % (w/v) EC (Appendix-A) | 12.04.2003 | 15-02-2005 | Cotton Pink Bollworm 125 ml/acre<br>Cotton Spotted Bollworm 125 ml/acre | Egypt. | Revised | II | Insect. |
| 1065 | HELB Agrosciences Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Methamidophos | 60 % (w/v) SL (Appendix-A) | 16-02-2002 | 15-02-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Egypt. | | Ib | Insect. |
| 1066 | HELB Agrosciences Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Fenvalerate | 20 %( w/w) EC (Appendix-A) | 16-02-2002 | 15-02-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Egypt. | | II | Insect. |
| 1067 | HELB Agrosciences Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Metalaxyl + Mancozeb | 72% (8 + 64%) WP (Appendix-A) | 16-02-2002 | 15-02-2005 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | Egypt. | | III | Herb. |
| 1068 | HELB Agrosciences Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Profenofos | 50% (w/w) EC (Appendix-A) | 16-02-2002 | 15-02-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | Egypt. | | II | Insect. |
| 1069 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Thiophanate Methyl | 70% WP (w/w) (App-A) & 95% (w/w) Tech. (App-B) | 16.03.2002 | 15.02.2005 | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | China. | Revised | III | Fung. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1070 | The Saggus (Pvt.) Ltd., 7 - B, Shadman 11, Lahore. | Metribuzin | 70% (w/w) WP (Appendix- A) | 16-02-2002 | 15-02-2005 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China. | | III | Herb. |
| 1071 | Techcare Services (Pvt.) Ltd., 29 - M Civic Centre, Model Town (Ext.), Lahore. | Metribuzin | 70% (w/w) WP (Appendix- A) | 16-02-2002 | 15-02-2005 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China. | | III | Herb. |
| 1072 | Granulars (Pvt.) Ltd,Kassam Manzil, 1st Floor, 1 / 29,Randal Road, Karachl - 74400. | Alpha-Cypermethrin | 5 % (w/w) EC (Appendix-A) | 26-02-2002 | 25-02-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Egypt. | | II | Insect. |
| 1073 | Granulars (Pvt.) Ltd,Kassam Manzil, 1st Floor, 1 / 29,Randal Road, Karachl - 74400. | Mancozeb | 80 % (w/w) WP (Appendix-A) | 26-02-2002 | 25-02-2005 | Potato, Early blight & Late blight, 600 gm/acre.<br>Potato, Downy mildew, 600 gm/acre.<br>Vegetable, Downy mildew, 800 gm/acre.<br>Cucurbits, Downy mildew, 800 gm/acre. | China. | | III | Fung. |
| 1074 | Khirman Enterprises, 344/B, Khakawani Street, Opp. Joyia Petrol Pump,Khanewal Road, Multan. | Cypermethrin | 10 % (w/v) EC (Appendix-A) | 24.05.2003 | 25-02-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 1075 | Roots International, 903 Qasr-e-Taemoor, Mehmoodabad Colony,Khanewal Road, Multan. | Cypermethrin | 10 % (w/w) EC (Appendix-A) | 26-02-2002 | 25-02-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 1076 | Roots International, 903 Qasr-e-Taemoor, Mehmoodabad Colony,Khanewal Road, Multan. | CHLORPYRIFOS | 40% EC (w/w) (Appendix-A) | 26-02-2002 | 25-02-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China. | | II | Insect. |
| 1077 | Khirman Enterprises, 344/B, Khakawani Street, Opp. Joyia Petrol Pump,Khanewal Road, Multan. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 29.04.2003 | 25-02-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China. | Revised | II | Insect. |
| 1078 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Monomehypo | 5 %G (App.-A) & 95%Tech. (App.-B) | 26-02-2002 | 25-02-2005 | Rice borers, rice leaf roller, and sugarcane borers. | China. | | | |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1079 | Union Agro Industries D - 5, Sector 32 - A, Korangi, Karachi. | Monomehypo | 5% G (w/w) (App.-A) & 95% Tech. (w/w) (App.-B) | 26-02-2002 | 25-02-2005 | Rice borers, rice leaf roller, and sugarcane borers. | China. | | | |
| 1080 | Seatco (Pvt.) Ltd. 133-N, Block, Model Town, Lahore. | Monomehypo | 5 %G (App.-A) & 95%Tech. (App.-B) | 15-02-2002 | 14-02-2005 | Rice borers, rice leaf roller, and sugarcane borers. | China. | | | |
| 1082 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Triazophos | 40% (w/v) EC (App-A) & 80% Tech. Min. (w/w) (App-B) | 02.08.2003 | 26.02.2005 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China. | Revised | Ib | Insect. |
| 1083 | Granulars (Pvt.) Ltd,Kassam Manzil, 1st Floor, 1 / 29,Randal Road, Karachl - 74400. | Deltamethrin | 2.5% (w/w) EC (Appendix-A) | 28-02-2002 | 27-02-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | Egypt. | | II | Insect. |
| 1084 | Granulars (Pvt.) Ltd,Kassam Manzil, 1st Floor, 1 / 29,Randal Road, Karachl - 74400. | Fenvalerate | 20% ( w/w) EC (Appendix-A) | 28-02-2002 | 27-02-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Egypt. | | II | Insect. |
| 1085 | International Trade Centre,120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Methamidophos | 60% (w/v) SL (Appendix-A) | 28-02-2002 | 27-02-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China. | | Ib | Insect. |
| 1086 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Pendimethalin | 33% (w/v) EC (Appendix-A) | 24.05.2003 | 27-02-2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China. | Revised | III | Herb. |
| 1087 | Seatco (Pvt.) Ltd.,133-N, Block, Model Town, Lahore-54700 | Carbofuran | 3%(w/w) G (App-A) & 98% Tech.(w/w) (App-B) | 02-03-2002 | 01-03-2005 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | China. | | Ib | Insect. |
| 1088 | Saad International, 16, Anam Palace, Bohri Road, Custom House, Karachi. | Methamidophos | 60 % (w/v) SL (Appendix-A) | 15-02-2002 | 14-02-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre | China. | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | | | | |
| 1089 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Pendimethalin | 33% EC (w/v) (App.-A)<br>& 90.5% Tech. (w/w) (App.-B) | 20-09-2002 | 07-03-2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China. | Revised | III | Herb. |
| 1090 | Agri Pest Management (Pvt.) Ltd. 262 - B, Gulgast Colony, Boasn Road, Multan. | Methamidophos | 60% (w/v) SL (Appendix-A) | 08-03-2002 | 07-03-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China. | | Ib | Insect. |
| 1091 | International Trade Centre,120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | PROPARGITE | 57% (w/w) EC (Appendix-A) | 08-03-2002 | 07-03-2005 | Two spotted spider mites in field grown roses, vines, apples, peaches, plums and lemon. | China. | | III | Acar. |
| 1092 | Stedec Technology Commercialization of Pakistan,Aiwan-e-Science Building, Ferozepur Road, Lahore. | Cypermethrin | 10% (w/w) EC (App.-A) & 90% (w/w) Tech. (App.-B) | 08-03-2002 | 07-03-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 1093 | Roots International, 903 Qasr-e-Taemoor, Mehmoodabad Colony,Khanewal Road, Multan. | Deltamethrin | 2.5% (w/w) EC (Appendix-A) | 08-03-2002 | 07-03-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | U. A. E. | | II | Insect. |
| 1094 | Matchless (Pvt.) Limited.,6 - B, Indultrial Estate, Multan. | Deltamethrin | 2.5% (w/w) EC (Appendix-A) | 08-03-2002 | 07-03-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | U. A. E. | | II | Insect. |
| 1095 | Matchless (Pvt.) Limited.,6 - B, Indultrial Estate, Multan. | Fenvalerate | 20% ( w/w) EC (Appendix-A) | 08-03-2002 | 07-03-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U. A. E. | | II | Insect. |
| 1096 | Farmers Equity Pakistan (Pvt.) Ltd.,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Pendimethalin | 33% (w/v) EC (Appendix-A) | 12-03-2002 | 11-03-2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China. | | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1098 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Esfenvalerate | 5% EC (w/v) (Appendix-A) | 24.05.2003 | 12-03-2005 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China. | Revised | II | Insect. |
| 1099 | Valiant Agro Services 2-Main Road, Jinnah Town, Sadiqabad. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 25.06.2003 | 12-03-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 1100 | Al-Shafi Sadar & Sons (Pvt.) Ltd.,3-C, First Floor, Nusrat Road, Hasan Arcade, Multan Cantt. | Cypermethrin | 10% (w/w) EC (Appendix-A) | 13-03-2002 | 12-03-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 1101 | Wel Agro Wise (Pvt.) Ltd. 47/A Industrial Estate, Multan. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 07.10.2003 | 12.03.2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China. | Revised | II | Insect. |
| 1102 | Granulars (Pvt.) Ltd,Kassam Manzil, 1st Floor, 1 / 29,Randal Road, Karachl - 74400. | Profenofos | 40% (w/v) EC (Appendix-A) | 13-03-2002 | 12-03-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | Greece | | II | Insect. |
| 1103 | Al-Shafi Sadar & Sons (Pvt.) Ltd.,3-C, First Floor, Nusrat Road, Hasan Arcade, Multan Cantt. | Lambda - Cyhalothrin | 2.5% (W/V) EC (Appendix.-A) | 14-03-2002 | 13-03-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |
| 1104 | Jugnu Enterprises,Room No. 4, 2nd Floor, Arkay Square, Extention,Shahrah-e-Liaquat, Karachi-74000. | Bifenthrin | 10% EC (w/w) (Appendix-A) | 15-03-2002 | 14-03-2005 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China. | II | | Insect. |
| 1105 | Matchless (Pvt.) Limited.,6 - B, Indultrial Estate, Multan. | Profenofos | 40% (w/w) EC (Appendix-A) | 14-03-2002 | 13-03-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | U. A. E. | | II | Insect. |
| 1106 | Matchless (Pvt.) Limited.,6 - B, Indultrial Estate, Multan. | Alpha-Cypermethrin | 5% (w/w) EC (Appendix-A) | 14-03-2002 | 13-03-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U. A. E. | | II | Insect. |
| 1107 | Roots International, 903 Qasr-e-Taemoor, Mehmoodabad Colony,Khanewal Road, Multan. | Profenofos | 40% (w/w) EC (Appendix-A) | 14-03-2002 | 13-03-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | U. A. E. | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1108 | Roots International, 903 Qasr-e-Taemoor, Mehmoodabad Colony,Khanewal Road, Multan. | Alpha-Cypermethrin | 5% (w/w) EC (Appendix-A) | 15-03-2002 | 14-03-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U. A. E. | | II | Insect. |
| 1109 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Beta - Cyfluthrin | 2.5% EC (w/w) (App.-A) & 95% Tech. (w/w) Min. (App.-B) | 22.04.2002 | 15-03-2005 | Cotton Pink, Spotted and American bollworms, Jassids, Whitefly, thrips, Aphids. | China. | Revised | II | Insect. |
| 1110 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Carbaryl | 85% SP (w/w) (App-A) & 98% Tech. (w/w) (App-B) | 19.04.2002 | 15-03-2005 | Cotton spotted bollworms, Jassids, Thrips, Tobacco budworm and Grape mealy bugs. | China. | Revised | II | Insect. |
| 1111 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Monomehypo | 5% G (w/w) (App.-A) & 95% (w/w) Tech. (App.-B) | 22.04.2002 | 15-03-2005 | Rice borers, rice leaf roller, and sugarcane borers. | China. | Revised | | |
| 1112 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Cypermethrin | 10% EC (w/v) (App.-A) & 90% (w/w) Tech. (App.-B) | 07.06.2003 | 15-03-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 1113 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Deltamethrin | 2.5% EC (w/w) (App-A) & 98% Tech. (w/w) Min. (App-B) | 22.04.2002 | 15.03.2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China. | Revised | II | Insect. |
| 1114 | Prizm Agro Marketing (Pvt.) Ltd. 15-N, Northen Block, Sharki Colony, Vehari. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 11.06.2003 | 15.03.2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 1115 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Butachlor | 60% EC (w/v) (App-A) & 85% Tech. (w/w) (App-B) | 30-03-2002 | 29-03-2005 | Weed control in Paddy. | China. | | III | Herb. |
| 1116 | Grow Green International,Room No.6, 5th Floor, P.I.D.C. House, Karachi. | Monomehypo | 5% G (w/w) (App.-A) & 95%Tech. (w/w) (App.-B) | 30-03-2002 | 29-03-2005 | Rice borers, rice leaf roller, and sugarcane borers. | China. | | | |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1117 | Kinetic International,4 - Muhammad Arcade, L.M.Q. Road, Multan. | Methamidophos | 60% (w/v) SL (Appendix-A) | 04-04-2002 | 03-04-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China. | | Ib | Insect. |
| 1118 | Kinetic International (Pvt.) Ltd.<br>4 - Muhammad Arcade, L.M.Q. Road, Multan. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 02.09.2003 | 03-04-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 1119 | United Distributors Pakistan Limited., 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 04-04-2002 | 03-04-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Greece | | II | Insect. |
| 1120 | Dada Jee Corporation, H# 97, ST# 12 Cavalary Ground (Ext.), Lahore Cantt. | Carbofuran | 3% (w/w) G (App-A) & 97% Tech. (w/w) (App-B) | 04-04-2002 | 03-04-2005 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | Korea | | Ib | Insect. |
| 1121 | Zagro NPC (Pvt.) Ltd., 25-Y Main Road, New Multan. | Pendimethalin | 33% (w/v) EC (Appendix-A) | 04-04-2002 | 03-04-2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China. | | III | Herb. |
| 1122 | Chawla International,Old Rally Brothers Building, Opp. NBP Head Office,Talpur Road, Karachi. | Cypermethrin | 10% (w/w) EC (Appendix-A) | 04-04-2002 | 03-04-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 1123 | Kinetic International,4 - Muhammad Arcade, L.M.Q. Road, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 06-04-2002 | 05-04-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1124 | Ideal Agro Chemicals,34 - C, Shah Rukn-e-Alam Colony, Multan. | Cypermethrin | 10% (w/w) EC (Appendix-A) | 08-04-2002 | 07-04-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China. | | II | Insect. |
| 1125 | Valiant Agro Services,House 2, Street 1, Block U, New Multan, Multan. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix.-A) | 08-04-2002 | 07-07-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China. | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1126 | Pak China Chemicals.,H# 97, ST# 12 Cavalary Ground (Ext.), Lahore Cantt. | IMIDACLOPRID | 25% (w/w) WP (App.-A) & 95% (w/w) Tech. (App.-B) | 08-04-2002 | 07-04-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1127 | Dawn Agro Services (Private) Limited 2- Main Road, Jinnah Town, Sadiqabad. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 08-04-2002 | 07-04-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1128 | Wel Agro Wise (Pvt.) Ltd.,47/A Industrial Estate, Multan. | IMIDACLOPRID | 25% (W/W) WP (Appendix - A) | 09-04-2002 | 08-04-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1129 | Dynamic Agrilinks (Pvt.) Ltd., 148-149 Mall Plaza, Mall Road, Multan Cantt. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 22-04-2002 | 21-04-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1130 | Gul Yousaf and Company P.690 Dahor Str. Near Hassan Str. 2, Faisalabad. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 31.07.2003 | 21.04.2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China. | Revised | II | Insect. |
| 1131 | Jugnu Enterprises, Room No. 4, 2nd Floor, Arkay Square (Extention),Shahrah-e-Liaquat, Karachi-74000. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 22-04-2002 | 21-04-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1132 | Roots International, 903 Qasr-e-Taemoor, Mehmoodabad Colony, Khanewal Road, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 22-04-2002 | 21-04-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1134 | United Distributors Pakistan Limited, 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Cartap Hydrochloride | 4% (w/w) G (App-A) & 98% Tech. (w/w) (App-B) | 22-04-2002 | 21-04-2005 | Rice Stem Borers. | China | | II | Insect. |
| 1135 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi 74400. | Metribuzin | 70% (w/w) WP (Appendix-A) | 22-04-2002 | 21-04-2005 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | | III | Herb. |
| 1136 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Rd, Karachi -74400. | Monomehypo | 5% (w/w) G (App.-A) & 95.5% Tech.(w/w) Min. (App.-B) | 22-04-2002 | 21-04-2005 | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1137 | Khirman Enterprizes, 344/B, Khakawani Street, Opp. Joyia Petrol Pump, Khanewal Road, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 22-04-2002 | 21-04-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1138 | Zagro NPC (Pvt.) Ltd., 25-Y Main Road, New Multan. | Carbofuran | 3% (w/w) G (App-A) & 75% Tech. (w/w) (App-B) | 22-04-2002 | 21-04-2005 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | Malaysia | | Ib | Insect. |
| 1139 | Valiant Agro Services, House 2, Street 1, Block U, New Multan, Multan. | Methamidophos | 60% (w/v) SL (Appendix-A) | 22-04-2002 | 21-04-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1140 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Triazophos | 40% (w/v) EC (Appendix-A) | 24.05.2003 | 21-04-2005 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | Revised | Ib | Insect. |
| 1141 | Vital Chemicals Corporation, 10-A/2, Gulgashat Colony Bosan Road, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 22-04-2002 | 21-04-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1142 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | Methamidophos | 60% (w/v) SL (Appendix-A) | 27-04-2002 | 26-04-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1143 | Kinetic International (Pvt.) Ltd., 4 - Muhammad Arcade, L.M.Q. Road, Multan. | Lambda - Cyhalothrin | 2.5% (W/V) EC (Appendix.-A) | 04-05-2002 | 03-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1144 | Al-Asif Enterprises, M-34, Al-Rehman Trade Centre, Plot No. Sr. 3/25, Karachi. | Methyl Bromide | 98% Methyl Bromide + 2% Chloropicrin (Appendix-A) | 04-05-2002 | 03-05-2005 | Fumigation of stored agricultural products. | China | | I | Fum. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1145 | Farmers Equity Pakistan (Pvt.) Ltd., 1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Bromoxynil + MCPA | 200 / 200 EC (Appendix- A) | 04-05-2002 | 03-05-2005 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |
| 1146 | HELB Agrosciences Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Endosulfan | 35% (w/v) EC (Appendix-A) | 06-05-2002 | 05-05-2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | Egypt | | II | Insect. |
| 1147 | HELB Agrosciences Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mall Road, Multan Cantt. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 06-05-2002 | 05-05-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | Egypt | | II | Insect. |
| 1133 | United Distributors Pakistan Limited, 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 22-04-2002 | 21-04-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Greece | | II | Insect. |
| 1148 | Solex Chemicals (Pvt.) Ltd., 617-A Shah Rukn-e-Alam Colony, Multan. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 95% (w/w) Tech. (App.-B) | 06-05-2002 | 05-05-2005 | Rice Stem Borers. | China | | II | Insect. |
| 1149 | Matchless (Pvt.) Limited, 34 - British Home, Rawalpindi Cantt. | Methamidophos | 60% (w/v) SL (Appendix-A) | 06-05-2002 | 05-05-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1150 | Pak China Chemicals, 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Esfenvalerate | 5% (w/w) EC (App.-A) & 90% (w/w) Tech. (App.-B) | 07.06.2002 | 05.05.2005 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1151 | Nafees (Pvt.) Ltd.<br>18 - H, Vehari 61100. | Methamidophos | 60% (w/v) SL (Appendix-A) | 06-05-2002 | 05-05-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1152 | C.S. (Chaudry ) (Pvt.) Ltd., House # 2, Street # 1, Block "U", New Multan. | Methamidophos | 60% (w/v) SL (Appendix-A) | 06-05-2002 | 05-05-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1153 | STEDEC Technology Commercialization Corporation of Pakistan, Aiwan-e-Science Building, | Methamidophos | 60% (w/v) SL (Appendix-A) | 06-05-2002 | 05-05-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1154 | Gul Yousaf and Company, P.690 Dahar Street Near Hassan Street, Khyban Colony # 2, Faisalabad. | Methamidophos | 60% (w/v) SL (Appendix-A) | 06-05-2002 | 05-05-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1155 | Pesto Agri (Pvt.) Ltd., 91 - L, Johar Town, Phase-II, Lahore. | Cypermethrin | 10% (w/w) EC (Appendix-A) | 06-05-2002 | 05-05-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U. A. E. | | II | Insect. |
| 1156 | Gul Yousaf and Company, P.690 Dahar Street Near Hassan Street, Khyban Colony # 2, Faisalabad. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 06-05-2002 | 05-05-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1157 | Universal Agro Chemicals (Pvt) Ltd.<br>E/ 12, S.I.T.E. Karachi. | Methamidophos | 60% (w/v) SL (Appendix-A) | 06-05-2002 | 05-05-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Germany | | Ib | Insect. |
| 1158 | Agri Mark Services, M-3 Avanti Park View 141-A Allama Iqbal Road, P.E.C.H.S. Block-2, Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 13-05-2002 | 12-05-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1159 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | Lambda - Cyhalothrin | 2.5% (W/V) EC (Appendix.-A) | 16-05-2002 | 15-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1160 | Nafees (Pvt.) Ltd., 18 - H, Vehari 61100. | Lambda - Cyhalothrin | 2.5% (W/V) EC (Appendix.-A) | 16-05-2002 | 15-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1161 | Gul Yousaf & Company P.690 Dahor Str. Near Hassan Street, Khyban Colony # 2, Faisalabal. | Lambda - Cyhalothrin | 2.5% (W/V) EC (Appendix.-A) | 16-05-2002 | 15-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1162 | Gul Yousaf & Company P.690 Dahor Str. Near Hassan Street, Khyban Colony # 2, Faisalabal. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 31.07.2003 | 15.05.2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | Revised | II | Insect. |
| 1163 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Bifenthrin | 10% EC (w/v) (Appendix-A) | 16-05-2002 | 15-05-2005 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 1164 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | Fenpropathrin | 20% (w/v) EC (App-A) & 90% Tech. (w/w) (App-B) | 18-05-2002 | 17-05-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1165 | Matchless (Pvt.) Limited, 34-British Home, Rawalpindi Cantt. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 18-05-2002 | 17-05-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | U. A. E. | | II | Insect. |
| 1166 | STEDEC Technology Commercialization Corporation of Pakistan, Aiwan-e-Science Building, Ferozepur Road, Lahore. | Lambda - Cyhalothrin | 2.5% (W/V) EC (Appendix.-A) | 16-05-2002 | 15-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1167 | Valiant Agro Services 'House 2, Street 1, Block U, New Multan, Multan. | Fenpropathrin | 20 %( w/v) EC (Appendix-A) | 16-05-2002 | 15-05-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1168 | Valiant Agro Services 'House 2, Street 1, Block U, New Multan, Multan. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 07.06.2003 | 17-05-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | Revised | II | Insect. |
| 1169 | C.S. (Chaudhry Services) (Pvt.) Ltd., Banglow No.2, Street # 1, Block "U", New Multan. | Lambda - Cyhalothrin | 2.5% (W/V) EC (Appendix.-A) | 16-05-2002 | 15-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1170 | The Saggus (Pvt.) Ltd., 7 - B, Shadman II, Lahore. | Lambda - Cyhalothrin | 2.5% (W/V) EC (Appendix.-A) | 18-05-2002 | 17-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1171 | Al-Shafi Sadar & Sons (Pvt.) Ltd., 3-C, First Floor, Nusrat Road, Hasan Arcade, Multan Cantt. | IMIDACLOPRID | 25% (W/W) WP (Appendix - A) | 18-05-2002 | 17-05-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1172 | Farmers Equity Pakistan (Pvt.) Ltd., 1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Lambda - Cyhalothrin | 2.5% (W/V) EC (Appendix.-A) | 16-05-2002 | 15-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1173 | Farmers Equity Pakistan (Pvt.) Ltd., 1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Bifenthrin | 10% EC (w/v) (Appendix-A) | 16-05-2002 | 15-05-2005 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 1174 | HELB Agroscience Pakistan (Pvt.) Ltd., 136,1st Floor, Mall Plaza, Mal Road, Multan Cantt. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 18-05-2002 | 17-05-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | Egypt | | II | Insect. |
| 1175 | Gul Yousaf and Company, P.690 Dahar Street Near Hassan Street, Khyban Colony # 2, Faisalabad. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 18-05-2002 | 17-05-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1176 | Kinetic International,4 - Muhammad Arcade, L.M.Q. Road, Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 18-05-2002 | 17-05-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1177 | Pesto Agri (Pvt.) Ltd., 91 - L, Johar Town, Phase-II, Lahore. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 18-05-2002 | 17-05-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | U. A. E. | | II | Insect. |
| 1178 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | CHLORPYRIFOS | 40% (w/w) EC (App-A) & 94% Tech. (w/w) (App-B) | 18-05-2002 | 17-05-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1179 | Warble (Pvt.) Ltd., Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cypermethrin | 5% (w/v) EC (Appendix-A) | 16-05-2002 | 15-05-2005 | Cotton Pink Bollworm 500 ml/acre, Cotton Spotted Bollworm 500 ml/acre. | U. A. E. | | II | Insect. |
| 1180 | Ideal Agro Chemicals, 34 - C, Shah Rukn-e-Alam Colony, Multan. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix.-A) | 20-05-2002 | 19-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1181 | C.S. (Chaudhry Services) (Pvt.) Ltd., Banglow No.2, Street # 1, Block "U", New Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 20-05-2002 | 19-05-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1182 | STEDEC Technology Commercialization Corporation of Pakistan, Aiwan-e-Science Building, Ferozepur Road, Lahore. | Fenvalerate | 20% (w/v) EC (App-A) & 92% Tech. (w/w) Min. (App-B) | 20-05-2002 | 19-05-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1183 | Data Jee Corporation, Theri Sansi, G.T. Road, Gujranwala, Pakistan. | Acetochlor | 50% (w/w) EC (Appendix - A) | 20-05-2002 | 19-05-2005 | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1184 | Agrolet Chemicals Industries 711- X, D.H.A., Lahore Cantt. | Fenvalerate | 20% (w/v) EC (App-A) & 92% Tech. (w/w) (App-B) | 21-05-2002 | 20-05-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1185 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | Metribuzin | 70% (w/w) WP (App-A) & 93.10% Tech. (w/w) (App-B) | 21-05-2002 | 20-05-2005 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1186 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Triazophos | 40% (w/v) EC (App-A) & 80% Tech. (w/w) (App-B) | 04.02.2003 | 20.05.2005 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | Revised | Ib | Insect. |
| 1187 | Agro Leads International, 55/B, Behind Khawaja Centre, L.M.Q. Road, Multan. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix.-A) | 22-05-2002 | 21-05-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1188 | Zagro NPC (Pvt.) Ltd., 25-Y Main Road, New Multan. | Triazophos | 40% (w/v) EC (App-A) & 80% Tech. (w/w) (App-B) | 22-05-2002 | 21-05-2005 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1189 | Zagro NPC (Pvt.) Ltd., 25-Y Main Road, New Multan. | Methamidophos | 60% (w/v) SL (App-A) & 73% Tech. (w/w) Min. (App-B) | 22-05-2002 | 21-05-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1190 | Ideal Agro Chemicals, 34 - C, Shah Rukn-e-Alam Colony, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 29-05-2002 | 28-05-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1191 | Zulfiqar Trading Corporation, R. No. 6 - 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | Profenofos | 40% (w/v) EC (Appendix-A) | 29-05-2002 | 28-05-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | U. A. E. | | II | Insect. |
| 1192 | Zulfiqar Trading Corporation, R. No. 6 - 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 29-05-2002 | 28-05-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U. A. E. | | II | Insect. |
| 1193 | Zulfiqar Trading Corporation, R. No. 6 - 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 29-05-2002 | 28-05-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U. A. E. | | II | Insect. |
| 1194 | Advantage Agro Chemicals, 199 - Shah Rukn-e-Alam Colony, Multan. | CHLORPYRIFOS | 40% (w/w) EC (Appendix-A) | 29-05-2002 | 28-06-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U. A. E. | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1195 | Granulars (Pvt.) Ltd, Kassam Manzil, 1st Floor, 1 / 29, 'Randal Road, Karachl - 74400. | Metribuzin | 70% (w/w) WP (Appendix- A) | 28-05-2002 | 27-05-2005 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | | III | Herb. |
| 1196 | The Saggus (Pvt.) Ltd., 20 - G, Saggus House, Vehari. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 29-05-2002 | 28-05-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1197 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | Buprofezin | 25% (w/w) WP (Appendix - A) | 30-05-2002 | 29-05-2005 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1198 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | Endosulfan | 35% (w/v) EC (Appendix-A) | 30-05-2002 | 29-05-2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | U. A. E. | | II | Insect. |
| 1199 | Zulfiqar Trading Corporation, R. No. 6 - 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 30-05-2002 | 29-05-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | U. A. E. | | II | Insect. |
| 1200 | Vital Chemicals Corporations 636 - Ravi Block, Allama Iqbal Town, Lahore. | Acetochlor | 50% (w/v) EC (Appendix - A) | 01-06-2002 | 31-05-2005 | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1201 | Warble (Pvt.) Ltd.<br>Suit No. 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 01-06-2002 | 31-05-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U. A. E. | | II | Insect. |
| 1202 | Pesto Agri (Pvt.) Ltd., 91 - L, Johar Town, Phase-II, Lahore. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 01-06-2002 | 31-05-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U. A. E. | | II | Insect. |
| 1203 | Granulars (Pvt.) Ltd. Kassam Manzil, 1st Floor, 1 / 29, 'Randal Road, Karachl - 74400. | Profenofos | 40% EC (w/v) (Appendix-A) | 01-06-2002 | 31-05-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | Egypt | | II | Insect. |
| 1204 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | Alpha-Cypermethrin | 5% (w/v) EC (App-A) & 90% Tech. (w/w) (App-B) | 01-06-2002 | 31-05-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1205 | Kinetic International (Pvt.) Ltd. 4 - Muhammad Arcade, L.M.Q. Road, Multan. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 07-06-2002 | 06-06-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1206 | Farmers Equity Pakistan (Pvt.) Ltd. 3704/70, Hassan Parwana Colony, Multan. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 10-06-2002 | 09-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Malaysia | | II | Insect. |
| 1207 | Jugnu Enterprises 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 09-06-2002 | 10-06-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1208 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | Profenofos | 40% (w/v) EC (Appendix-A) | 11-06-2002 | 11-06-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1209 | C.S. (Chaudhry Services) (Pvt.) Ltd. Banglow No. 2, Street # 1, Block "U", New Multan. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 10-06-2002 | 09-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1210 | Wel Agro Wise (Pvt.) Ltd. '47/A Industrial Estate Multan. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 11-06-2002 | 10-06-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1211 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | Lambda - Cyhalothrin | 2.5% EC (w/v) (App. -A) & 95% (w/w) Tech. (App.-B & C) | 11-06-2002 | 10-06-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1212 | Warble (Pvt.) Ltd. 'Suit No. 18, 3rd Floor Shan Arcade, ' New Garden Town, Lahore. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 11-06-2002 | 10-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U. A. E. | | II | Insect. |
| 1213 | Advantage Agro Chemicals 199 - D, Shah Rukn-E-Alam Colony, Multan. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 11-06-2002 | 10-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | U. A. E. | | II | Insect. |
| 1214 | Nafees (Pvt.) Ltd 18 - H, Vehari 61100. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 11-06-2002 | 10-06-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1215 | Pak China Chemicals, 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Lambda - Cyhalothrin | 2.5% EC (w/v) (App. -A) & 95% (w/w) Tech. (App.-B & C) | 14-06-2002 | 13-06-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1216 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 14-06-2002 | 13-06-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1217 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 14-06-2002 | 13-06-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1218 | Best Enterprises, G - 7, Metro Garden, Manakjee Street, Garden East, Karachi. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix.-A) | 14-06-2002 | 13-06-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1219 | Zulfiqar Trading Corporation, R. No. 6 - 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 14-06-2002 | 13-06-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1220 | Jugnu Enterprises 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Profenofos | 40% (w/v) EC (Appendix - A) | 15-06-2002 | 14-06-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1221 | Peoples Farm Services (Pvt.) Ltd., 9 - Ahmad Mansion, Shahrah -e- Quaid -e- Azam, Lahore. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 14-06-2002 | 13-06-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1222 | Peoples Farm Services (Pvt.) Ltd., 9 - Ahmad Mansion, Shahrah -e- Quaid -e- Azam, Lahore. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix.-A) | 14-06-2002 | 13-06-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1223 | STEDEC Technology Commercialization Corporation of Pakistan, Aiwan-e-Science Building, Ferozepur Road, Lahore. | IMIDACLOPRID | 25% (w/w) WP (App.-A) & 90% Tech. (w/w) (App.-B) | 15-06-2002 | 14-06-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1224 | FarmEco Enterprises, 262-B, Gulgasht Colony, Bosan Road, Multan. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 15-06-2002 | 14-06-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | | II | Insect. |
| 1225 | Zagro NPC (Private) Limited, 25-Y Main Road, New Multan. | Diafenthiuron | 50% (w/v) SC (Appendix-A) | 15-06-2002 | 14-06-2005 | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China | | III | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1226 | Dawn Agro Services (Private) Limited, 2- Main Road, Jinnah Town, Sadiqabad. | Profenofos | 40% (w/v) EC (Appendix - A) | 15-06-2002 | 14-06-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1227 | Agro Leads International, 55/B, Behind Khawaja Centre, L.M.Q. Road, Multan. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 15-06-2002 | 14-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1228 | Agro Leads International, 55/B, Behind Khawaja Centre, L.M.Q. Road, Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 15-06-2002 | 14-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1229 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 15-06-2002 | 14-06-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1230 | S. ESSA 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Thiophanate Methyl | 70% (w/w) WP (Appendix - A) | 15-06-2002 | 14-06-2005 | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | China | | III | Fung. |
| 1231 | Kinetic International (Pvt.) Ltd. 4 - Muhammad Arcade, L.M.Q. Road, Multan. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 17-06-2002 | 16-06-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1232 | Nafees (Pvt.) Ltd 18 - H, Vehari 61100. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 17-06-2002 | 16-06-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1233 | Jugnu Enterprises 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Buprofezin | 25% (w/w) WP (Appendix - A) | 25-06-2002 | 24-06-2005 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1234 | Saad International, 16, Anum Palace, Bohri Road, Opposite Custom House, Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 27-06-2002 | 26-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1235 | The Saggus (Pvt.) Ltd., 7 - B, Shadman-II, Lahore. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 95% (w/w) Tech. (App.-B & C) | 27-06-2002 | 26-06-2005 | Rice Stem Borers. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1236 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Deltamethrin | 2.5% (w/v) EC (App-A) & 98% (w/w) Tech. Min. (App-B & C) | 04.02.2003 | 26.06.2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | Revised | II | Insect. |
| 1237 | Top Class Pesticides (Pvt.) Ltd., 174 - B, Shah Rukn-E-Alam Colony, Multan. | Buprofezin | 25% (w/w) WP (Appendix - A) | 27-06-2002 | 26-06-2005 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | | | III | Insect. |
| 1238 | Advance Agrotech, 768, Mahmoodabad, Khanewal Road, Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 27-06-2002 | 26-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1239 | Vital Chemicals Corporation, 10-A/2, Gulgashat Colony, Bosan Road, Multan. | Monomehypo | 5% G (w/w) (App.-A) & 95% Tech. (w/w) (App.-B & C) | 27-06-2002 | 26-06-2005 | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 1240 | Gul Yousaf & Company, P.690 Dahor Str. Near Hassan Street, Khyban Colony # 2, Faisalabad. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 95% (w/w) Tech. (App.-B & C) | 27-06-2002 | 26-06-2005 | Rice Stem Borers. | China | | II | Insect. |
| 1241 | Raabey Enterprises (Pvt.) Ltd., Flat # 302, 3rd Floor, Stadium Lane # 1, 31 - C, Phase - 5, Defence Housing Authority, Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 28-06-2002 | 27-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre | China | | II | Insect. |
| 1242 | Pesto Agri (Pvt.) Ltd., 91 - L, Johar Town, Phase-II, Lahore. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 28-06-2002 | 27-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1243 | FarmEco Enterprises, 262-B, Gulgasht Colony, Bosan Road, Multan. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 28-06-2002 | 27-06-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1244 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 28-06-2002 | 27-06-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1245 | Raabey Enterprises (Pvt.) Ltd., Flat # 302, 3rd Floor, Stadium Lane # 1, 31 - C, Phase - 5, Defence Housing Authority, Karachi. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 28-06-2002 | 27-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1246 | Advantage Agro Chemicals, 199 - D, Shah Rukn-E-Alam Colony, Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 28-06-2002 | 27-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1247 | Ideal Agro Chemicals,34 - C, Shah Rukn-e-Alam Colony, Multan. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 28-06-2002 | 27-06-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1248 | Dawn Agro Services (Private) Limited, 2- Main Road, Jinnah Town, Sadiqabad. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 29-06-2002 | 28-06-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1249 | Dawn Agro Services (Private) Limited, 2- Main Road, Jinnah Town, Sadiqabad. | Methomyl | 20% (w/v) EC (Appendix-A) | 29-06-2002 | 28-06-2005 | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, Jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphid. | China | | Ib | Insect. |
| 1250 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Lambda - Cyhalothrin | 2.5% (w/v) EC (App.-A) & 95% Tech. Min. (w/w) (App.-B & C) | 29-06-2002 | 28-06-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1251 | ICI Pakistan Ltd., ICI House, 63 - Mozang Road, Lahore. | Cypermethrin | 10% (w/v) EC (App.-A) & 92% (w/w) Tech. Min. (App.-B & C) | 29-06-2002 | 28-06-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1252 | Kinetic International (Pvt.) Ltd. 4 - Muhammad Arcade, L.M.Q. Road, Multan. | Beta-Cypermethrin | 4.5% (w/v) EC (Appendix-A) | 29-06-2002 | 28-06-2005 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 1253 | STEDEC Technology Commercialization Corporation of Pakistan, Aiwan-e-Science Building, Ferozepur Road, Lahore. | CHLORPYRIFOS | 40% (w/v) EC (App-A) & 94% Tech. (w/w) (App-B & C) | 29-06-2002 | 28-06-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1254 | C.S. (Chaudhry Services) (Pvt.) Ltd., Banglow No. 2, Street # 1, Block "U", New Multan. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 29-06-2002 | 28-06-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1255 | Matchless (Pvt.) Limited, 34 - British Home, Rawalpindi Cantt. | Triazophos | 40% EC (w/v) (Appendix-A) | 04-07-2002 | 03-07-2005 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1256 | Ali Akbar Enterprises, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, | CHLORPYRIFOS | 40% (w/v) EC (App.-A) & 94% Tech. (w/w) (App.-B & C) | 08-07-2002 | 07-07-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1257 | Zulfiqar Trading Corporation, R. No. 6 - 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 08-07-2002 | 07-07-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1258 | Al-Muqeet International, 68, Gulistan Market, St # 3, Railway Road, Faisalabad. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix.-A) | 10-07-2002 | 09-07-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1259 | Zagro NPC (Pvt.) Ltd., 25-Y Main Road, New Multan. | Bifenthrin | 10% (w/v) EC (App.-A) & 95% Tech. Min. (App.-B & C) | 10-07-2002 | 09-07-2005 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 1260 | Nafees (Pvt.) Ltd 18 - H, Vehari 61100. | Bifenthrin | 10% EC (w/v) (Appendix-A) | 10-07-2002 | 09-07-2005 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | | | | Insect. |
| 1261 | Dawn Agro Services (Private) Limited, 2- Main Road, Jinnah Town, Sadiqabad. | Acetochlor | 50% (w/v) EC (Appendix - A) | 10-07-2002 | 09-07-2005 | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1262 | Green Gro (Pvt.) Ltd., 29-B, Small Industrial State, Multan Road, Bahawalpur. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 10-07-2002 | 09-07-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1263 | Commander Agro (Pvt.) Ltd., 75-Askaria Colony,Shershah Road, Multan Cantt. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 10-07-2002 | 09-07-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1264 | Peoples Farm Services (Pvt.) Ltd., 9 - Ahmad Mansion, Shahrah -e- Quaid -e- Azam, Lahore. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 10-07-2002 | 09-07-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1265 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Isoproturon | 50% (w/w) WP (App.-A) & 95.5% Tech.Min.(w/w) (App.-B & C) | 10-07-2002 | 09-07-2005 | Weeds in Wheat. | China | | III | Herb. |
| 1266 | Dawn Agro Services (Private) Limited, 2- Main Road, Jinnah Town, Sadiqabad. | Isoproturon | 50% (w/w) WP (Appendix - A) | 10-07-2002 | 09-07-2005 | Weeds in Wheat. | China | | III | Herb. |
| 1267 | FarmEco Enterprises, 262-B, Gulgasht Colony, Bosan Road, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 12-07-2002 | 11-07-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1268 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Triazophos | 40% (w/v) EC (Appendix - A) | 11-07-2002 | 10-07-2005 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1269 | International Trade Centre,120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Bifenthrin | 10% EC (w/v) (Appendix-A) | 10-07-2002 | 11-07-2005 | Cotton pink, spotted, American bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 1270 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | Beta-Cypermethrin | 4.5% (w/v) EC (Appendix-A) | 11-07-2002 | 10-07-2005 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 1271 | Top Class Pesticides (Pvt.) Ltd., 174 - B, Shah Rukn-E-Alam Colony, Multan. | Lambda - Cyhalothrin | 2.5% EC (w/v) (Appendix-A) | 11-07-2002 | 10-07-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1272 | The Saggus (Pvt.) Ltd., 7 - B, Shadman II, Lahore. | Dicofol | 18.5 % (w/v) EC (Appendix-A) | 11-07-2002 | 10-07-2005 | Mites of cotton, sugarcane, apples and almonds. | China | | III | Acar. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1273 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 12-07-2002 | 10-07-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1274 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | Buprofezin | 25% (w/w) WP (Appendix - A) | | 11-07-2005 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1275 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 11-07-2002 | 10-07-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1276 | Al-Mehmood Chemicals, Suraj Ganj Bazar, Quetta. | Dicofol | 18.5 % (w/v) EC (Appendix-A) | 12-07-2002 | 11-07-2005 | Mites of cotton, sugarcane, apples and almonds. | China | | III | Acar. |
| 1277 | Jugnu Enterprises 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Esfenvalerate | 5% EC (w/v) (Appendix-A) | 22-07-2002 | 21-07-2005 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1278 | Jugnu Enterprises 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 22-07-2002 | 21-07-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1279 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 22-07-2002 | 21-07-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1280 | Vital Chemicals Corporation, 10-A/2, Gulgashat Colony, Bosan Road, Multan. | Profenofos | 40% (w/v) EC (Appendix-A) | 22-07-2002 | 21-07-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1281 | Vital Chemicals Corporation, 10-A/2, Gulgashat Colony, Bosan Road, Multan. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 22-07-2002 | 21-07-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1282 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | Profenofos | 40% (w/v) EC (App.-A) & 80% (w/w) Tech. (App.-B & C) | 22-07-2002 | 21-07-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1283 | Green Gro (Pvt.) Ltd., 29-B, Small Industrial State, Multan Road, Bahawalpur. | Beta - Cyfluthrin | 2.5% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids | China | | II | Insect. |
| 1284 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre | China | | II | Insect. |
| 1285 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1286 | Top Class Pesticides (Pvt.) Ltd., 174 - B, Shah Rukn-e-Alam Colony, Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1287 | Valiant Agro Services, House 2, Street 1, Block U, New Multan, Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1288 | Jugnu Enterprises 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Beta - Cyfluthrin | 2.5% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids | China | | II | Insect. |
| 1289 | The Saggus (Pvt.) Ltd., 7 - B, Shadman-II, Lahore. | Monomehypo | 5% (w/w) (App.-A) & 95% Tech. (w/w) (App.-B) | 30-07-2002 | 29-07-2005 | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 1290 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 31-07-2002 | 30-07-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1291 | STEDEC Technology Commercialization Corporation of Pakistan, Aiwan-e-Science Building, Ferozepur Road, Lahore. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 31-07-2002 | 29-07-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1292 | Nafees (Pvt.) Ltd., 18 - H, Vehari 61100. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1293 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1294 | International Trade Centre, 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Esfenvalerate | 5% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1295 | Ideal Agro Chemicals, 34 - C, Shah Rukn-e-Alam Colony, Multan. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 30-07-2002 | 29-07-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1296 | Warble (Pvt.) Ltd. 'Suit No. 18, 3rd Floor Shan Arcade, ' New Garden Town, Lahore. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 08-08-2002 | 07-08-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | UAE | | II | Insect. |
| 1297 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | IMIDACLOPRID | 25% (w/w) WP (App.-A) & 95% (w/w) Tech. Min. (App.-B) | 04.02.2003 | 07-08-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | Revised | II | Insect. |
| 1298 | Top Class Pesticides (Pvt.) Ltd., 174 - B, Shah Rukn-e-Alam Colony, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 08-08-2002 | 07-08-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1299 | Top Class Pesticides (Pvt.) Ltd., 174 - B, Shah Rukn-e-Alam Colony, Multan. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 08-08-2002 | 07-08-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1300 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 08-08-2002 | 07-08-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1301 | Al-Muqeet International, 68, Gulistan Market, St # 3, Railway Road, Faisalabad. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 08-08-2002 | 07-08-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1302 | FarmEco Enterprises, 262-B, Gulgasht Colony, Bosan Road, Multan. | Acetochlor | 50% (w/v) EC (Appendix - A) | 08-08-2002 | 07-08-2005 | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1303 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | Endosulfan | 35% (w/v) EC (App. -A) & 94% Tech. (App. -B & C) | 09-08-2002 | 08-08-2005 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |
| 1304 | Agro Leads International, 55/B, Behind Khawaja Centre, L.M.Q. Road, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 08-08-2002 | 07-08-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1305 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 10-08-2002 | 09-08-2005 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1306 | Agrolet Chemicals Industries, 5A-5B, Industrial Estate, Multan. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 15-08-2002 | 14-08-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1307 | Nafees (Pvt.) Ltd., 18 - H, Vehari 61100. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 16-08-2002 | 15-08-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1308 | Zagro NPC (Pvt.) Ltd., 25-Y Main Road, New Multan. | Isoproturon | 50% (w/w) WP (Appendix-A) | 16-08-2002 | 15-08-2005 | Weeds in Wheat. | China | | III | Herb. |
| 1309 | Raabey Enterprises (Pvt.) Ltd., Flat # 302, 3rd Floor, Stadium Lane # 1, 31 - C, Phase - 5, Defence Housing Authority, Karachi. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 16-08-2002 | 15-08-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | UAE | | II | Insect. |
| 1310 | Advance Agrotech, 768, Mahmoodabad, Khanewal Road, Multan. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 16-08-2002 | 15-08-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1311 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi 74400. | Cypermethrin | 20% (w/v) EC (Appendix-A) | 16-08-2002 | 15-08-2005 | Cotton Pink Bollworm 125 ml/acre,<br>Cotton Spotted Bollworm 125 ml/acre | UAE | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1312 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Isoproturon | 50% (w/w) WP (Appendix-A) | 16-08-2002 | 15-08-2005 | Weeds in Wheat. | UAE | | III | Herb. |
| 1313 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | Isoproturon | 50% (w/w) WP (Appendix-A) | 16-08-2002 | 15-08-2005 | Weeds in Wheat. | China | | III | Herb. |
| 1314 | Al-Muqeet International, 68, Gulistan Market, St # 3, Railway Road, Faisalabad. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 16-08-2002 | 15-08-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1315 | Agrolet Chemicals Industries, 5A-5B, Industrial Estate, Multan. | Cypermethrin | 10% (w/v) EC (App. -A) & 92% (w/w) Tech. Min. (App.-B) | 05-09-2002 | 04-09-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | Greece | | II | Insect. |
| 1316 | Agrolet Chemicals Industries, 5A-5B, Industrial Estate, Multan. | Alpha-Cypermethrin | 5% (w/v) EC (App.-A) & 95% (w/w) Min. Tech. (App.-B) | 05-09-2002 | 04-09-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Greece | | II | Insect. |
| 1317 | Agrolet Chemicals Industries, 5A-5B, Industrial Estate, Multan. | CHLORPYRIFOS | 40% (w/v) EC (App.-A) & 97% Tech. (w/w) (App.-B) | 06-09-2002 | 05-09-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Greece | | II | Insect. |
| 1318 | Warble (Pvt.) Ltd. 'Suit No. 18, 3rd Floor Shan Arcade, ' New Garden Town, Lahore. | Deltamethrin | 1.5% (w/v) EC (Appendix-A) | 06-09-2002 | 05-09-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | UAE | | II | Insect. |
| 1319 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | CHLORPYRIFOS | 40% (w/v) EC (App.-A) & 97% Tech. (w/w) Min. (App.-B) | 04.02.2003 | 05-09-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | Greece | Revised | II | Insect. |
| 1320 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Carbendazim | 50% (w/w) WP (App.-A) & 98% Tech. (w/w) Min. (App-B) | 06-09-2002 | 05-09-2005 | Powdery mildew on grapes, apples and peas and sugarbeet leaf spots. | China | | III | Fung. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1321 | Marvi Agrochem (Pvt.) Ltd., 12 - M, Block - 6, P.E.C.H.S., Karachi. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 05-09-2002 | 04-09-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1322 | Weal-AG Corporation, Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 05-09-2002 | 04-09-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | UAE | | II | Insect. |
| 1323 | Welcon Chemicals (Pvt.) Ltd., Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Alpha-Cypermethrin | 5% (w/v) EC (App.-A) & 95% (w/w) Min. Tech. (App.-B) | 05-09-2002 | 04-09-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Greece | | II | Insect. |
| 1324 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 11-09-2002 | 10-09-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | UAE | | II | Insect. |
| 1325 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 11-09-2002 | 10-09-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | UAE | | II | Insect. |
| 1326 | Agrolet Chemicals Industries, 5A-5B, Industrial Estate, Multan. | Profenofos | 40% (w/v) EC (App.-A) & 89% (w/w) Tech. Min. (App.-B) | 20-09-2002 | 19-09-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | Greece | | II | Insect. |
| 1327 | Hiero International, Trust Plaza, Room No, 9,10- First Floor, L. M. Q. Road, Multan. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix.-A) | 23-09-2002 | 22-09-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1328 | KTK Pesticides (Pvt) Ltd., 29-M, Civic Centre, Model Town (Ext.), Lahore. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 23-09-2002 | 22-09-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | Belgium. | | II | Insect. |
| 1329 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Lambda - Cyhalothrin | 2.5% (w/v) EC (App.-A) & 95% Tech. (w/w) Min. (App.-B) | 11.12.2002 | 22.09.2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | Revised | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1330 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Copper Oxychloride | 50% WP (w/w) (App. -A) & 92% (w/w) Tech. Min. (App. -B) | 01-10-2002 | 30-09-2005 | Potato, Early blight, 1000 gm / acre<br>Potato, Late blight, 1000 gm / acre<br>Tomato, Early blight, 1000 gm / acre<br>Tomato, Late blight, 1000 gm / acre<br>Chilies, Leaf blight, 500 gm / acre<br>Cucurbits, Downy mildew, 500 gm / acre | China | | III | Fung. |
| 1331 | United Distributors Pakistan Limited, 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Thiophanate Methyl | 70% (w/w) WP (Appendix - A) | 01-10-2002 | 30-09-2005 | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | China | | III | Fung. |
| 1332 | Ideal Agro Chemicals, 34 - C, Shah Rukn-e-Alam Colony, Multan. | Methamidophos | 60% (w/v) SL (Appendix-A) | 15-10-2002 | 14-10-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1333 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 15-10-2002 | 14-10-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | UAE | | II | Insect. |
| 1334 | Zagro NPC (Pvt.) Ltd., 25-Y Main Road, New Multan. | Esfenvalerate | 5% EC (w/v) (Appendix-A) | 15-10-2002 | 14-10-2005 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1335 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | Deltamethrin | 2.5% (w/v) EC (App.-A) & 98% Tech. (w/w) (App.-B) | 15-10-2002 | 14-10-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | Greece | | II | Insect. |
| 1336 | Grow Green International, Room No.6, 5th Floor, P.I.D.C. House, Karachi. | Carbofuran | 3% (w/w) G (App.-A) & 98% Tech. (w/w) (App.-B) | 15-10-2002 | 14-10-2005 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 1337 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi 74400. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 98% Tech. (w/w) (App.-B) | 17-10-2002 | 16-10-2005 | Rice Stem Borers. | China | | II | Insect. |
| 1338 | Universal Agro Chemicals (Pvt) Ltd.<br>E/ 12, S.I.T.E. Karachi. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 17-10-2002 | 16-10-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1339 | Matchless (Pvt.) Limited, 34 - British Home, Rawalpindi Cantt. | Profenofos | 40% (w/v) EC (Appendix-A) | 23-10-2002 | 22-10-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1340 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Isoproturon | 50% (w/w) WP (App.-A) & 97% Tech. Min. (w/w) (App.-B) | 24-10-2002 | 23-10-2005 | Weeds in Wheat. | China | | III | Herb. |
| 1341 | Nafees (Pvt.) Ltd., 18 - H, Vehari 61100. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 23-10-2002 | 22-10-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1342 | Chawla International, Old Rally Brothers Building, Opp. NBP Head Office, Talpur Road, Karachi. | Profenofos | 40% EC (w/v) (Appendix-A) | 23-10-2002 | 22-10-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1343 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | Buprofezin | 25% (w/w) WP (App.-A) & 95% Tech. (w/w) (App-B) | 25-10-2002 | 24-10-2005 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1344 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 31-10-2002 | 30-10-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | UAE | | II | Insect. |
| 1345 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Carbofuran | 3% (w/w) G (App.-A) & 98% Tech. (w/w) (App.-B) | 30-10-2002 | 29-10-2005 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 1346 | Matchless (Pvt.) Limited, 34 - British Home, Rawalpindi Cantt. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 30-10-2002 | 29-10-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1347 | Top Class Pesticides (Pvt.) Ltd., 174 - B, Shah Rukn-e-Alam Colony, Multan. | Isoproturon | 50% (w/w) WP (Appendix - A) | 30-10-2002 | 29-10-2005 | Weeds in Wheat. | China | | III | Herb. |
| 1348 | Universal Agro Chemicals (Pvt) Ltd. E / 12, S.I.T.E. Karachi. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 12-11-2002 | 11-11-2005 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1349 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Carbofuran | 3% (w/w) G (App.-A) & 98% Tech. Min. (w/w) (App.-B) | 07-11-2002 | 06-11-2005 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 1350 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cypermethrin | 20% (w/v) EC (Appendix-A) | 15-11-2002 | 14-11-2005 | Cotton Pink Bollworm 125 ml/acre, Cotton Spotted Bollworm 125 ml/acre | UAE | | II | Insect. |
| 1351 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Carbaryl | 85% (w/w) SP (App.-A) & 99% Tech. Min. (w/w) (App.-B) | 19-11-2002 | 20-11-2005 | Cotton spotted bollworms, Jassids, Thrips, Tobacco budworm and Grape mealy bugs. | Greece | | II | Insect. |
| 1352 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Esfenvalerate | 5% (w/v) EC (App.-A) & 90% (w/w) Tech. (App.-B) | 19-11-2002 | 18-11-2005 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1353 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Fenpropathrin | 20% (w/v) EC (App.-A) & 90% Tech. (w/w) (App.-B) | | 29-11-2005 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1354 | Hiero International Trust Plaza, Room No. 9,10-First Floor, L. M. Q. Road, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix-A) | 30-11-2002 | 29-11-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China. | | II | Insect. |
| 1355 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Cypermethrin | 10% (w/v) EC (App.-A) & 90% (w/w) Tech. Min. (App.-B) | 29-11-2002 | 29-11-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1356 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | IMIDACLOPRID | 25% (w/w) WP (App.-A) & 90% Tech. (w/w) (App.-B) | 30-11-2002 | 29-11-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1358 | Welcon Chemicals (Pvt.) Ltd., Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | IMIDACLOPRID | 25% (w/w) WP (App.-A) & 95% (w/w) Tech. Min. (App.-B) | 12-12-2002 | 11-12-2005 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1359 | Hiero International Trust Plaza, Room No. 9,10-First Floor, L. M. Q. Road, Multan. | Beta-Cypermethrin | 4.5 % (w/v) EC (Appendix-A) | 10-12-2002 | 09-12-2005 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 1360 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Pendimethalin | 33% (w/v) EC (App-A) & 90% (w/w) Tech. (App-B) | 12-12-2002 | 11-12-2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 1361 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Deltamethrin | 2.5% (w/v) EC (App-A) & 98% Tech. (w/w) Min. (App-B) | 10-12-2002 | 09-12-2005 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1362 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Metalaxyl + Mancozeb | 72% WP (8% + 64% (w/w) min. ) (App-A) | 12-12-2002 | 11-12-2005 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 1363 | Granulars (Pvt.) Ltd. Kassam Manzil, 1st Floor, 1 / 29, Randal Road, Karachl - 74400. | Buprofezin | 25% (w/w) WP (Appendix-A) | 10-12-2002 | 09-12-2005 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1364 | Granulars (Pvt.) Ltd. Kassam Manzil, 1st Floor, 1 / 29, Randal Road, Karachl - 74400. | Methamidophos | 60% (w/v) SL (Appendix-A) | 10-12-2002 | 09-12-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1365 | Granulars (Pvt.) Ltd. Kassam Manzil, 1st Floor, 1 / 29, Randal Road, Karachl - 74400. | Methamidophos | 60% (w/v) SL (Appendix-A) | 10-12-2002 | 09-12-2005 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | Greece | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1366 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 10-12-2002 | 09-12-2005 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | UAE | | II | Insect. |
| 1367 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Pendimethalin | 33% (w/v) EC (Appendix-A) | 10-12-2002 | 09-12-2005 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 1368 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | Metalaxyl + Mancozeb | 72% WP (Appendix-A) | 10-12-2002 | 09-12-2005 | Cucumber downy mildew, chillies collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 1369 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Cypermethrin | 10% (w/v) EC (App.-A) & 90% (w/w) Tech. Min. (App.-B) | 01-01-2003 | 31-12-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1370 | Hiero International Trust Plaza, Room No. 9,10-First Floor, L. M. Q. Road, Multan. | Cypermethrin | 10% (w/v) EC (Appendix.-A) | 01-01-2003 | 31-12-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1371 | Al-Mehmood Chemicals Suraj Ganj Bazar, Quetta. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 01-01-2003 | 31-12-2005 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1372 | Al-Mehmood Chemicals Suraj Ganj Bazar, Quetta. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 01-01-2003 | 31-12-2005 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1373 | Warble (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, New Garden Town, Lahore. | Profenofos | 40% (w/v) EC (App.-A) & 85% (w/w) Tech. (App.-B) | 01-01-2003 | 31-12-2005 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1374 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Isoproturon | 50% (w/w) WP (Appendix - A) | 01-01-2003 | 31-12-2005 | Weeds in Wheat. | UAE | | III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1375 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Monomehypo | 5% G (w/w) (App.-A) & 95% Tech. (w/w) Min. (App.-B) | 01-01-2003 | 31-12-2005 | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 1376 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Metribuzin | 70% (w/w) WP (Appendix- A) | 01-01-2003 | 31-12-2005 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | | III | Herb. |
| 1377 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Profenofos | 40% (w/v) EC (Appendix-A) | 04-01-2003 | 03-01-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1378 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Acetochlor | 50% (w/v) EC (Appendix-A ) | 04-01-2003 | 03-01-2006 | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1379 | Al-Mehmood Chemicals Suraj Ganj Bazar, Quetta. | Methamidophos | 60% (w/v) SL (Appendix-A) | 04-01-2003 | 03-01-2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1380 | United Distributors Pakistan Limited 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 04-01-2003 | 03-01-2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | UAE | | II | Insect. |
| 1381 | United Distributors Pakistan Limited 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 04-01-2003 | 03-01-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | UAE | | II | Insect. |
| 1382 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | Metribuzin | 70% (w/w) WP (Appendix- A) | 06-01-2003 | 05-01-2006 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | | III | Herb. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1383 | Welcon Chemicals (Pvt.) Ltd. 25 - U, Block Alama Iqbal Market, New Multan. | Trifluralin | 48% (w/v) EC (Appendix-A) | 04-01-2003 | 03-01-2006 | Annual grasses and broad leaved weeds in cotton, soyabean and vegetables. | Greece | | III | Herb. |
| 1384 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Mancozeb | 80 % (w/w) WP (Appendix-A) | 04-01-2003 | 03-01-2006 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 1385 | Argo Chemicals Corporation 277 - Shamsabad, Multan. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix.-A) | 14-01-2003 | 13-01-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1386 | Argo Chemicals Corporation 277 - Shamsabad, Multan. | Beta-Cypermethrin | 4.5% (w/v) EC (Appendix-A) | 14-01-2003 | 13-01-2006 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 1387 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 98% Tech. (w/w) (App.-B) | 16-01-2003 | 15-01-2006 | Rice Stem Borers. | China | | II | Insect. |
| 1388 | Zulfiqar Trading Corporation R. No. 6 - 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 16-01-2003 | 15-01-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre | China | | II | Insect. |
| 1389 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | Pendimethalin | 33% (w/v) EC (Appendix-A) | 16-01-2003 | 15-01-2006 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 1390 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 16-01-2003 | 15-01-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1391 | Hiero International 1st Floor, Trust Plaza, L.M.Q. Road, Multan. | Buprofezin | 25% (w/w) WP (Appendix-A) | 16-01-2003 | 15-01-2006 | Cotton whitefly, Jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1392 | Hiero International 1st Floor, Trust Plaza, L.M.Q. Road, Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 15-01-2003 | 14-01-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1393 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | CHLORPYRIFOS | 40% (w/v) EC (App-A) & 97% Tech. (w/w) (App-B) | 16-01-2003 | 15-01-2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1394 | S. ESSA 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 98% Tech. (w/w) (App.-B) | 16-01-2003 | 15-01-2006 | Rice Stem Borers. | China | | II | Insect. |
| 1395 | Vital Chemicals Corporation 10-A/2, Gulgashat Colony, Bosan Road, Multan. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 16-01-2003 | 15-01-2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | China | | II | Insect. |
| 1396 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | Triazophos | 40% (w/v) EC (Appendix-A) | 16-01-2003 | 15-12-2005 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1397 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | Carbofuran | 3% (w/w) G (App.-A) & 98% Tech. (w/w) (App.-B) | 25-01-2003 | 24-01-2006 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 1398 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Ametryn + Atrazine | 80% WP (w/w) (Appendix-A) | 03-02-2003 | 02-02-2006 | Weeds in maize, rice and sugarcane. | China | | III | Herb. |
| 1399 | United Distributors Pakistan Limited 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Cypermethrin | 10% (w/v) EC (Appendix-A) | 04-02-2003 | 03-02-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1400 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 98% Tech. (w/w) (App.-B) | 04-02-2003 | 03-02-2006 | Rice Stem Borers. | China | | II | Insect. |
| 1401 | Universal Agro Chemicals (Pvt.) Ltd. E / 12, S.I.T.E. Karachi. | Fenpropathrin | 20% (w/v) EC (Appendix-A) | 04-02-2003 | 03-02-2006 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1402 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | Esfenvalerate | 5% (w/v) EC (Appendix-A) | 19.02.2003 | 18.02.2006 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1403 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | Beta - Cyfluthrin | 2.5% (w/v) EC (Appendix-A) | 19.02.2003 | 18.02.2006 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids. | China | | II | Insect. |
| 1404 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Lambda - Cyhalothrin | 2.5% EC (w/v) (App. -A) & 95% (w/w) Tech. Min. (App.-B & C) | 19.02.2003 | 18.02.2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1405 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 98% Tech. (w/w) Min. (App.-B) | 19-02-2003 | 18-02-2006 | Rice Stem Borers. | China | | II | Insect. |
| 1406 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Fenvalerate | 20% (w/v) EC (Appendix-A) | 19.02.2003 | 18.02.2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1407 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 19.02.2003 | 18.02.2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1408 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix.-A) | 19.02.2003 | 18.02.2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1409 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | Methomyl | 20% (w/v) EC (Appendix-A) | 19.02.2003 | 18.02.2006 | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, Jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphid. | China | | Ib | Insect. |
| 1410 | Agrolet Chemicals Industries 711- X, D.H.A., Lahore Cantt. | Acetochlor | 50% (w/v) EC (App.-A) & 86.24% Tech. (w/w) Min. (App.-B) | 19.02.2003 | 18.02.2006 | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1411 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 19.02.2003 | 18.02.2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | UAE | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1412 | United Distributors Pakistan Limited 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Deltamethrin | 2.5% (w/v) EC (Appendix-A) | 19-02-2003 | 18-02-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | UAE | | II | Insect. |
| 1413 | Zulfiqar Trading Corporation R. No. 6 - 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | IMIDACLOPRID | 25% (w/w) WP (Appendix-A) | 19-02-2003 | 18-02-2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1414 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 22-02-2003 | 21-02-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1415 | Solex Chemicals (Pvt.) Ltd., Solex House 768, Mahmoodabad, Khanewal Road, Multan. | Ametryn + Atrazine | 80% WP (w/w) (Appendix-A) | 12.03.2003 | 11.03.2006 | Weeds in maize, rice and sugarcane. | China | | III | Herb. |
| 1416 | HELB Pesticides & Chemicals Pakistan (Pvt.) Ltd. 131 Mall Plaza Quid-e-Azam Road, Multan Cant. | Butachlor | 60% EC (w/v) (Appendix-A) | 12.03.2003 | 11.03.2006 | Weed control in Paddy. | Egypt | | III | Herb. |
| 1417 | HELB Pesticides & Chemicals Pakistan (Pvt.) Ltd. 131 Mall Plaza Quid-e-Azam Road, Multan Cant. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 12.03.2003 | 11.03.2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | Egypt | II | II | Insect. |
| 1418 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Carbofuran | 3% (w/w) G & Tech. 75% DP & 98% Min. (w/w) (Appendix - A, B, C & D) | 20-03-2003 | 19-03-2006 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 1419 | HELB Pesticides & Chemicals Pakistan (Pvt.) Ltd. 131 Mall Plaza Quid-e-Azam Road, Multan Cant. | Bromoxynil + MCPA | 200 / 200 EC (w/v) (Appendix- A) | 21.03.2003 | 20.03.2006 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | **Egypt** | | II +III | Herb. |
| 1420 | United Distributors Pakistan Limited 9th Floor, NIC Building, Abbasi Shaheed Rd, Karachi. | Alpha-Cypermethrin | 5% (w/v) EC (Appendix-A) | 21.03.2003 | 20.03.2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | UAE | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1421 | Agrolet Chemicals Industries 711- X, D.H.A., Lahore Cantt. | Thiodicarb | 80% (w/w) DF (App.-A) & 95% Tech. (w/w) (App.-B) | 21.03.2003 | 20.03.2006 | Cotton pink and spotted bollworms; eggs and larvae of Heliothis and army worm on cotton and burseem; cabbage worm, and tabacco budworm and cotton jassids, thrips and whitefly. | China | | | |
| 1422 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Lambda - Cyhalothrin | 2.5% (w/v) EC (Appendix-A) | 21.03.2003 | 20.03.2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | UAE | | II | Insect. |
| 1423 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | Pendimethalin | 33% (w/v) EC (Appendix-A) | 21.03.2003 | 20.03.2006 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 1424 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | Triazophos | 40% (w/v) EC (Appendix - A) | 21.03.2003 | 20.03.2006 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1425 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | Monomehypo | 5% (w/w) G (App.-A) & 95% Tech. (w/w) (App.-B) | 21.03.2003 | 20.03.2006 | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 1426 | Agrolet Chemicals Industries 711- X, D.H.A., Lahore Cantt. | Metolachlor | 50% (w/w) WP (App.-A) & 96% Tech. (w/w) Min. (App.-B) | 22.03.2003 | 21.03.2006 | Broad - leafed weeds, grasses and sedges in cotton and sunflower. | China | | | |
| 1427 | HELB Pesticides & Chemicals Pakistan (Pvt.) Ltd. 131 Mall Plaza Quid-e-Azam Road, Multan Cant. | Thiophanate Methyl | 70% (w/w) WP (Appendix - A) | 22.03.2003 | 21.03.2006 | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | Egypt | | III | Fung. |
| 1428 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Carbofuran | 3% (w/w) G (App.-A) & 98% Tech. Min. (w/w) (App.-B) | 22.03.2003 | 21.03.2006 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 1429 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Carbofuran | 3% (w/w) G & Tech. 75% DP & 98% Min. (w/w) (Appendix - A, B, C & D) | 08.04.2003 | 07.04.2006 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1430 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Acetochlor | 50% EC (w/v) (App.-A) & 85% Tech. (w/w) (App.-B) | 08.04.2003 | 07.04.2006 | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1431 | Pak China Chemicals, 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | CHLORPYRIFOS | 40% (w/v) EC (App.-A) & 97% Tech. (w/w) Min. (App.-B) | 05.04.2003 | 04.04.2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U. K. | | II | Insect. |
| 1432 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | Acetochlor | 50% (w/v) EC (App.-A) & 93% Tech. (w/w) (App.-B) | 09.04.2003 | 08.04.2006 | Annual grasses and broad leaf weeds in maize, Sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1433 | Gul Yousaf & Company P.690 Dahor Str. Near Hassan Street, Khyban Colony # 2, Faisalabal. | PENDIMETHALIN | 33% (w/v) EC (Appendix-A) | 09.04.2003 | 08-04-2006 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solanum nigra. | China | | III | Herb. |
| 1434 | Mian Pesticide (Pvt.) Ltd. 605-A, Block-A, Shah Rukn-e-Alam Colony, Multan. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 09.04.2003 | 08-04-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1435 | National Insecticides Company (Pvt.) Ltd. Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | BETA - CYFLUTHRIN | 2.5% (w/v) EC (App.-A) & 95% Tech. (w/w) Min. (App.-B) | 10.04.2003 | 09-04-2006 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids. | China | | II | Insect. |
| 1436 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | TRIAZOPHOS | 40% (w/v) EC (App.-A) & 80% Tech. (w/w) (App.-B) | 10.04.2003 | 09-04-2006 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1437 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | PROFENOFOS | 40% (w/v) EC (Appendix-A) | 10.04.2003 | 09-04-2006 | Cotton, pink, spotted & American bollworms, whitefly, thrips, jassids & mites, potato jassids & chilli bud mites. | China | | II | Insect. |
| 1438 | Fyzon International 74, Wazir Mansion, Aiwan-e-Tijarat Road, Karachi. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 10.04.2003 | 09-04-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U. K. | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1439 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | FENPROPATHRIN | 20% (w/v) EC (Appendix-A) | 11.04.2003 | 10-04-2006 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1440 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | Acetochlor | 50% (w/v) EC (Appendix-A) | 12.04.2003 | 11-04-2006 | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1441 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | BETA - CYFLUTHRIN | 2.5% (w/v) EC (App.-A) & 95% Tech. (w/w) Min. (App.-B) | 12.04.2003 | 11-04-2006 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids. | China | | II | Insect. |
| 1442 | Gul Yousaf & Company P.690 Dahor Str. Near Hassan Street, Khyban Colony # 2, Faisalabal. | PROFENOFOS | 40% (w/v) EC (Appendix-A) | 12.04.2003 | 11-04-2006 | Cotton, pink, spotted & American bollworms, whitefly, thrips, jassids & mites, potato jassids & chilli bud mites. | China | | II | Insect. |
| 1443 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | METHAMIDOPHOS | 60% (w/v) SL (Appendix-A) | 12.04.2003 | 11-04-2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1444 | Dynamic Agrilinks (Pvt.) Ltd. 148-149 Mall Plaza, Mall Road, Multan Cantt. | IMIDACLOPRID | 25% (w/w) WP (Appendix-A) | 12.04.2003 | 11-04-2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | | |
| 1445 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | Acetochlor | 50% (w/v) EC (Appendix-A) | 12.04.2003 | 11-04-2006 | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1446 | Argo Chemicals Corporation 277 - Shamsabad, Multan. | IMIDACLOPRID | 25% (w/w) WP (Appendix-A) | 12.04.2003 | 11-04-2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1447 | Mian Pesticide (Pvt.) Ltd. 605-A, Block-A, Shah Rukn-e-Alam Colony, Multan. | PROFENOFOS | 40% (w/v) EC (Appendix-A) | 12.04.2003 | 11-04-2006 | Cotton, pink, spotted & American bollworms, whitefly, thrips, jassids & mites, potato jassids & chilli bud mites. | China | | II | Insect. |
| 1448 | Mian Pesticide (Pvt.) Ltd. 605-A, Block-A, Shah Rukn-e-Alam Colony, Multan. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 12.04.2003 | 11-04-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1449 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | METHAMIDOPHOS | 60% (w/v) SL (App.-A) & 70% (w/w) Tech. Min. (App.-B) | 25.04.2003 | 24-04-2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1450 | Grow Green International Room No.6, 5th Floor, P.I.D.C. House, Karachi. | Cartap Hydrochloride | 4% (w/w) G (App.-A) & 95% (w/w) Tech. (App.-B) | 25.04.2003 | 24-04-2006 | Rice Stem Borers. | China | | II | Insect. |
| 1451 | Gul Yousaf & Company P.690 Dahor Str. Near Hassan Street, Khyban Colony # 2, Faisalabal. | MONOMEHYPO | 5% G (w/w) (App.-A) & 95% Tech. (w/w) Min. (App.-B) | 25.04.2003 | 24-04-2006 | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 1452 | Mian Pesticide (Pvt.) Ltd. 605-A, Block-A, Shah Rukn-e-Alam Colony, Multan. | TRIAZOPHOS | 40% (w/v) EC (Appendix-A) | 25.04.2003 | 24-04-2006 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1453 | Fyzon International 74, Wazir Mansion, Aiwan-e-Tijarat Road, Karachi. | ALPHA-CYPERMETHRIN | 5% (w/v) EC (Appendix-A) | 25.04.2003 | 24-04-2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth | England. | | II | Insect. |
| 1454 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | CHLORPYRIFOS | 40% (w/v) EC (App.-A) | 28.04.2003 | 27-04-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U. K. | | II | Insect. |
| 1455 | Agrolet Chemicals Industries, 711- X, D.H.A., Lahore Cantt. | CARTAP HYDROCHLORIDE | 4% (w/w) G (App.-A) & 98% (w/w) Tech. (App.-B) | 25.04.2003 | 24-04-2006 | Rice Stem Borers. | China | | II | Insect. |
| 1456 | Ash-Hub Enterprises Shehzad Manzil, Water Works Road, Multan. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 29.04.2003 | 28-04-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1457 | Ash-Hub Enterprises Shehzad Manzil, Water Works Road, Multan. | BUPROFEZIN | 25% (w/w) WP (Appendix - A) | 29.04.2003 | 28-04-2006 | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1458 | Ash-Hub Enterprises Shehzad Manzil, Water Works Road, Multan. | FENVALERATE | 20% (w/v) EC (Appendix-A) | 29.04.2003 | 28-04-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre | China | | II | Insect. |
| 1459 | Farms & Farmers Agro Links, 246-CA / Tipu Shaheed Road, Model Town-A, Bahawalpur. | PROFENOFOS | 40% (w/v) EC (Appendix-A) | 28.04.2003 | 27-04-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & chilli bud mites. | China | | II | Insect. |
| 1460 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | CHLORPYRIFOS | 40% (w/v) EC (App.-A) & 97% Tech. (w/w) Min. (App.-B) | 28.04.2003 | 27-04-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U. K. | | II | Insect. |
| 1461 | Granulars (Pvt.) Ltd. Kassam Manzil, 1st Floor, 1 / 29, Randal Road, Karachi - 74400. | PENDIMETHALIN | 33% (w/v) EC (Appendix-A) | 28.04.2003 | 27-04-2006 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |
| 1462 | Dawn Agro Services (Private) Limited, 2-Main Road, Jinnah Town, Sadiqabad- 54350. | BUPROFEZIN | 25% (w/w) WP (Appendix-A) | 29.04.2003 | 28-04-2006 | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1463 | HELB Pesticides & Chemicals Pakistan (Pvt.) Ltd., 131 Mall Plaza Quid-e-Azam Road, Multan Cant. | Dimethoate | 40% EC (w/v) (Appendix-A) | 28.04.2003 | 27-04-2006 | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | Egypt | | II | Insect. |
| 1464 | Al-Asif Enterprises M-34, Al-Rehman Trade Centre, Plot No. Sr. 3/25, Karachi. | Malathion | 95% (w/v) ULV (Appendix-A) | 29.04.2003 | 28-04-2006 | Cotton sucking pests. | China | | III | Insect. |
| 1465 | Argo Chemicals Corporation 277 - Shamsabad, Multan. | FENVALERATE | 20% (w/v) EC (Appendix-A) | 28.04.2003 | 27-04-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1466 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | PROFENOFOS | 40% (w/v) EC (App.-A) & 80% Tech. Min. (w/w) (App.-B) | 06.05.2003 | 05-05-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1467 | Dynamic Agrilinks (Pvt.) Ltd., 148-149 Mall Plaza, Mall Road, Multan Cantt. | FENVALERATE | 20% (w/v) EC (Appendix-A) | 02.05.2003 | 01-05-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre | China | | II | Insect. |
| 1468 | Dynamic Agrilinks (Pvt.) Ltd., 148-149 Mall Plaza, Mall Road, Multan Cantt. | ALPHA-CYPERMETHRIN | 5% EC (w/v) (Appendix-A) | 06.05.2003 | 05-05-2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | U. K. | | II | Insect. |
| 1469 | Dynamic Agrilinks (Pvt.) Ltd., 148-149 Mall Plaza, Mall Road, Multan Cantt. | PROFENOFOS | 40% (w/v) EC (Appendix-A) | 06.05.2003 | 05-05-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & chilli bud mites. | China | | II | Insect. |
| 1470 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | FENVALERATE | 20% (w/v) EC (App.-A) & 92% Tech. (w/w) (App.-B) | 06.05.2003 | 05-05-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1471 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Metolachlor | 50% (w/w) WP (App.-A) & 96% Tech. (w/w) Min. (App.-B) | 06.05.2003 | 05-05-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | | |
| 1472 | Al-Asif Enterprises M-34, Al-Rehman Trade Centre, Plot No. Sr. 3/25, Karachi. | Fenitrothion | 98% (w/v) ULV (Appendix-A) | 02.05.2003 | 01-05-2006 | Sucking Insect of Cotton; Sugarcane and Paddy Borers. | China | | II | Insect. |
| 1473 | Adeel Pesticides Manufacturing Co., 5A/III, 32nd Street, Phase V, Ext. Defence Housing Authority, Karachi. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 02.05.2003 | 01-05-2006 | Cotton pink, spotted & American bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | | II | Insect. |
| 1474 | S. ESSA 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | FENVALERATE | 20% (w/v) EC (Appendix-A) | 02.05.2003 | 01-05-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1475 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | PROFENOFOS | 40% (w/v) EC (Appendix-A) | 07.05.2003 | 06-05-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites,potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1476 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 07.05.2003 | 06-05-2006 | Cotton pink, spotted & American bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1477 | Saver Crop Science 34-Usman Chambers, Waver Lane, Jodia Bazar, Karachi. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 12.05.2003 | 11-05-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | U. K. | | II | Insect. |
| 1478 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | CARTAP HYDROCHLORIDE | 4% (w/w) G (App.-A) & Tech. 98% (w/w) Min. (App.-B) | 14.05.2003 | 13-05-2006 | Rice Stem Borers. | China | | II | Insect. |
| 1479 | Farms & Farmers Agro Links 246-CA / Tipu Shaheed Road, Model Town-A, Bahawalpur. | METHAMIDOPHOS | 60% (w/v) SL (Appendix-A) | 14.05.2003 | 13-05-2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1480 | Pakistan Agro Chemicals (Pvt.) Ltd., 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | CYPERMETHRIN | 10% (w/v) EC (App.-A) & 92% Tech. (w/w) Min. (App.-B & C) | 17.05.2003 | 16-05-2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1481 | Farms & Farmers Agro Links 246-CA / Tipu Shaheed Road, Model Town-A, Bahawalpur. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 14.05.2003 | 13-05-2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1482 | United Technova Cham (Pvt.) Ltd., 702, Mashriq Centre, Block - 14, Gulshan-e-Iqbal, Karachi. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 19.05.2003 | 18-05-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | Korea | | II | Insect. |
| 1483 | Adeel Pesticides Manufacturing Co., 5A/III, 32nd Street, Phase V, Ext. Defence Housing Authority, Karachi. | ALPHA-CYPERMETHRIN | 5% (w/v) EC (Appendix-A) | 19.05.2003 | 18-05-2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | England. | | II | Insect. |
| 1484 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | DELTAMETHRIN | 2.5% (w/v) EC (App.-A) & 98% (w/w) Tech. (App.-B, C) | 24.05.2003 | 23-05-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | U. K. | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1485 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | BUPROFEZIN | 25% (w/w) WP & 95% Tech. Min. (w/w) (App.A, B & C) | 24.05.2003 | 23-05-2006 | Cotton whitefly, jassids, aphids rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1486 | Farms & Farmers Agro Links, 246-CA / Tipu Shaheed Road, Model Town-A, Bahawalpur. | LAMBDA - CYHALOTHRIN | 2.5% EC (w/v) (App. -A) & 95% (w/w) Tech. Min. (App.-B & C) | 24.05.2003 | 23-05-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1487 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | CARBENDAZIM | 50% (w/w) WP (Appendix-A) | 24.05.2003 | 23-05-2006 | Cotton Pink Bollworm 250 ml/acre<br>Cotton Spotted Bollworm 250 ml/acre | China | | III | Fung. |
| 1488 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | FENPROPATHRIN | 20% (w/v) EC (Appendix-A) | 24.05.2003 | 23-05-2006 | Cotton pink, spotted and American bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1489 | Elite Agro Services 149 Mall Plaza Quid-e-Azam Road, Multan Cant. | METHOMYL | 20% (w/v) EC (Appendix-A) | 24.05.2003 | 23-05-2006 | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, Jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphid. | China | | Ib | Insect. |
| 1490 | Elite Agro Services 149 Mall Plaza Quid-e-Azam Road, Multan Cant. | FENVALERATE | 20% (w/v) EC (Appendix-A) | 24.05.2003 | 23-05-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1491 | Dynamic Agrilinks (Pvt.) Ltd. 148-149 Mall Plaza, Mall Road, Multan Cantt. | LAMBDA - CYHALOTHRIN | 2.5% (w/v) EC (Appendix.-A) | 24.05.2003 | 23-05-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1492 | Dynamic Agrilinks (Pvt.) Ltd. 148-149 Mall Plaza, Mall Road, Multan Cantt. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 24.05.2003 | 23-05-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1493 | Ash-Hub Enterprises Shehzad Manzil, Water Works Road, Multan. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 24.05.2003 | 23-05-2006 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1494 | Kinetic International (Pvt.) Ltd., Suit # 4, Muhammad Arcade, L.M.Q. Road, Multan. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 24.05.2003 | 23-05-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1495 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | IMIDACLOPRID | 25% (w/w) WP (App.-A) & 95% (w/w) Tech. Min. (App.-B) | 24.05.2003 | 23-05-2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1496 | Agro Leads International 55/B-1, Behind Khawaja Centre, L.M.Q. Road, Multan. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 25.05.2003 | 24-05-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1497 | Saver Crop Science 34-Usman Chambers, Waver Lane, Jodia Bazar, Karachi. | ALPHA-CYPERMETHRIN | 5% (w/v) EC (Appendix-A) | 24.05.2003 | 23-05-2006 | Cotton aphids, pink & spotted bollworms, heliothis and mites, cabbages diamond back moth. | England. | | II | Insect. |
| 1498 | Valiant Agro Services 2 - Main Road, Jinnah Town, Saqidabad. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 26.05.2003 | 25-05-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1499 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | ENDOSULFAN | 35% (w/v) EC (App.-A) & 94% (w/w) Min. Tech. (App.-B, C) | 26.05.2003 | 25-05-2006 | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | China | | II | Insect. |
| 1500 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | ALPHA-CYPERMETHRIN | 5% (w/v) EC (App.-A) & 90% Tech. (w/w) (App.-B, C) | 05.06.2003 | 04-06-2006 | Cotton pink, spotted bollworms & heliothis, aphids and mites, cabbages diamond back moth. | China | | II | Insect. |
| 1501 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | DIAFENTHIURON | 50% (w/v) SC (App.-A) & 92% (w/w) Min. Tech. (App.-B, C) | 07.06.2003 | 06-06-2006 | Whitefly, jassids, aphids and mites of cotton and Vegetable. | China | | III | Insect. |
| 1502 | Mian Pesticide (Pvt.) Ltd. 605-A, Block-A, Shah Rukn-e-Alam Colony, Multan. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 07.06.2003 | 06-06-2006 | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1503 | Mian Pesticide (Pvt.) Ltd. 605-A, Block-A, Shah Rukn-e-Alam Colony, Multan. | LAMBDA - CYHALOTHRIN | 2.5% (w/v) EC (Appendix.-A) | 07.06.2003 | 06-06-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1504 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial State, Multan Road, Bahawalpur. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 07.06.2003 | 06-06-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1505 | Agro Leads International 55/B-1, Behind Khawaja Centre, L.M.Q. Road, Multan. | BUPROFEZIN | 25% (w/w) WP (Appendix-A) | 07.06.2003 | 06-06-2006 | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1506 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | MONOMEHYPO | 5% (w/w) G (App.-A) & 95% (w/w) Min. Tech. (App.-B, C) | 07.06.2003 | 06-06-2006 | Rice borers, rice leaf roller, and sugarcane borers. | China | | | |
| 1507 | Best Enterprises G - 7, Metro Garden, Manakjee Street, Garden East, Karachi. | IMIDACLOPRID | 25% (w/w) WP (Appendix-A) | 07.06.2003 | 06-06-2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1508 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | TRIFLURALIN | 48% (w/v) EC (App.-A) & 97.165% (w/w) Tech. (App.-B, C) | 07.06.2003 | 06-06-2006 | Annual grasses and broad leaved weeds in cotton, soyabean and vegetables | China | | III | Herb. |
| 1509 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | DELTAMETHRIN | 2.5% (w/v) EC (App.-A) & 95% (w/w) Min. Tech. (App.-B, C) | 10.06.2003 | 09-06-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1510 | ICI Pakistan Ltd. ICI House, 63 - Mozang Road, Lahore. | LAMBDA - CYHALOTHRIN | 2.5% (w/v) EC (Appendix-A) | 07.06.2003 | 06-06-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1511 | Agri Village International 169 - L, Model Town Extension, Lahore. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 07.06.2003 | 06-06-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | UAE | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1512 | Agri Village International 169 - L, Model Town Extension, Lahore. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 07.06.2003 | 06-06-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | UAE | | II | Insect. |
| 1513 | Elite Agro Services 149 Mall Plaza Quid-e-Azam Road, Multan Cant. | LAMBDA - CYHALOTHRIN | 2.5% EC (w/v) (Appendix-A) | 10.06.2003 | 09-06-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | | II | Insect. |
| 1514 | Vital Chemicals Corporation 10-A/2, Gulgashat Colony, Bosan Road, Multan. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 09.06.2003 | 08-06-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1515 | Agro Leads International 55/B-1, Behind Khawaja Centre, L.M.Q. Road, Multan. | PROFENOFOS | 40% (w/v) EC (Appendix-A) | 10.06.2003 | 09-06-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1516 | Zulfiqar Trading Corporation R. No. 6, 7 & 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | LAMBDA - CYHALOTHRIN | 2.5% (w/v) EC (Appendix.-A) | 11.06.2003 | 10-06-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1517 | Vital Chemicals Corporation 10-A/2, Gulgashat Colony, Bosan Road, Multan. | BETA-CYPERMETHRIN | 4.5% (w/v) EC (Appendix-A) | 11.06.2003 | 10-06-2006 | Cotton Pink, Spotted Bollworms and Cauliflower Caterpillar. | China | | II | Insect. |
| 1518 | Vital Chemicals Corporation 10-A/2, Gulgashat Colony, Bosan Road, Multan. | CARTAP HYDROCHLO-RIDE | 4% (w/w) G (App.-A) & 98% Tech. (w/w) (App.-B) | 11.06.2003 | 10-06-2006 | Rice Stem Borers. | China | | II | Insect. |
| 1519 | Dawn Agro Services (Pvt.) Ltd. 2-Main Road, Jinnah Town, Sadiqabad. | TRIAZOPHOS | 40% (w/v) EC (Appendix - A) | 11.06.2003 | 10-06-2006 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1520 | Valiant Agro Services 2 - Main Road, Jinnah Town, Saqidabad. | ESFENVA-LERATE | 5% (w/v) EC (Appendix-A) | 12.06.2003 | 11-06-2006 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1521 | Top Green Chemical (Pvt.) Ltd. 759 - B, Khanewal Road, Multan. | ALPHA-CYPERMETHRIN | 5% (w/v) EC (Appendix-A) | 12.06.2003 | 11-06-2006 | Cotton pink, spotted bollworms & heliothis, aphids and mites, cabbages diamond back moth. | China | | II | Insect. |
| 1522 | Dawn Agro Services (Pvt.) Ltd. 2-Main Road, Jinnah Town, Sadiqabad. | BETA - CYFLUTHRIN | 2.5% (w/v) EC (Appendix-A) | 12.06.2003 | 11-06-2006 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1523 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | BETA - CYFLUTHRIN | 2.5% (w/v) EC (Appendix-A) & 95% (w/w) Tech. (Appendix-B) | 14.06.2003 | 13-06-2006 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids. | China | | II | Insect. |
| 1524 | Top Green Chemical (Pvt.) Ltd. 759 - B, Khanewal Road, Multan. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 14.06.2003 | 13-06-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1525 | Weal-AG Corporation Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | ACEPHATE | 75% (w/w) SP (Appendix-A) | 14.06.2003 | 13-06-2006 | Chenopodium album; fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | III | Insect. |
| 1526 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | ALPHA-CYPERMETHRIN | 5% (w/v) EC (App.-A) & 95% Tech. (w/w) (App.-B, C) | 16.06.2003 | 15-06-2006 | Cotton pink, spotted bollworms & heliothis, aphids and mites, cabbages diamond back moth. | U. K. | | II | Insect. |
| 1527 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 16.06.2003 | 15-06-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | U. K. | | II | Insect. |
| 1528 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 17.06.2003 | 16-06-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1529 | Farms & Farmers Agro Links 246-CA / Tipu Shaheed Road, Model Town-A, Bahawalpur. | DELTAMETHRIN | 2.5% (w/v) EC (App.-A) & 98% Tech. (w/w) Min. (App.-B, C) | 17.06.2003 | 16-06-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1530 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | PROFENOFOS | 40% EC (w/v) (App.-A) & 84% (w/w) Tech. Min. (App.-B, C) | 18.06.2003 | 17-06-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1531 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 18.06.2003 | 17-06-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1532 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | LAMBDA - CYHALOTHRIN | 2.5% (w/v) EC (App.-A) & 95% Tech. (w/w) Min. (App.-B, C) | 19.06.2003 | 18-06-2006 | Cotton bollworms, jassids, whitefly and thrips, gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | China | | II | Insect. |
| 1533 | Top Green Chemical (Pvt.) Ltd. 759 - B, Khanewal Road, Multan. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 19.06.2003 | 18-06-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | UAE | | II | Insect. |
| 1534 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | FENVALERATE | 20% (w/v) EC (App.-A) & 90% Tech. (w/w) (App.-B, C) | 25.06.2003 | 24-06-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1535 | Universal Agro Chemicals (Pvt.) Ltd. S - 94, S.I.T.E. Karachi. | MANCOZEB | 80% (w/w) WP (Appendix-A) | 25.06.2003 | 24-06-2006 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 1536 | Saver Crop Science 34-Usman Chambers, Waver Lane, Jodia Bazar, Karachi. | BIFENTHRIN | 10% EC (w/v) (Appendix-A) | 25.06.2003 | 24-06-2006 | Cotton pink, spotted, Heliothis bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 1537 | Saver Crop Science 34-Usman Chambers, Waver Lane, Jodia Bazar, Karachi. | PROFENOFOS | 40% EC (w/v) (Appendix-A) | 25.06.2003 | 24-06-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | China | | II | Insect. |
| 1538 | Farmers Equity (Pvt.) Ltd. 1st Floor, Mall Plaza, Mall Road, Multan Cantt. | CHLORPYRIFOS | 40% EC (w/v) (Appendix-A) | 25.06.2003 | 24-06-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | Malaysia | | II | Insect. |
| 1539 | Farms & Farmers Agro Links 246-CA / Tipu Shaheed Road, Model Town-A, Bahawalpur. | FENVALERATE | 20% (w/v) EC (Appendix-A) | 25.06.2003 | 24-06-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1540 | Dawn Agro Services (Pvt.) Ltd. 2-Main Road, Jinnah Town, Sadiqabad. | BETA - CYFLUTHRIN | 2.5% (w/v) EC (Appendix-A) | 25.06.2003 | 24-06-2006 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids. | China | | II | Insect. |
| 1541 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | CYPERMETHRIN | 10% (w/v) EC (App.-A) & 90% (w/w) Tech. Min. (App.-B, C) | 25.06.2003 | 24-06-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1542 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | BETA - CYFLUTHRIN | 2.5% (w/v) EC (Appendix-A) | 25.06.2003 | 24-06-2006 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids. | China | | II | Insect. |
| 1543 | Wel Agro Wise (Pvt.) Ltd. 47/A, Industrial Estate, Multan. | PROFENOFOS | 40% (w/v) EC (Appendix-A) | 25.06.2003 | 24-06-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | UAE | | II | Insect. |
| 1544 | Mehboob Agro Chemicals 17 Yousf Zai Market, Phase 3, Hayatabad, Peshawar. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 01.07.2003 | 30-06-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | UAE | | II | Insect. |
| 1545 | Mehboob Agro Chemicals 17 Yousf Zai Market, Phase 3, Hayatabad, Peshawar. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 01.07.2003 | 30-06-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | UAE | | II | Insect. |
| 1546 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | ACETOCHLOR | 50% (w/v) EC (Appendix-A) | 01.07.2003 | 30-06-2006 | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | China | | III | Herb. |
| 1547 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | BROMOXYNIL + MCPA | 200 / 200 EC (Appendix- A) | 01.07.2003 | 30-06-2006 | Chenopodium album; Fumaria spp; Asphodelus tenuifolius; Euphorbia beliossopia; Medicago spp; Convolvulus arvensis; Rumex spp. in wheat. | China | | II +III | Herb. |
| 1548 | Bayer CropScience (Private) Limited Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900. | DELTAMETHRIN | 2.5% (w/v) EC (App.-A) & 98% (w/w) Tech. Min. (App.-B, C) | 02.07.2003 | 01-07-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | France. | | II | Insect. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1549 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | METHOMYL | 90% (w/w) SP (Appendix-A) | 04.07.2003 | 03-07-2006 | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, Jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphid. | China | | | Ib |
| 1550 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | IMIDACLOPRID | 25% (w/w) WP (App.-A) & 90% (w/w) Tech. (App.-B, C) | 09.07.2003 | 06-07-2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |
| 1551 | Zulfiqar Trading Corporation R. No. 6, 7 & 8, 6th Floor, Al-Yousaf Chambers, Sharah-e-Liquat, New Challi, Karachi. | METHAMIDOPHOS | 60% (w/v) SL (Appendix-A) | 10.07.2003 | 09-07-2006 | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | China | | Ib | Insect. |
| 1552 | Agro Leads International 55/B-1, Behind Khawaja Centre, L.M.Q. Road, Multan. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 11.07.2003 | 10-07-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1553 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 10.07.2003 | 09-07-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | UAE | | II | Insect. |
| 1554 | Quality International Traders (Pvt.) Ltd. 9 - Light Industrial Area, Model Town, Bahawalpur. | CARBOFURAN | 3% (w/w) G (App.-A) & 97% Tech. (w/w) (App.-B, C) | 10.07.2003 | 09-07-2006 | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 1555 | Agro Leads International 55/B-1, Behind Khawaja Centre, L.M.Q. Road, Multan. | TRIAZOPHOS | 40% (w/v) EC (Appendix-A) | 15.07.2003 | 14-07-2006 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1556 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | PENDIMETHALIN | 33% (w/v) EC (App.-A) & 90.5% Tech. (w/w) (App.-B) | 15.07.2003 | 14-07-2006 | Pre and post emergence weeds in wheat and maize and cotton broad leaf weeds and grasses except cyperus spp, cyanodan dactylon and solamun nigra. | China | | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1557 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 19.07.2003 | 18-07-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1558 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | BIFENTHRIN | 10% (w/v) EC (App.-A) & 96% (w/w) Tech. Min. (App.-B, C) | 21.07.2003 | 20-07-2006 | Cotton pink, spotted, Heliothis bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 1559 | Welcon Chemical (Pvt.) Ltd Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | THIODICARB | 80% (w/w) DF (Appendix-A) | 21.07.2003 | 20-07-2006 | Cotton pink and spotted bollworms; eggs and larvae of Heliothis and army worm on cotton and burseem; cabbage worm, and tabacco budworm and cotton jassids, thrips and whitefly. | China | | | |
| 1560 | Dynamic Agrilinks (Pvt.) Ltd. 148-149 Mall Plaza, Mall Road, Multan Cantt. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 21.07.2003 | 20-07-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1561 | Farming Sense (Pvt.) Ltd. 1st Floor, Jalil Centre, Abdali Road, Multan. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 21.07.2003 | 20-07-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1562 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | METRIBUZIN | 70% (w/w) WP (Appendix- A) | 21.07.2003 | 20-07-2006 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | | III | Herb. |
| 1563 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | BIFENTHRIN | 10% (w/v) EC (Appendix-A) | 30.07.2003 | 29-07-2006 | Cotton pink, spotted, Heliothis bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 1564 | Gul Yousaf & Company P.690 Dahor Str. Near Hassan Street, Khyban Colony # 2, Faisalabal. | ISOPROTURON | 50% (w/w) WP (Appendix - A) | 30.07.2003 | 29-07-2006 | Weeds in Wheat. | China | | III | Herb. |
| 1565 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | ISOPROTURON | 50% (w/w) WP (Appendix-A) | 31.07.2003 | 30-07-2006 | Weeds in Wheat. | China | | III | Herb. |

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| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1566 | Wel Agro Wise (Pvt.) Ltd. 47/A Industrial Estate, Multan. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 31.07.2003 | 30-07-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1567 | Wel Agro Wise (Pvt.) Ltd. 47/A Industrial Estate, Multan. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 31.07.2003 | 30-07-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | China | | II | Insect. |
| 1568 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | BETA - CYFLUTHRIN | 2.5% (w/v) EC (Appendix-A) | 02.08.2003 | 01-08-2006 | Cotton Pink, Spotted and Heliothis bollworms, Jassids, Whitefly, Thrips, Aphids. | China | | II | Insect. |
| 1569 | Farms & Farmers Agro Links 246-CA / Tipu Shaheed Road, Model Town-A, Bahawalpur. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 05.08.2003 | 04-08-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1570 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | CARTAP HYDROCHLORIDE | 4% (w/w) G (App.-A) & 98% (w/w) Tech. (App.-B, C) | 05.08.2003 | 04-08-2006 | Rice Stem Borers. | China | | II | Insect. |
| 1571 | Best Enterprises G - 7, Metro Garden, Manakjee Street, Garden East, Karachi. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 04.08.2003 | 03-08-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1572 | Mian Pesticide (Pvt.) Ltd. 605-A, Block-A, Shah Rukn-e-Alam Colony, Multan. | BUPROFEZIN | 25% (w/w) WP (Appendix-A) | 07.08.2003 | 06-08-2006 | Cotton whitefly, jassids, aphids rice brown hoppers and green hoppers. | China | | III | Insect. |
| 1573 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony, Shershah Road, Multan Cantt. | CARBOFURAN | 3% (w/w) G (App.-A) & 98% Tech. Min. (w/w) (App.-B, C) | 16.08.2003 | 15-08-2006 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 1574 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony, Shershah Road, Multan Cantt. | TRIAZOPHOS | 40% (w/v) EC (Appendix - A) | 16.08.2003 | 15-08-2006 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1575 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony, Shershah Road, Multan Cantt. | ESFENVALERATE | 5% (w/v) EC (Appendix-A) | 16.08.2003 | 15-08-2006 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1576 | Vital Chemicals Corporation 10-A/2, Gulgashat Colony, Bosan Road, Multan. | TRIAZOPHOS | 40% (w/v) EC (Appendix-A) | 18.08.2003 | 17-08-2006 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1577 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | ISOPROTURON | 50% (w/w) WP (Appendix-A) | 20.08.2003 | 19-08-2006 | Weeds in Wheat. | UAE | | III | Herb. |
| 1578 | Agricides (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | BIFENTHRIN | 10% EC (w/v) (Appendix-A) | 20.08.2003 | 19-08-2006 | Cotton pink, spotted, Heliothis bollworms, jassids, whitefly, and mites, citrus leaf miner, mango hoppers and apple spider mites. | China | | | Insect. |
| 1579 | Vital Chemicals Corporation 10-A/2, Gulgashat Colony, Bosan Road, Multan. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 21.08.2003 | 20-08-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | China | | II | Insect. |
| 1580 | NH Pesticides Group International Bungalow # 106/I, 26th Street, DHA Phase-6, Karachi. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 21.08.2003 | 20-08-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | UAE | | II | Insect. |
| 1581 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | CARBOFURAN | 3% (w/w) G & Tech. 75% DB & 98% Min. (w/w) | 21.08.2003 | 20-08-2006 | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | China | | Ib | Insect. |
| 1582 | NH Pesticides Group International Bungalow # 106/I, 26th Street, DHA Phase-6, Karachi. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 21.08.2003 | 20-08-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | UAE | | II | Insect. |
| 1583 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony, Shershah Road, Multan Cantt. | DELTAMETHRIN | 2.5% (w/v) EC (Appendix-A) | 22.08.2003 | 21-08-2006 | Cotton Pink, Spotted and Heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | UAE | | II | Insect. |
| 1584 | NH Pesticides Group International Bungalow # 106/I, 26th Street, DHA Phase-6, Karachi. | ALPHA-CYPERMETHRIN | 5% (w/v) EC (Appendix-A) | 22.08.2003 | 21-08-2006 | Cotton pink, spotted bollworms, heliothis, aphids, mites and cabbage diamond back moth. | UAE | | II | Insect. |
| 1585 | NH Pesticides Group International Bungalow # 106/I, 26th Street, DHA Phase-6, Karachi. | FENVALERATE | 20% (w/v) EC (Appendix-A) | 02.09.2003 | 01-09-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | UAE | | II | Insect. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1586 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony, Shershah Road, Multan Cantt. | CYPERMETHRIN | 10% (w/v) EC (Appendix-A) | 02.09.2003 | 01-09-2006 | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | UAE | | II | Insect. |
| 1587 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony, Shershah Road, Multan Cantt. | PROFENOFOS | 50% (w/v) EC (Appendix-A) | 03.09.2003 | 02-09-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | UAE | | II | Insect. |
| 1588 | NH Pesticides Group International Bungalow # 106/I, 26th Street, DHA Phase-6, Karachi. | PROFENOFOS | 50% (w/v) EC (Appendix-A) | 03.09.2003 | 02-09-2006 | Cotton, pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | UAE | | II | Insect. |
| 1589 | NH Pesticides Group International Bungalow # 106/I, 26th Street, DHA Phase-6, Karachi. | CHLORPYRIFOS | 40% (w/v) EC (Appendix-A) | 03.09.2003 | 02-09-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | UAE | | II | Insect. |
| 1590 | Vital Chemicals Corporation 10-A/2, Gulgashat Colony, Bosan Road, Multan. | ESFENVALERATE | 5% (w/v) EC (Appendix-A) | 03.09.2003 | 02-09-2006 | Cotton Jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1591 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | METRIBUZIN | 70% (w/w) WP (App.- A) & 98% Tech. (w/w) (App.- B, C) | 03.09.2003 | 02-09-2006 | Potato broad leaf weeds & grasses @ 250 g/ acre., Wheat broad leaf weeds & grasses @ 80 - 100 g/ acre. | China | | III | Herb. |
| 1592 | S. ESSA 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | MANCOZEB | 80% (w/w) WP (Appendix-A) | 03.09.2003 | 02-09-2006 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 1593 | Kisan Supplies Services Ltd. 645-C, Faisal Town, Lahore. | CHLORPYRIFOS | 40% (w/v) EC (App-A) & 94% Tech. (w/w) (App-B) | 03.09.2003 | 02-09-2006 | Cotton pink, spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids, Sugarcane borers and bugs, maize borer, orchard codling moth and vegetable beetles. | China | | II | Insect. |
| 1594 | Farmers Equity (Pvt.) Ltd. 1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Metalaxyl + Mancozeb | 72% (w/w) WP (Appendix-A) | 03.09.2003 | 02-09-2006 | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | China | | III | Herb. |
| 1595 | Kisan Supplies Services Ltd. 645-C, Faisal Town, Lahore. | CARBENDAZIM | 50% (w/w) WP (Appendix-A) | 17.09.2003 | 16-09-2006 | Grape, Apple, Peas Powdery Mildew and sugarbeet Leaf spots. | China | | III | Fung. |

## List of Companies Registration Form-16

| Sl. No. | Name of Applicant | Product | Formulation | Registed Date | Receiving Date | Uses | Country | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 1596 | Kisan Supplies Services Ltd. 645-C, Faisal Town, Lahore. | MANCOZEB | 80% (w/w) WP (Appendix-A) | 17.09.2003 | 16-09-2006 | Potato, Early blight & Late blight, 600 gm/acre. Potato, Downy mildew, 600 gm/acre. Vegetable, Downy mildew, 800 gm/acre. Cucurbits, Downy mildew, 800 gm/acre. | China | | III | Fung. |
| 1597 | Chem-Agro International (Pvt.) Ltd. House No. 76, Street # 24, Sector F-10/1, Islamabad. | FENPROPATHRIN | 20% (w/v) EC (Appendix-A) | 17.09.2003 | 16-09-2006 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1598 | NH Pesticides Group International Bungalow # 106/I, 26th Street, DHA Phase-6, Karachi. | FENPROPATHRIN | 20% (w/v) EC (Appendix-A) | 17.09.2003 | 16-09-2006 | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | China | | II | Insect. |
| 1599 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | THIOPHANATE METHYL | 70% (w/w) WP (Appendix - A) | 07.10.2003 | 06-10-2006 | Seed dressing and treatment of rice blast and powdery mildew of grapes. | China | | III | Fung. |
| 1600 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | DICOFOL | 18.5% (w/v) EC (Appendix-A) | 07.10.2003 | 06-10-2006 | Mites of cotton, sugarcane, apples and almonds. | China | | III | Acar. |
| 1601 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | BENOMYL | 50% WP (w/w) (Appendix-A) | 07.10.2003 | 06-10-2006 | Seed dressing fungicide & melon powdery mildew. | China | | III | Fung. |
| 1602 | Pace Pesticides (Pvt.) Ltd. 5-8, 1st Floor, Trust Plaza, Opp. Telephone Exchange, L.M.Q. Road, Multan. | TRIAZOPHOS | 40% (w/v) EC (Appendix-A) | 07.10.2003 | 06-10-2006 | Rice stem borers and leaf rollers, cotton pink, spotted and Heliothis bollworm, Army worm, thrips, whitefly, aphids, jassids, maize shottfly and borers. | China | | Ib | Insect. |
| 1603 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | CARBENDAZIM | 50% (w/w) WP (App.-A) & 98% Tech. (w/w) Min. (App.-B, C) | 07.10.2003 | 06-10-2006 | Powdery mildew on Grape, Apple, Peas and sugarbeet Leaf spots. | China | | III | Fung. |
| 1604 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | IMIDACLOPRID | 25% (w/w) WP (Appendix - A) | 07.10.2003 | 06-10-2006 | Cotton Jassids, whitefly and thrips, rice plant hoppers and apple aphids. | China | | II | Insect. |

## 15.7 Company Registration Under Form 17

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 1 | Farmers Equity (Pvt.) Ltd.<br>1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Multiphos 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 28-4-1993 | 22-4-93 | | | |
| 2 | Syngenta Pakistan Limited<br>S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. | Polo 500 SC | Diafenthiuron | Whitefly, jassids, aphids and mites of cotton and Vegetable. | I | 16-5-1993 | 12/5/1993 | | III | Insect. |
| 3 | Novartis Pak. Pvt. Ltd. | Deltanet 400 EC | Furathiocarb | Aphids Cotton, grap and deciduovs fruits vegetable cotton insect pests complex. | I | 16-5-1993 | 12/5/1993 | | Ib | Insect. |
| 4 | Peoples Farm Services Pvt Ltd., LHR | Sannong 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 24-5-1993 | 30-3-93 | | | |
| 5 | People Farm Services (Pvt.) Ltd.<br>9-Ahmad Mansion, the Mall Road, Lahore. | Tianjin 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 24-5-1993 | 15-4-93 | | Ib | Insect. |
| 7 | Acmes International, Multan | Shiyao 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 25-5-1993 | 25-4-93 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 8 | Granulars Pvt., Ltd., Karachi | Pandaphos 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 30-5-1993 | 10/5/1993 | | | |
| 9 | Pakistan Trading Enter., ltd.,Karachi | Jiangmen 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 31-5-1993 | 29-5-93 | | | |
| 10 | Agricides (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Galarich 50 SC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 13-6-1993 | 24-5-93 | | | |
| 11 | Mehran Agro Chem., Pvt., LTd., Kar. | Nuratron 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 24-6-1993 | 26-5-93 | | | |
| 12 | Unicorn Agrochemical, Karachi | Dragon & Lion 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 24-6-1993 | 30-5-93 | | | |
| 13 | Mak Agrochemical Ltd., Lahore | New Lake 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre | I | 24-10-1993 | 14-6-93 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | | | | | | |
| 14 | Rhone Poulenc Ltd., Karachi | Dravin 50 EC | Butacarboxim | Cotton whiteflies, aphids vegetables whitfly and Citrus Scale thripss and aphids. | I | 5/7/1993 | 25-5-93 | | Ib | Insect. |
| 15 | Allied Agrochemical, Karachi | Patrolin 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 6/7/1993 | 29-6-93 | | | |
| 16 | Allied Agrochemical, Karachi | Card Bush 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 6/7/1993 | 29-6-93 | | II | Insect. |
| 17 | Brothers Trading Corp., Karachi | Feng Ye 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 12/7/1993 | 3/5/1993 | | | |
| 19 | Nafees (Pvt.) Ltd.<br>18 - H, Vehari 61100. | Spyrto 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 14-7-1993 | 26-6-93 | | II | Insect. |
| 20 | AG Services & Supplies, Karachi | Contra Insect 500/50 EC | Chlorpyrifos + Cypermethrin | Cotton Pests complex. | I | 27-7-1993 | 9/5/1993 | | II | Insect. |
| 21 | United Technova Chem. (Pvt.) Ltd.<br>702, Mashriq Centre, Block-14,<br>Gulshan-e-Iqbal, Karachi | Tianshiphos 60 SL (w/v) (Appendix-A) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 25.04.2003 | 27.07.2005 | Renewal / Revised | | |
| 22 | Novartis Pak. Pvt. Ltd. | Basudin 600 EW | Diazinon | Vegetable caterpillars, aphids, bugs, beetles and orchards codling months, leafrollers, scale insect mealy bugs. | I | 15-8-1993 | 19-7-93 | | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 23 | R.B. Avari Enterprises (Pvt.) Ltd. Sasi Arcade, Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Cyperkill 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 20-8-1993 | 15-7-93 | | II | Insect. |
| 24 | Green Farm Sersvices Ltd., Karachi | Lianzi 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 7/8/1993 | 23-6-93 | | II | Insect. |
| 25 | Jaffar Brothers Pvt., Ltd., Karachi | Granstar 75 DF | Tribenuron Methyl | Broad leaf weeds in wheat, barley, and oacts. | F | 15-9-1993 | 1/9/1993 | | III | Fung. |
| 27 | United Technova Cham (Pvt.) Ltd. 702, Mashriq Center, Block -14, Gulshan - e - Iqbal, Karachi. | Swat 75% WP (w/w) (Appendix-A) | Isoproturon | Weeds in Wheat. | H | 12.04.2003 | 25.09.2005 | Renewal / Revised | | |
| 29 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Hektionex 36% EC (w/v) (Appendix-A) | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 02.12.2002 | 29.10.2005 | Renewal | II | Insect. |
| 31 | United Technova Chem., Karachi | Unichlor 60 EC | Butachlor | Weeds in rice. | H | 6/11/2003 | 27-8-93 | | III | Herb. |
| 32 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Dathrin 20% EC (w/v) (App.-A) & 90% Tech. (App.-B) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 29.01.2003 | 03.12.2005 | Renewal / Revised | | |
| 34 | Bayer CropScience (Pvt.) Ltd. Plot NO. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Aliette 80 WP (Appendix-A) | Fosetyl Aluminium | Downy mildew of Cucurbits, Vegetables and Brassica, Citrus foot & root rot, Annular tree trunk base rot of orchards / Fruit trees, Phytophthora sp. of Apples, Strawberries and tomatos. | F | 22.02.2003 | 02.01.2006 | Renewal / Revised | | |
| 35 | Bayer CropScience (Pvt.) Ltd. Plot NO. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Panther 500/50 SC (Appendix-A) | Isoproturon + Diflufenican | Weeds in wheat as early post-emergence and pre-emergence. | | 22.02.2003 | 02.01.2006 | Renewal / Revised | III | Herb. |
| 36 | Hilton Pharma Pvt., Ltd., Karachi | Top Cop with sulfur 50 + 8.4% WP (Appendix-A) | Elemental Sulpher and Tri basic Copper sulphate. | Early and cate lbights of potatoes & tomatoes, graps, and Mango anthracnose. | F | 4/1/1994 | 21-4-93 | | NONE | Fung. |
| 37 | ICI Agrochemicals, Karachi | Cymbush 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 6/1/1994 | 29-6-93 | | II | Insect. |
| 38 | Agri Marketing Ltd., Karachi | Kingfeng 10 EC | Cypermethrin + Fenvalerate | Cotton Pink bollworm 250 ml / acre<br>Cotton spotted bollworm 250 ml / acre | I | 19.01.2000 | 03.01.2003 | | II | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 39 | Syngenta Pakistan Limited<br>S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. | Trigard 75 WP (Appendix-A) | Cyromazine | Cucumber leaf miner. | I | 25.01.2003 | 10.01.2006 | Renewal | III | Insect. |
| 40 | Data Universal Ltd., Karachi | Jiaanlin 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 16-1-94 | 27-8-93 | | | |
| 41 | Shell Pakistan Ltd., Karachi | Acrobat MZ 75/667 g/kg WP | Dimethomorph + Mancozeb | Potatoes - late blight, mildews, Alternaria; Vines - mildews; Tomatoes - mildews and Cucumbers - mildews. | F | 12/1/1994 | 7-1-2-93 | | | |
| 42 | Brothers Trading Corp., Karachi | Feng-Je 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 31-1-94 | 6/5/1993 | | | |
| 44 | Khansaab Agrochemical, Karachi | Thiolix 35 EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 21-2-94 | 18-4-93 | | | |
| 46 | National Chem, Karachi | Jianpai 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 21-2-94 | 7/11/1993 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 48 | Farmers Equity (Pvt.) Ltd.<br>1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Akocyper 10 EC (w/v) (Appendix-A) | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 18.06.2003 | 20.02.2006 | Renewal / Revised | II | Insect. |
| 49 | Farmers Equity (Pvt.) Ltd.<br>1st Floor, Mall Plaza, Mall Road, Multan Cantt. | Drexel 35 EC (w/v) (Appendix-A) | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 18.06.2003 | 20.02.2006 | Renewal / Revised | | |
| 51 | Morgan Chemicals, Karachi | Shamethrin 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 6/3/1994 | 26-1-94 | | | |
| 52 | Pak Pesticides Pvt., Ltd., Lahore | Farmachlor 60 EC | Butachlor | Weeds in rice. | H | 6/3/1994 | 19-2-94 | | III | Herb. |
| 53 | Mehran Agro Chemical Ltd., Karachi | Atafen 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 7/3/1994 | 26-5-93 | | | |
| 55 | R.B. Avari Enterprises (Pvt.) Ltd.<br>Sasi Arcade, Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Themanitor 60% SL (w/v) (Appendix-A) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 10.04.2003 | 30.03.2006 | Renewal | | |
| 57 | Pakistan Agro Chemical Ltd., Karachi | Nanco 70 WP | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre<br>Potato, Downy mildew, 600 gm/acre<br>Vegetable, Downy mildew, 800 gm/acre<br>Cucurbits, Downy mildew, 800 gm/acre | | 16-4-94 | 21-3-94 | | | |
| 58 | Pakistan Agro Chemicals (Pvt.) Ltd.<br>38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Sundah 50 WSC (w/w) (Appendix-A) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 11.04.2003 | 15.04.2006 | Renewal | | |
| 59 | Farmtech Pvt., Ltd., Karachi | Grand 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 16-4-94 | 16-2-94 | | II | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 60 | Jaffar Brothers Pvt., Ltd., Karachi | Lannate 40 SP (w/w) (Appendix-A) | Methomyl | Cotton Pink, spotted and Heliothis bollworms, Army worm, thrips, whitefly, aphids, jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphids. | I | 22.05.2003 | 16.04.2006 | Renewal | | |
| 61 | Japak International Pvt., Ltd., Lahore | Methaphos 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 23-4-94 | 9/2/1994 | | | |
| 63 | FMC United (Private) Limited<br>61-A Main Gulberg, Lahore. | Fury 18.1% EC (App.-A)<br>(ii) Min. 88% (w/w) Tech. (Appendix-B) | Zeta-Cypermethrin | Cotton Armyworm, Heliothis sp; Pink Bollworm, Spotted Bollworms, Lettuce Cutworms and budworms, Cotton whitefly. | I | 19.05.2003 | 22.04.2006 | Renewal | Ib | Insect. |
| 64 | Pak Pesticides (Pvt.) Ltd.<br>Suit No. 12, Irfan Centre, 34-Civic Centre,<br>New Garden Town, Lahore. | Charge 50% EC (Appendix-A) | Dichlorovos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>**Mango, Hoppers, 300 ml/100 lit water**<br>**Mango, Mealybugs, 300 ml/100 lit water**<br>Citrus, Psyilla, 300 ml/100 lit water<br>Citrus, Butterfly, 300 ml/100 lit water<br>Citrus, Blackfly, 300 ml/100 lit water<br>Tobbaco, Aphids, 300 ml/acre<br>Okra, Jassids, 300 ml/acre<br>Okra, Aphids, 300 ml/acre<br>Orchards, Mealybugs, 300 ml/100 lit water Orchards, Scales, 300 ml/100 lit water Peaches, Aphids, 300 ml/100 lit water | I | 22.05.2003 | 23.04.2006 | Renewal | Ib | Insect. |
| 65 | Edgro Pvt., Ltd., Karachi | Galaban 40 EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | | 24-4-94 | 4/12/1993 | | II | Insect. |
| 66 | Farmtech Pvt., Ltd., Karachi | Goldstar 40 EC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre | I | 27-4-94 | 19-1-94 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | | | |
| 68 | ABC Enterprises, Karachi | Chaser 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 8/5/1994 | 17-3-94 | | | |
| 69 | International Enterprises<br>Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Kingkill-D 500/50 EC | Chlorpyrifos + Cypermethrin | Cotton Pests complex. | I | 9/5/1994 | 28-11-93 | | II | Insect. |
| 70 | Agricide Pvt., Ltd., Karachi | Galathroid 550 EC | Cypermethrin + Methamidophos | Cotton Pest Comlex, vegetable jassids, army worm, whiteflies diamond broworm re pumkin, beat orcahred cod. Moth, lemon butterfly H. caterpillar, fruitfly, aphids, jassids. | I | 9/5/1994 | 28-11-93 | | II | Insect. |
| 72 | Bayer DAS (Private) Limited<br>18/III Flench Street, Off Bleak House Road,<br>Karachi. | Sonalan 36.1% EC | Ethafluralin | Annual grasses and broad leaf weeds in sunflower, beans, peas, soyabean and cotton. | H | 14-5-94 | 24-3-94 | | III | Herb. |
| 73 | Agricide Pvt., Ltd., Karachi | Kingchamp | Endosulfan + Methamidophos | Cotton Pests complex, vegetalbe jassids, army worms, whiteflies, diamond back moth, red pumpkin beetle, orchard codling moth, lemon butterfly, hairy caterpilar, fruitfly, aphids and jassids. | I | 18-5-94 | 11/12/1993 | | II +Ib | Insect. |
| 74 | International Enterprises, Karachi | Galafos 480/180 EC | Chlorpyriphos + Dimethoate | Cotton vegetable, jassids, army worms, whiteflies, | I | 17-5-94 | 29-11-93 | | II | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 75 | Pakistan Agro Chemical Ltd., Karachi | Hunter 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 30-5-94 | 23-2-94 | | II | Insect. |
| 77 | Formtech Pvt., Ltd., Karachi | Digitol 20 EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 2/6/1994 | 30-2-94 | | | |
| 78 | Novartis Pvt., Ltd, Karachi | Plenum 25 WP | Pymetrozine | Whitefly and aphids of vegetalbes and field crop. | I | 7/6/1994 | 17-4-94 | | III | Insect. |
| 79 | International Enterprises, Karachi | Kingsper 300/50 EC | Endosulfan + Cypermethrin | Cotton Pests complex, vegetalbe jassids, army worms, whiteflies, diamond back moth, red pumpkin beetle, orchard codling moth, lemon butterfly, hairy caterpilar, fruitfly, aphids and jassids. | I | 9/6/1994 | 2/12/1993 | | II | Insect. |
| 80 | United Technova Cham, Karachi | Redentin .0075% | Chlorophacinon | Rodent control only. | Rod. | 12/6/1994 | 28-2-94 | | Ia | Rod. |
| 81 | Agricide Pvt., Ltd., Karachi | Kingaddix 30/20 EC | Endosulfan + Dimethoate | Cotton jassids, whitefies, thrips bollworms. | I | 14-6-94 | 2/12/1993 | | | |
| 82 | Mehran Agro Chemical Ltd., Karachi | Ateflox 48% EC | Trifluralin | Annual grasses and broad leaves weeds in cotton and potato. | H | 23-6-94 | 6/6/1993 | | | |
| 83 | Pan Pacific (Pvt.) Ltd. 12 - M Block VI, P.E.C.H.S., Karachi. | Trend 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | I | 28-6-94 | 12/5/1994 | | | |
| 84 | Mak Agrochemical Pvt., Ltd., Lahore | Xinyi 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | I | 19-7-94 | 3/7/1994 | | | |
| 85 | International Enterprises, Karachi | Edcozeb 80 WP | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre Potato, Downy mildew, 600 gm/acre Vegetable, Downy mildew, 800 gm/acre Cucurbits, Downy mildew, 800 gm/acre | | 20-7-94 | 16-12-93 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 86 | International Enterprises, Karachi | Edvistin 80 WP | Carbendazim | Grape, Apple, Peas Powdery Mildew and sugarbeet Leaf spots. | F | 20-7-94 | Dec-93 | | III | Fung. |
| 88 | Pakistan Agro Chemical Ltd., Karachi | Shawthene 75 SP | Acephate | Cotton Pink, Spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids. | | 26-7-94 | 11/4/1994 | | III | Insect. |
| 89 | Marvi Agrochem Pvt., Ltd., Karachi | Fezdion 35 EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 28-7-94 | 14-6-94 | | | |
| 90 | Agricides (Pvt.) Ltd.<br>Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Polyram DF70% w/w | Matiram | Early blight of tomato & potato, downy and powdery mildew of cucurbits only. | | 10.07.2003 | 31.07.2006 | Renewal | | |
| 91 | ICI Pak. Ltd., Karchi | Anvil 5 SC | Hexaconazole | Melon powdery mildew, cabbage leaf sopt and white rust, garlie rust & pear rust. | F | 28-7-94 | 11/11/1993 | | III | Fung. |
| 93 | Mak Agro Checmials (Pvt.) LTd.<br>Suite #805, 8th Floor, Land Mark Plaza,<br>5/6 Jail Road, Lahore. | Sanma 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 2/8/1994 | 31-7-94 | | II | Insect. |
| 94 | Mak Agro Checmials (Pvt.) LTd.<br>Suite #805, 8th Floor, Land Mark Plaza,<br>5/6 Jail Road, Lahore. | Miyao 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 2/8/1994 | 31-7-94 | | | |
| 95 | Data Universal Ltd., Karachi | Yinhai 85 WP | Carbaryl | Cotton spotted bollworms, jassids, thrips tobacco bullworms and grape mealy bugs. | I | 2/8/1994 | 28-3-94 | | II | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 96 | Data Universal Ltd., Karachi | Tianzi 70 WP | Thiophanate Methyl | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | F | 2/8/1994 | 28-3-94 | | III | Fung. |
| 97 | International Enterprises, Karachi | Kinggo 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 8/8/1994 | 23-12-93 | | | |
| 98 | Acmes International, Multan | Shuianliulin 40 EC | Isocarbophos | Cotton Heliothis spp., red spider mites, rice stem borers and thrips and citrus red mite, rust mite and leaf miner. | I | 8/8/1994 | 30-6-94 | | | |
| 99 | R. B. Avari Enterprises (Pvt.) Ltd., Karachi. | Saprofon 80 SP | Trichlorphone | Fruitfly of mango and melon. | I | 22-8-94 | 19-12-94 | | II | Insect. |
| 100 | R. B. Avari Enterprises (Pvt.) Ltd., Karachi. | Saphate 75 WP | Acephate | Cotton Pink, Spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids. | | 22-8-94 | 19-12-93 | | | |
| 101 | R. B. Avari Enterprises (Pvt.) Ltd., Karachi. | Sathomyl 20 EC | Methomyl | Cotton Pink, spotted and Heliothis bollworms, Army worm, thrips, whitefly, aphids, jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphids. | I | 22-8-94 | 19-2-94 | | Ib | Insect. |
| 103 | Pakistan Agro Chemical Ltd., Karachi | Bromicide MA 200/200 EC | Bromoxynil + MCPA | Wheeds in wheat. | H | 5/9/1994 | 14-594 | | II +III | Herb. |
| 104 | Pakistan Agro Chemical Ltd., Karachi | Bromo MA 200/328 EC | Bromoxynil + MCPA | Wheeds in wheat. | H | 22-9-94 | 23-8-94 | | II +III | Herb. |
| 105 | Data Universal Ltd., Karachi | Rotap 4 G (98.5% tech) | Cartap hydrochloride | Rice Stem Borers. | I | 26-9-94 | 11/1/1994 | | II | Insect. |
| 106 | Khansaab Agrochemical, Karachi | Jinwa 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 6/10/1994 | 2/4/1994 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| 107 | Universal Agro Chem., Pvt., Ltd., Kar. | Romethoate 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 17-10-94 | 22-3-94 | | II | Insect. |
| 108 | Marvi Agrochem Pvt., Ltd., Karachi | Bichlor 60 EC | Butachlor | Weeds in rice. | H | 23-10-94 | 19-4-94 | | III | Herb. |
| 109 | Marvi Agrochem Pvt., Ltd., Karachi | Taophos 25 EC | Quinalphos | Broers of Sugarcane, mites of apples, aphids of tobacco, cotton pink, spotted and Heliothis bollworms, Army worms and thrips, whitefly, aphids, jassids, stem borers of paddy fruitfly of mango and melon. | I | 23-10-94 | 28-8-94 | | | |
| 110 | Universal Agro Chem., Pvt., Ltd., Kar. | Rotap 4 G (98 tech) | Cartap hydrochloride | Rice Stem Borers. | I | 26-10-94 | 26-3-94 | | II | Insect. |
| 112 | Biochem Ltd., Karachi | Proturex 500 SC | Isoproturon | Weeds in Wheat. | H | 3/11/1994 | 27-2-94 | | | |
| 113 | National Pesticide Corp., Ltd., Kar. | MVP bioinsecticide 10% w/w | Delta endotoxin of Bt variety Kurstuki encapsulated in Pseudomonas fluorescens | Cotton bollworms, potato tuber moth tomato fruit worms cabbage diamond moth and apple codling moth. | | 3/11/1994 | 12/9/1994 | | BIO | Insect. |
| 114 | United Technova Cham (Pvt.) Ltd. 702, Mashriq Center, Block -14, Gulshan - e - Iqbal, Karachi. | Cekufanato 70 PM | Thiophanate Methyl | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | F | 6/11/1994 | 6/7/1994 | | | |
| 115 | Universal Agro Chem., Pvt., Ltd., Kar. | Rometa 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 6/11/1994 | 22-3-94 | | | |
| 116 | National Pesticide Corp., Ltd., Kar. | Mpede Insecticide | Potassium Salt of saturated & unsaturated aliphatic carboxylic acid | Cotton whiteflies, aphids, leaf H, thrips, mites, vegetable whitefly, aphids, leaf H, bugs, thrips, hoppers and mites. | I | 6/11/1994 | 12/9/1994 | | BIO | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| 117 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Proton 500 WP | Isoproturon | Weeds in Wheat. | H | 05.08.2003 | 07.11.2006 | Renewal / Revised | | |
| 118 | Sino Asia International Ltd., Lahore | Saipric 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 28-11-94 | 28-8-94 | | | |
| 119 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Sinocidin 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 28-11-94 | 28-8-94 | | II | Insect. |
| 120 | Sino Asia International Ltd., Lahore | Global 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 28-11-94 | 28-8-94 | | | |
| 121 | R. B. Avari Enterprises (Pvt.) Ltd., Karachi. | Agrofuran 3 G (90-95% tech) | Carbofuran | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | I | 29-11-94 | 19-2-94 | | Ib | Insect. |
| 123 | Hoechst Pharmaceutical Karachi. | Condor 7.5% FS | Bacillus Thuringiensis | Cotton bollworms, army worm and semi loopers, and Legume Vegetables loopers, pod words, and army worms. | I | 29-11-94 | 12/6/1994 | | BIO | Insect. |
| 124 | National Pesticide Corp., Ltd., Kar. | Sunagor 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 13-12-94 | 8/11/1994 | | | |
| 125 | FMC United (Private) Limited<br>61-A Main Gulberg, Lahore. | Rugby 10 G (88% w/w tech) | Cadusafos | Soil nematodes in banana, tomatoes, citrus, sugarcane, ginger & tobacco. | Nematic ide | 22-12-94 | 27-11-93 | | Ib | Nematicid e |
| 126 | Anwaar Agro Services<br>Street-4, Hissain Abad, Opp. Gulbahar,<br>Peshawar. | Mouse Baits | Bromadiolone | Norway rats (Rattus norvegicus), roof rats (Rattus rattus), and house mice (Mus musculus) in agricultural structure. | Rod. | 29-12-94 | 4/9/1994 | | Ia | Rod. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 129 | ICI Pak. Ltd., Karchi | Pirimor 50 WG | Pirimicarb | Aphids on wheat. | I | 3/1/1995 | 11/11/1993 | | II | Insect. |
| 130 | H. Rashied and Sons, Lahore | Taishan Pai 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 3/1/1995 | 19-2-94 | | | |
| 131 | Sino Asia International Ltd., Lahore | Dicentra 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 3/1/1995 | 28-8-94 | | | |
| 132 | H. Rashied and Sons, Lahore | Qiang Li 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 5/1/1995 | 22-12-94 | | II | Insect. |
| 133 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Macabre 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 5/1/1995 | 28-8-94 | | | |
| 134 | United Distributors Pakistan Limited<br>9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Sparks 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre | I | 5/1/1995 | 7/11/1994 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | | | |
| 135 | Welgreen Chemicald Pvt., Ltd., LHR | Maravin 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 29-12-94 | 7/8/1994 | | | |
| 136 | National Pesticide Corp., Karachi | Shine 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 8/1/1995 | 8/11/1994 | | | |
| 137 | Biochem Ltd., Karachi | Demecor 50 EC | Endosulfan + Dimethoate | Apple aphids codling moth, and vegetable aphids thrips. | I | 9/1/1995 | 27-2-94 | | II | Insect. |
| 138 | R.B. Avari Enterprises (Pvt.) Ltd. Sasi Arcade, Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Samite 15% EC 20% WP | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 9/1/1995 | 19-4-94 | | | |
| 139 | Marvi Agrochem Pvt., Ltd., Karachi | Fist 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 13-2-95 | 27-11-94 | | | |
| 140 | Edgro Pvt., Ltd., Karachi | Kingsup 41% SL | Glyphosate | Control of annual and perennial grasses and broad-leaved weeds. | H | 13-2-95 | 30-12-93 | | | |
| 141 | Pak. Pesticides Pvt., Ltd., Lahore | Saver 80 WP | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre<br>Potato, Downy mildew, 600 gm/acre<br>Vegetable, Downy mildew, 800 gm/acre<br>Cucurbits, Downy mildew, 800 gm/acre | | 13-2-95 | 28-3-94 | | | |
| 142 | Malik Pesticides, Lahore | Diazion 72% EC | 2,4-D Butyl Easter | Broad leaf, weeds in wheat. | H | 13-2-95 | 13-10-94 | | II | Herb. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 144 | Welgreen Chemicald Pvt., Ltd., LHR | Bandox 60 EC | Butachlor | Weeds in rice. | H | 14-2-95 | 8/1/1995 | | III | Herb. |
| 145 | Nafees (Pvt.) Ltd.<br>18 - H, Vehari 61100. | Sumitix 20 EC (w/v) (Appendix-A) | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 07.06.2003 | 13.02.2004 | Revised | | |
| 146 | Welgreen Chemicald Pvt., Ltd., LHR | Demis 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 16-2-95 | 7/8/1994 | | | |
| 148 | International Trade Centre, Karachi | Alpha-C 5 EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 19-2-95 | 22-3-94 | | II | Insect. |
| 149 | Marvi Agrochem Pvt., Ltd., Karachi | Pest-Ban-100 21.2 EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 20-2-95 | 24-10-94 | | II | Insect. |
| 150 | Pakistan Agro Chemicals (Pvt.) Ltd.<br>38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Sanitox 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 20-2-95 | 29-8-94 | | | |
| 151 | Farmtech Pvt., Ltd., Karachi | Morter 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 22-2-95 | 22-12-94 | | | |
| 152 | Pakistan Agro Chemicals (Pvt.) Ltd.<br>38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Ecca 25 EC | Quinalphos | Broers of Sugarcane, mites of apples, aphids of tobacco, cotton pink, spotted and Heliothis bollworms, Army worms and thrips, whitefly, aphids, jassids, stem borers of paddy fruitfly of mango and melon. | I | 22-2-95 | 15-2-95 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 153 | Mehran Agro Cham Pvt., Ltd., Karachi | Marvel Biesterfeld 35 EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 12/3/1995 | 26-3-94 | | | |
| 156 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground (Ext.)<br>Lahore Cantt. | Lianzi 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 27-3-95 | 23-2-95 | | II | Insect. |
| 158 | Pakistan Agro Chemicals (Pvt.) Ltd.<br>38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Nufa 35 EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 30-3-95 | 27-7-93 | | | |
| 159 | Welgreen Chemical (Pvt.) Ltd.<br>202, Latif Plaza, 103 - Ferozpur Road,<br>Lahore. | Thunder 50% (w/v)EC (Appendix-A) | Dichlorovos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>**Mango, Hoppers, 300 ml/100 lit water**<br>**Mango, Mealybugs, 300 ml/100 lit water**<br>Citrus, Psyilla, 300 ml/100 lit water<br>Citrus, Butterfly, 300 ml/100 lit water<br>Citrus, Blackfly, 300 ml/100 lit water<br>Tobbaco, Aphids, 300 ml/acre<br>Okra, Jassids, 300 ml/acre<br>Okra, Aphids, 300 ml/acre<br>Orchards, Mealybugs, 300 ml/100 lit water<br>Orchards, Scales, 300 ml/100 lit water<br>Peaches, Aphids, 300 ml/100 lit water | I | 07.10.2003 | 02.04.2004 | Revised | Ib | Insect. |
| 160 | Welgreen Chemical (Pvt) Ltd.<br>202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Forlorn 20% (w/v) EC (Appendix - A) | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 24.05.2003 | 02.04.2004 | Revised | | |
| 161 | Ali Akbar Enterprises<br>H# 97, ST# 12 Cavalary Ground (Ext.),<br>Lahore Cantt. | Sinocidin 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 4/4/1995 | 28-2-95 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 163 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground (Ext.)<br>Lahore Cantt. | Bulletin 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 6/4/1995 | 28-2-95 | | II | Insect. |
| 164 | Pak Pesticides Pvt., Ltd., Lahore | Panron 50 WP | Isoproturon | Weeds in Wheat. | H | 16-4-95 | 10/1/1995 | | | |
| 165 | Arysta Agro Pakistan (Pvt.) Ltd.<br>Office No.213, Second Floor,<br>Business<br>Avenue, 26-A, Block-6, P.E.C.H.S.<br>Karachi. | Saturn 50 EC | Benthiocarb | Weeds in Rice. | H | 16-4-95 | 29-12-94 | | II | Herb. |
| 166 | Pak Pesticides Pvt., Ltd., Lahore | Hubelux 25 EC | Quinalphos | Broers of Sugarcane, mites of apples, aphids of tobacco, cotton pink, spotted and Heliothis bollworms, Army worms and thrips, whitefly, aphids, jassids, stem borers of paddy fruitfly of mango and melon. | I | 16-4-95 | 9/3/1995 | | | |
| 167 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28,Abdullah Haroon Road,<br>Karachi-74400. | Ancom 80 WP | Diuron | Broad leaved weeds and grasses in sugarcane. | H | 16-4-95 | 19-3-95 | | III | Herb. |
| 168 | Pak Pesticides Pvt., Ltd., Lahore | Shasicidin 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 16-4-95 | 10/1/1995 | | | |
| 169 | Welgreen Chemicald Pvt., Ltd., LHR | Kozoo 40 WSC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 17-4-95 | 8/1/1995 | | | |
| 170 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28,Abdullah Haroon Road, Karachi-74400. | Jiangmen 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre | I | 17-4-95 | 9/3/1995 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | | | | | | |
| 171 | Malik Pesticides, Lahore | Tianning 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 17-4-95 | 10/1/1995 | | | |
| 172 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Sinozine 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 20-4-95 | 28-8-94 | | II | Insect. |
| 173 | H. Rashied and Sons, Lahore | Nuofeng 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 20-4-95 | 22-12-94 | | | |
| 174 | National Pesticide Corp., Karachi | Rocky 35 EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 25-4-95 | 1/2/1995 | | | |
| 175 | Seatco (Pvt.) Ltd.<br>133-N, Block, Model Town,<br>Lahore-54700 | Luhu 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 26-4-95 | 9/3/1995 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 176 | Seatco (Pvt.) Ltd.<br>133-N, Block, Model Town,<br>Lahore-54700 | Ya Ti 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 26-4-95 | 9/3/1995 | | II | Insect. |
| 177 | Agricides (Pvt.) Ltd., Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Edpex 25 EC, 0.5% Powder | Permethrin | (1)25 EC-Cotton bollworms and stored grain pests of wheat and rice. (2) 0.5 % Powder-stored grain pests of wheat and rice. | I | 30-4-95 | 9/4/1995 | | II | Insect. |
| 178 | Seatco (Pvt.) Ltd.<br>133-N, Block, Model Town,<br>Lahore-54700 | Meilian 20 EC (w/w) | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 30-4-95 | 30-4-95 | | | |
| 179 | Agricide Pvt., Ltd., Karachi | Freg 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 15-5-95 | 10/4/1995 | | | |
| 180 | Novartis Pvt., Ltd., Karachi | Agree 50 WP | Bacillus thuringiensis | Cotton bollworms, army worm and semi loopers, and Legume Vegetables loopers, pod words, and army worms. | I | 17-5-95 | 3/1/1995 | | BIO | Insect. |
| 182 | AG - Mart (Pvt.) Ltd.<br>BPL House C-120, Sector 31 - A,<br>Korangi,<br>Karachi. | Sunendo 35 EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 18-5-95 | 8/2/1995 | | | |
| 183 | Progressive Impex<br>Room No.8/22, 8th Floor, Arkay Square,<br>Shahra-e-Liaquat, Karachi-74000. | Quingang 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 25-5-95 | 10/4/1994 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 184 | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28,Abdullah Haroon Road, Karachi-74400. | Bandox 60 EC | Butachlor | Weeds in rice. | H | 28-5-95 | 15-5-95 | | III | Herb. |
| 185 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Trifmine 15 EC | Triflumizole | Rice Bakanae disease, Helminthosporium Leaf spot, Blast and Cucumber powdery mildew. | F | 28-5-95 | 29-12-94 | | III | Fung. |
| 186 | Edgro Pvt., Ltd., Karachi | Magic 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 30-5-95 | 3/10/1993 | | II | Insect. |
| 187 | Novartis Pvt., Ltd., Karachi | Match 50 EC | Lufenuron | Potato beetle, maize borers, pyrila sp; orchard noctuids & citrus whiteflies and leaf minor. | I | 1/6/1995 | 1/2/1995 | | III | Insect. |
| 188 | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28,Abdullah Haroon Road, Karachi-74400. | Chaser 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 7/6/1995 | 30-5-95 | | | |
| 189 | National Insecticides Company (Pvt.) Ltd. Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Quattro 200/200 g/l | Bromoxynil + MCPA | Wheeds in wheat. | H | 19-6-95 | 27-11-94 | | II +III | Herb. |
| 190 | The Saggus (Pvt.) Ltd. 20 - G, Saggus House, Vehari. | Sinomyl 20 EC | Methomyl | Cotton Pink, spotted and Heliothis bollworms, Army worm, thrips, whitefly, aphids, jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphids. | I | 19-6-95 | 28-12-94 | | | |
| 191 | Farmers Equity (Pvt.) Ltd. 3704 / 70 Hassan Parwana Colony, Multan. | Termicide 40 EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | | 19-7-95 | 22-2-95 | | II | Insect. |
| 192 | Farm Shield Pvt., Ltd., Lahore | Tibuior Ag-Chacking 60 EC | Butachlor | Weeds in rice. | H | 23-7-95 | 24-4-95 | | III | Herb. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 194 | National Pesticide Corp., Karachi | Larvo-Bt 26.4% FL | Bacillus Thuringiensis | Cotton bollworms, army worm and semi loopers, and Legume Vegetables loopers, pod words, and army worms. | I | 25-7-95 | 8/8/1994 | | BIO | Insect. |
| 196 | Ali Akbar Enterprises, Lahore. | Nong Chi 20 EC | Methomyl | Cotton Pink, spotted and Heliothis bollworms, Army worm, thrips, whitefly, aphids, jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphids. | I | 9/8/1995 | 3/8/1995 | | | |
| 197 | Chem Shield, International, Karachi | Fenokill 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 24-8-95 | 12/6/1995 | | | |
| 198 | Chamdyes Pak., Pvt., Ltd., Karachi | Bollstar 720 EC | Sulprofos | Cotton bollworms heliothis, thrips whitefly and mites. | I | 22-8-95 | 3/10/1993 | | II | Insect. |
| 199 | Agricides (Pvt.) Ltd., Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Tornado DF 700 g/l | 2,4-D Sodium | Broad leaf weeds in sugarcane & careal crops. | H | 24-8-95 | 28-6-94 | | II | Herb. |
| 200 | Marvi Agrochem Pvt., Ltd., Karachi | Fenitol 20 EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 7/9/1995 | 19-3-95 | | | |
| 201 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Syngenta Pakistan Limited S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre Potato, Downy mildew, 600 gm/acre Vegetable, Downy mildew, 800 gm/acre Cucurbits, Downy mildew, 800 gm/acre | | 20-9-95 | 26-4-95 | | | |
| 202 | Farm Shield Pvt., Ltd., Lahore | Kinggo 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre Cotton, Thrips, 400 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Tobacco, Aphids, 400 ml/acre Oil seed, Aphids, 400 ml/acre Sugarcane, Pyrilla, 400 ml/acre | I | 21-9-95 | 24-4-95 | | | |
| 203 | Farm Shield Pvt., Ltd., Lahore | Sinocidin 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 21-9-95 | 24-4-95 | | | |
| 204 | Unica Internatioanl (Pvt.) Ltd., Lahore | Taishan 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | I | 21-9-95 | 25-7-95 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 205 | Unica Internatioanl (Pvt.) Ltd., Lahore | Puxing 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 21-9-95 | 3/7/1995 | | | |
| 207 | Farm Shield Pvt., Ltd., Lahore | Galarich 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 21-9-95 | 24-4-95 | | | |
| 208 | Marvi Agrochem Pvt., Ltd., Karachi | Mandate 30 EC | Acephate | Cotton Pink, Spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids. | | 20-9-95 | 29-12-94 | | | |
| 211 | Crop Care Pvt., Ltd., Lahore | Qing wu ju zhi 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 18-10-95 | 4/7/1995 | | | |
| 212 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28,Abdullah Haroon Road,<br>Karachi-74400. | Salong 20 EC | Methomyl | Cotton Pink, spotted and Heliothis bollworms, Army worm, thrips, whitefly, aphids, jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphids. | I | 23-10-95 | 26-9-95 | | | |
| 216 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28,Abdullah Haroon Road,<br>Karachi-74400. | Swat 75 WP | Isoproturon | Weeds in Wheat. | H | 31-10-95 | 22-10-95 | | III | Herb. |
| 217 | Agricide Pvt., Ltd., Karachi | EPO 25 EC | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 12/11/1995 | 3/7/1995 | | III | Insect. |
| 218 | Granulars Pvt., Ltd., Karachi | Jitachlor 60 EC | Butachlor | Weeds in rice. | H | 12/11/1995 | 27-3-95 | | III | Herb. |
| 220 | Unica Internatioanl (Pvt.) Ltd., Lahore | Tithrin 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 23-11-95 | 18-9-95 | | II | Insect. |
| 221 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground (Ext.)<br>Lahore Cantt. | Bailing 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 22-11-95 | 20-9-95 | | | |
| 222 | Wecon Chemical Pvt., Ltd., Lahore | Fenokill 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 23-11-95 | 25-5-95 | | | |
| 223 | Data Universal Pvt., Ltd., karachi | Swat 50 WP | Isoproturon | Weeds in Wheat. | H | 13-12-95 | 29-12-93 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 224 | R.B. Avari Enterprises (Pvt.) Ltd. Sasi Arcade, Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | Sanofos 40 EC (w/v) (Appendix-A) | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 07.06.2003 | 31.12.2003 | Renewal | | |
| 225 | Progressive Impex, Karachi | Li 35 EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 7/12/1995 | 25-7-94 | | | |
| 226 | Anwaar Agro Services Street-4, Hissain Abad, Opp. Gulbahar, Peshawar. | Moshkil 0.5% Liquid | Bromadiolone | Rodent. | Rod. | 7/12/1995 | 18-7-95 | | Ia | Rod. |
| 227 | AG Services & Supplies, Karachi | Dicopur 600 g/l | 2,4-D Amine | Broad leaves weeds in cereals. | H | 05.07.2000 | 16.12.2001 | | II | Herb. |
| 228 | Welgreen Chemical (Pvt) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Polson 10% (w/v) EC (Appendix-A) | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 24.05.2003 | 18.12.2004 | Revised | II | Insect. |
| 229 | Anwaar Agro Services Street-4, Hissain Abad, Opp. Gulbahar, Peshawar. | Asiaphate 30 EC | Acephate | Cotton Pink, Spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids. | | 6/12/1995 | 12/7/1995 | | | |
| 230 | First Alnoor, Karachi | Tianning 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 21-1-96 | 6/4/1995 | | | |
| 231 | Unica Internatioanl (Pvt.) Ltd., Lahore | Demis 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 22-1-96 | 20-11-95 | | | |
| 232 | Unica Internatioanl (Pvt.) Ltd., Lahore | Maravin 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 22-1-96 | 20-11-95 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 234 | Farm Shield Pvt., Ltd., Lahore | Fundazol 50 WP | Benomyl | seed dressing and melon powdery mildew. | F | 23-1-96 | 24-4-95 | | III | Fung. |
| 235 | Sultan Multi Trading (Pvt.) Ltd. 27-Ali Block, New Garden Town, Lahore-54600. | Swat 75 WP | Isoproturon | Weeds in Wheat. | H | 21-1-96 | 26-9-95 | | | |
| 237 | Welcon Chemicals Pvt., Ltd., lahore | Welthrin 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 24-1-96 | 18-1-96 | | II | Insect. |
| 238 | Welcon Chemicals Pvt., Ltd., lahore | Global 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 24-1-96 | 16-1-96 | | | |
| 239 | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28,Abdullah Haroon Road, Karachi-74400. | Nicavos 50 EC | Dichlorovos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>**Mango, Hoppers, 300 ml/100 lit water**<br>**Mango, Mealybugs, 300 ml/100 lit water**<br>Citrus, Psyilla, 300 ml/100 lit water<br>Citrus, Butterfly, 300 ml/100 lit water<br>Citrus, Blackfly, 300 ml/100 lit water<br>Tobbaco, Aphids, 300 ml/acre<br>Okra, Jassids, 300 ml/acre<br>Okra, Aphids, 300 ml/acre<br>Orchards, Mealybugs, 300 ml/100 lit water<br>Orchards, Scales, 300 ml/100 lit water<br>Peaches, Aphids, 300 ml/100 lit water | I | 24-1-96 | 8/11/1995 | | Ib | Insect. |
| 240 | Universal Agrochemical Pvt Ltd., Kar. | Rocyper 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 25-1-96 | 19-4-95 | | II | Insect. |
| 242 | R. B. Avari Enterprises (Pvt.) Ltd. Fretan Square, Opp. Wazir Mansion, Railway Station, Mauripur Road, Daryabad, Karachi-053. | Lasher 25 WP (Appendix-A) | Chlorotoluron | Annual broad leaved and annual grasses in wheat and barley. | H | 14.11.2002 | 28.02.2003 | Renewal | III | Herb. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
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| 243 | National Insecticides Company (Pvt.) Ltd. Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Tamex 360 g/l EC (Appendix-A) | Butralin | Broad leaved weeds and grasses of orchards and vegetables. | H | 26.05.2003 | 03.02.2005 | Revised | Ib | Nematicid e |
| 244 | Growers (Pvt.) Ltd. 65, 2nd Floor, Hafeez Centre, Lahore. | Sensor 20 EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 11/2/1996 | 24-12-95 | | II | Insect. |
| 245 | Excellsior Int., Pvt., Ltd., LHR | Galarach 50 SC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 11/2/1996 | 28-1-96 | | | |
| 246 | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28,Abdullah Haroon Road, Karachi-74400. | Li 35 EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 14-2-96 | 22-10-95 | | | |
| 248 | FMC United (Private) Limited 61-A Main Gulberg, Lahore. | Acrobat MZ 75/667 g/kg WP (Appendix-A) | Dimethomorph + Mancozeb | Potatoes - late blight, mildews, Alternaria; Vines - mildews; Tomatoes - mildews and Cucumbers - mildews. | F | 19.11.2002 | 04.03.2004 | Revised | III | Fung. |
| 249 | National Pesticide, Co., Karachi | Coppernordox 50 WP | Cuprous Oxide | Downy mildew of vegetable & early and late blight of tomato and potato. | F | 7/3/1996 | 27-4-95 | | II | Fung. |
| 250 | National Pesticide, Co., Karachi | Natural L 2.3 x 107 Powder | Beauveria Natural Fangs | Cotton and vegetable, whitefly. | I | 7/3/1996 | 21-7-94 | | BIO | Insect. |
| 251 | Agricides (Pvt.) Ltd., Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Cardan 5 G (90% tech) | Monomehypo | Rice borers, rice leaf roller and sugarcane borers. | I | 7/3/1996 | 3/5/1995 | | | |
| 252 | Commandar Agro Pvt., LTd., Multan | Tithrin 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 12/3/1996 | 14-2-96 | | II | Insect. |
| 253 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Galarach 50 SC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre | I | 12/3/1996 | 14-2-96 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | | | | | | |
| 254 | Commander Agro (Pvt.) Ltd.<br>75-Askaria Colony,Shershah Road,<br>Multan Cantt. | Sinocidin 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 12/3/1996 | 14-2-96 | | | |
| 256 | Seatco Pvt., Ltd., Lahore | Kamephos 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 12/3/1996 | 20-12-95 | | | |
| 257 | Ali Akbar Enterprises, Lahore. | Principal 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 12/3/1996 | 11/2/1996 | | | |
| 258 | Vital Chemical Corp., Lahore | Megan 50 SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 12/3/1996 | 19-3-95 | | | |
| 259 | Vital Cemicals Corporation<br>18/ 3, Shah Arcade, Civic Center,<br>New Garden Town, Lahore. | Jingang 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 12/3/1996 | 19-3-95 | | | |
| 260 | Vital Chemical Corp., Lahore | Radar 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 12/3/1996 | 28-1-96 | | II | Insect. |
| 261 | Pakistan Agrochemical Pvt.,Ltd., Kar. | Orifan 480 EC | Trifluralin | Annual grasses and broad leaves weeds in cotton and potato. | H | 13-3-96 | 16-1-96 | | | |
| 262 | Multan Agrochemical, Multan | Pride 25 WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 14-3-96 | 8/2/1996 | | III | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 263 | Ali Akbar Enterprises<br>H# 97, ST# 12 Cavalary Ground (Ext.),<br>Lahore Cantt. | Miyao 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 2/4/1996 | 21-3-96 | | | |
| 264 | Ali Akbar Enterprises, Lahore. | Fuslan 48 EC | Trifluralin | Annual grasses and broad leaves weeds in cotton and potato. | H | 2/4/1996 | 14-2-96 | | | |
| 265 | Edgro (Pvt.) Ltd.<br>Marine Trade Centre, BC - 3,<br>Kehkashan,<br>Block - 9, Clifton,<br>Karachi - 75600. | Bromon 99% min. | Methyl Bromide | Stored agricultural commodities as a Fumigant. | F | 4/4/1996 | 18-2-96 | | II | Fung. |
| 266 | Unica International (Pvt.) Ltd.<br>51-S-78, Muslim Street No. 7,<br>Islamabad<br>Colony, Samanabad, | Titophos 40 EC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 7/4/1996 | 4/5/1995 | | | |
| 267 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28,Abdullah Haroon Road,<br>Karachi-74400. | Titophos 40 EC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre | I | 7/4/1996 | 26-2-96 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | | | |
| 268 | National Pesticide, Co., Karachi | Suntap 4 G (98% tech) | Cartap Hydrochloride | Rice Stem Borers. | I | 8/4/1996 | 25-4-95 | | II | Insect. |
| 270 | Quality International Traders (Pvt.) Ltd.<br>9-Light Industrial Area,<br>Model Town-B, Bahawalpur. | Sinocidin 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 11/4/1996 | 1/4/1996 | | | |
| 272 | Quality International Traders (Pvt.) Ltd.<br>9-Light Industrial Area, Model Town-B,<br>Bahawalpur. | Galarach 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 11/4/1996 | 1/4/1996 | | | |
| 273 | Quality International Traders (Pvt.) Ltd.<br>9-Light Industrial Area,<br>Model Town-B,<br>Bahawalpur. | Kinggo 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 11/4/1996 | 1/4/1996 | | | |
| 274 | THE PLANTERS (PVT.) LTD.<br># 9, 3rd Floor, City Plaza, F-10<br>Markaz, Islamabad. | DEGESCH Plates/Strips (Appendix-A) | Magnesium Phosphide | Tobacco beetle and moth and stored products pests. | | 11/4/1996 | 6/8/1995 | | | |
| 275 | Pakistan Agro Chemicals (Pvt.) Ltd.<br>38 - C / IV, Block - 6, P.E.C.H.S.,<br>Karachi. | Razex 4 G (w/w) (App.-A)<br>& 98% Tech. (w/w) (App.-B) | Cartap Hydrochloride | Rice Stem Borers. | I | 05.08.2003 | 10.04.2005 | Renewal / Revised | II | Insect. |
| 276 | Shani Agro Marketing .,<br>Mian Channu | Mayao 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre | I | 15-4-96 | 1/4/1996 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | | | |
| 277 | Welcon Chemicals (Pvt.) Ltd.<br>Suite # 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Ketto 40 EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 23-4-96 | 14-2-96 | | II | Insect. |
| 280 | Bayer CropScience (Pvt.) Ltd.<br>Plot NO. 23, Sector No. 22, Korangi<br>Industrial Area, Karachi. | Scout X-Tra 108 g/l EC (Appendix-A) | Tralomethrin | Cotton jassids, bollworms, armyworms and vegetable jassids and caterpillars. | I | 21.03.2003 | 24.04.2005 | Revised | II | Insect. |
| 281 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28,Abdullah Haroon<br>Road, Karachi-74400. | Skolix 5 EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 2/5/1996 | | | II | Insect. |
| 282 | Welcon Chemicals (Pvt.) Ltd.<br>Suite # 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Sun 5% EC (App-A) & 90 % (w/w) Tech. (App-B) | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 30.04.2001 | 05-05-2002 | Renewal / Revised | II | Insect. |
| 283 | Delta International, Karachi | Xingan 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 7/5/1996 | 17-12-95 | | | |
| 284 | ICI Pakistan Ltd.<br>ICI House, 5,West<br>Wharf,P.O.BoxNo.4731<br>Karachi - 74000. | Technufan 35 EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 8/5/1996 | 8/4/1996 | | | |
| 285 | Welcon Chemicals Pvt., Ltd., lahore | Weltal 20 EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 12/5/1996 | 5/5/1996 | | | |
| 286 | Pakistan Agro Chemicals (Pvt.) Ltd.<br>38 - C / IV, Block - 6, P.E.C.H.S.<br>Karachi. | Mamea 35% EC (w/v) (App.-A) & 95% (w/w) Tech. (App.-B) | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre | I | 09.04.2003 | 31.12.2003 | Renewal | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | | | | | | |
| 287 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Macabre 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 12/5/1996 | 12/7/1995 | | | |
| 288 | Ali Akbar Enterprises, Lahore. | Lotus 70 WP | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre<br>Potato, Downy mildew, 600 gm/acre<br>Vegetable, Downy mildew, 800 gm/acre<br>Cucurbits, Downy mildew, 800 gm/acre | | 19-5-96 | 28-3-96 | | | |
| 289 | National Pesticide, Co., Karachi | Cypercal 10 EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 23-5-96 | 28-2-96 | | II | Insect. |
| 291 | Ali Akbar Enterprises, Lahore. | Sona 40 EC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 3/6/1996 | 11/2/1996 | | | |
| 292 | Ali Akbar Enterprises, Lahore. | Star 5 EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 3/6/1996 | | | II | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 293 | SC Dyestuffs & Chemicals (Pvt.) Ltd. 2nd Floor, Palace Cinema Bldg.,Civil Lines, Karachi. | PB-Rope L 70g/500 Dispens | Pectinophora Gossypiella (Sex Pheromones) | Cotton pink bollowrms. | | 3/6/1996 | 19-5-96 | | BIO | Insect. |
| 294 | Anwaar Agro Services Street-4, Hissain Abad, Opp. Gulbahar, Peshawar. | Fastkil 20% (w/v) EC (Appendix-A) | Methomyl | Cotton Pink, spotted and Heliothis bollworms, Army worm, thrips, whitefly, aphids, jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphids. | I | 15.11.2002 | 02.06.2005 | Renewal / Revised | | |
| 295 | United Distributors Pakistan Limited, 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Avanti 5 EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 3/6/1996 | 23-11-95 | | II | Insect. |
| 296 | BASF Chemicals & Polymers Pakistan (Pvt.) Ltd. 46 - A Block - 6 P.E.C.H.S. Karachi 75400. | Basamid 97% G (94% min. tech) | Dazomet | Seedling damping off disease, germinating weed seeds, soil fungi, free living root nematodes, potato nematodes, cyst and stem nematodes, and root eelworms. | F | 3/6/1996 | 14-11-94 | | III | Fung. |
| 297 | Edgro Pvt., Ltd., Karachi | Edcron 40 SCW | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 5/6/1996 | 11/3/1996 | | | |
| 298 | Edgro Pvt., Ltd., Karachi | Edcura 40 EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 5/6/1996 | 13-3-96 | | | |
| 299 | Agricides Pvt., LTd., Karachi | Frank 20 EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 5/6/1996 | 13-3-96 | | | |
| 300 | Agricides (Pvt.) Ltd., Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Dipel ES 3.5% | Bacillus Thuringiensis | Cotton bollworms, army worm and semi loopers, and Legume Vegetables loopers, pod words, and army worms. | I | 6/6/1996 | 30-7-95 | | BIO | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 303 | Shani Agro Marketing, Mian Channu | Fenokill 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 17-6-96 | 31-3-96 | | | |
| 304 | Excellsior Int. Pvt., Ltd., LHR | Swat 50 WP | Isoproturon | Weeds in Wheat. | H | 18-6-96 | 28-1-96 | | | |
| 306 | AgrEvo Pak., Ltd., Karachi | Vitavax 200 FF | Corboxim + Thiram | Control of loose and covered smuts in barley, loose smut and bunt in wheat, Helminthosporium oryzae in rice Rhizoctonia solani, Fusanium spp. and Pythium spp. in cotton as seed treatment. | F | 20-6-96 | 9/2/1995 | | III +III | Fung. |
| 307 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Dachlor 50 EC | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 12.03.2003 | 06.07.2005 | Renewal / Revised | III | Herb. |
| 308 | Edgro (Pvt.) Ltd. Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | Edtrin-C 25 EC (5+20 g/l) | Cypermethrin + Profenofos | Cotton Bollworm, Jassids, Whitefly, Thrips and Mites. | I | 14-7-96 | 11/4/1996 | | II | Insect. |
| 309 | Experts Agricare Int., Ltd., Lahore | Sumitik 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 7/8/1996 | 9/6/1996 | | | |
| 310 | R. B. Avari Enterprises (Pvt.) Ltd., Karachi. | Gunther 44 EC | Profenofos + Cypermethrin | Cotton Bollworm, Jassids, Whitefly, Thrips and Mites. | I | 15-8-96 | 23-1-95 | | II | Insect. |
| 311 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Mospilan 20 SP (w/w) (App.-A) & 99% Tech. (w/w) (App.-B) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 19.02.2003 | 18.08.2005 | Renewal | II | Insect. |
| 312 | Pakistan Agrochemical Pvt.,Ltd., Kar. | Carbosan 3 G (75% tech) | Carbofuran | Rice stem borers - 10 kg / acre, Sugarcane borers - 14 kg / acre, Maize borers - 8 kg / acre. | I | 19-8-96 | 17-6-96 | | Ib | Insect. |
| 313 | United Distributors Pakistan Limited 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Afidanil 35% EC (w/v) (Appendix-A) | Endosulfan | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre | I | 04.11.2002 | 19.08.2005 | Renewal | | |
| 314 | Malik Pesticide, Lahore | Jinong 38 FL | Atrazine | Weeds in maize, rice and Sugarcane. | H | 20-8-96 | 17-4-96 | | III | Herb. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 315 | People Pesticide Pak. Pvt., Ltd., Kar. | Sinocidin 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 26-8-96 | 4/10/1995 | | | |
| 316 | People Pesticide Pak. Pvt., Ltd., Kar. | Dalla 2.5+25 w/v EC | Cypermethrin + Fenitrothion | Cotton heliothis & bollworms, vegetable aphids, bettles, heliothis, caterpillars & orcahrds aphids, pyrilla, scale lice & grassland locust. | I | 26-8-96 | 7/5/1995 | | II | Insect. |
| 317 | People Pesticide Pak. Pvt., Ltd., Kar. | Galarach 50 SC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 26-8-96 | 4/10/1995 | | | |
| 318 | RIiance Chemical Pvt., Ltd., Karachi | Galarch 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 1/9/1996 | 6/5/1996 | | | |
| 319 | Pan Pacific (Pvt.) Ltd.<br>12 - M Block VI, P.E.C.H.S.,<br>Karachi. | Top Fist 5% (w/v) EC & 90% Tech. (w/w) (App.-A, B) | Esfenvalerate | Cotton Jassids, whitefly, pink, spotted and heliothis bollworms. | I | 25.06.2003 | 31.08.2005 | Renewal / Revised | | |
| 320 | Malik Pesticide, Lahore | Longshizi 50 EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 12/9/1996 | 17-4-96 | | | |
| 321 | Biochem Ltd., Karachi | Pychlorex 48 EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 16-9-96 | 3/1/1995 | | II | Insect. |
| 322 | Sarhad Farm Services, Peshawar | Asiacuron 25 WP | Chlorotoluron | Annual broad leaved and annual grasses in wheat and barley. | H | 16-9-96 | 12/7/1995 | | III | Herb. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 323 | Granulars (Pvt.) Ltd.<br>1st Floor, Kassam Manzil, 1/29<br>Randal Raod, Karachi # 74400. | Sanitol 20% EC w/v (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 12.04.2003 | 02.10.2005 | Renewal / Revised | | |
| 324 | Ali Akbar Enterprises, Lahore. | Sanitol (APKTA) 20% EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 23-10-96 | 2/9/1996 | | | |
| 325 | Agrar Pak Pvt., Ltd., Lahore | Shuanglong 50% W/W ec | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 31-10-96 | 19-12-95 | | | |
| 326 | Farm Shield Pvt., Ltd., Lahore | Star 4.5 EC W/W | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 31-10-96 | 9/6/1996 | | II | Insect. |
| 328 | Ali Akbar Enterprises, Lahore. | Fencidor 10 WP (10% W/W) | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 12/12/1996 | 1/10/1996 | | II | Insect. |
| 329 | Pass Pvt., Ltd., Lahore | Pestidor 25 WP (25% W/W) | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 16-12-96 | 14-7-96 | | | |
| 330 | Nafees (Pvt.) Ltd.<br>18 - H, Vehari 61100. | Tifen 20 (22.3% W/V) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 16-12-96 | 16-10-96 | | | |
| 331 | FMC United (Pvt.) Ltd.<br>61-A, Main Gulberg, Lahore. | Command 3ME (314 g/l) (Appendix-A) | Clomazone | Trianthema portula castrum, Sorghum halepense, Chenopodium album, Portulaca oleracea in tobacco, Soyabean, Cucurbits, Potatoes, Tomato and pepers and Echinochloa crus-galli, Cyperus iria and Cyperus difformis in rice by pre-emergence application. | H | 01.01.2003 | 18.12.2005 | Renewal / Revised | II | Herb. |
| 332 | Al-Farid Corporation<br>B-47 Block 13D-1 Gulshan-e-Iqbal, Karachi. | Phome 23% (W/W) EC | Fenpropathrine Phoxim | Cotton Pest Comlex. | I | 21-12-96 | 9/12/1996 | | II | Insect. |
| 333 | Al-Farid Corporation<br>7/38, Arkay Square, Shahrah-e-Liaquat, Karachi. | Chaser 60 SL (50% W/W) (Appendix-A) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 21.03.2003 | 20.12.2005 | Renewal | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 334 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Thiolix 35% EC (w/v) (App.-A) & 95% (w/w) Tech. (App.-A) | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 19.02.2003 | 29.12.2005 | Renewal / Revised | | |
| 336 | Bayer CropScience (Pvt.) Ltd. Plot NO. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Real 25 FS (200 + 84 g/l) (Appendix-A) | Triticonazole + Anthraquinone | Wheat brown rust, bunt, loose smut, fusarium, blight, barley fusarium blight, loose smut, brown rust, Helminthosporium and Rhynchosporium as seed treatment. | F | 22.02.2003 | 30.12.2005 | Renewal / Revised | III | Fung. |
| 337 | Ali Akbar Enterprises, Lahore. | Sword 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 6/1/1997 | | | | |
| 338 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Xianfei 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 13-1-96 | 13-11-96 | | | |
| 341 | Expert Agricare Int. Pvt. Ltd., Lahore | Bandox 60% EC | Butachlor | Weeds in rice. | H | 22-1-97 | 5/6/1996 | | III | Herb. |
| 342 | Welgreen Chemical Pvt. Ltd., Lahore | Totti 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 22-1-97 | 4/1/1997 | | | |
| 343 | Vital Chemical Corporation , Lahore | Checyper 4.5% W/W EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 23-1-97 | 9/12/1996 | | II | Insect. |
| 344 | National Insecticides Co. (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Akofos 40% (w/v) EC (Appendix-A) | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | | 01.01.2003 | 22.01.2006 | Renewal / Revised | II | Insect. |
| 345 | Welgreen Chemical Pvt. Ltd., Lahore | Vidar 10% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 23-1-97 | 25-11-96 | | | |
| 347 | Eva International Pvt. Ltd., Lahore | Shuan Glong 50% W/W EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 25-11-97 | 16-10-96 | | | |
| 348 | Seatco Pvt. Ltd., Lahore | Xianfei 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 29-1-97 | 30-12-96 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 349 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Newcron 40% (w/v) EC (App.-A) & 80% (w/w) Tech. (App.-B) | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | I | 22.02.2003 | 29.01.2006 | Renewal | II | Insect. |
| 350 | Biochem Ltd. Kar. | Fenix 20% W/W EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 31-1-97 | 23-10-96 | | | |
| 351 | Biochem Ltd. Kar. | Protex 35% W/V EC | Endosulfan | Cotton, Jassids, 800 ml/acre Cotton, Whitefly, 800 ml/acre Cotton, Thrips, 800 ml/acre Cotton, Pink Bollworm, 1250 ml/acre Cotton, Spotted Bollworm, 1250 ml/acre Cotton, Heliothis, 1250 ml/acre | I | 1/2/1997 | 23-1-95 | | | |
| 352 | Farm Shield Pvt. Ltd. Lahore | Tifen 20 (22.3% W/V) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 25-1-97 | 9/6/1996 | | | |
| 353 | United Distributors Pakistan Ltd. 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | Sareline 48% (w/v) EC (Appendix-A) | Trifluralin | Annual grasses and broad leaves weeds in cotton and potato. | H | 04.02.2003 | 01.02.2006 | Renewal | | |
| 354 | Marvi Agrochem (Pvt.) Ltd. 12 - M Block - 6, P.E.C.H.S., Karachi. | Acetol 50% (w/v) EC | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 05.06.2003 | 05.02.2006 | Renewal / Revised | III | Herb. |
| 356 | Seatco (Pvt.) Ltd. 133-N, Block, Model Town, Lahore-54700 | ShuangJi 80% WP (w/w) | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre Potato, Downy mildew, 600 gm/acre Vegetable, Downy mildew, 800 gm/acre Cucurbits, Downy mildew, 800 gm/acre | | 05.08.2003 | 03.02.2006 | Renewal / Revised | | |
| 357 | Farmers Chemical Pvt., Ltd., Multan | Bailing 20% W/W EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 29-1-97 | 30-11-96 | | | |
| 358 | Farm Shield Pvt. Ltd. Lahore | Morter 50% W/W | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | I | 5/2/1997 | | | | |
| 359 | Agrar Pak. Pvt. Ltd., Lahore | Star 4.5% W/W EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 4/2/1997 | 8/5/1996 | | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 361 | Nafees (Pvt.) Ltd.<br>18 - H, Vehari 61100. | Fenthrin 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 19-2-97 | 10/12/1996 | | | |
| 362 | Welcon Chemicals Pvt. Ltd, Lahore | Welphos 50% W/W EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 19-2-97 | 24-4-96 | | | |
| 364 | Biochem Ltd. Kar. | Star 4.5% W/W EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 20-2-97 | 8/12/1996 | | II | Insect. |
| 365 | BASF Chemicals & Polymers Pakistan<br>(Pvt.) Ltd.<br>46 - A Block - 6 P.E.C.H.S.<br>Karachi 75400. | Aztec 140 GL EC | Triazomate | Peas - black and green aphids; Crucifer aphids, Beetroot - aphids and Sunflower aphids. | I | 20-2-97 | 7/11/1996 | | | Insect. |
| 366 | Seatco Pvt. Ltd., Lahore | Kamethoate 40 EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 4/4/1996 | 20-12-95 | | | |
| 367 | Pak China Chemicals<br>1 - km Bhoptian Chowk,<br>Defence Road off Raiwind Road,<br>Lahore. | Fenthrin<br>20% (w/v) EC, 90% Tech. & 30% Tech. (App.-A, B, C & D) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 26.04.2003 | 28.03.2006 | Renewal / Revised | | |
| 368 | Edgro (Pvt.) Ltd., Karachi. | Fendol 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 1/4/1997 | 15-12-96 | | | |
| 369 | Dupont Pakistan<br>2nd Floor, Bahria Complex-1,<br>M.T.Khan<br>Road, Karachi. | Matador 200 SC (w/v) (Appendix-A) | Fenazaquin | Mites on apples, pears, apricots, grapes, oranges, lemon, melon, water melon, cucumbers, tomato, strawberry, pepper and cotton (seeds). | Acari. | 19.02.2003 | 31.01.2006 | Renewal / Revised | II | Acari. |
| 370 | Nowsheara Chemical Ind., Kar. | Fenpron 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 1/4/1997 | 15-12-96 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 371 | Al-Farid Corporation<br>B-47 Block 13D-1 Gulshan-e-Iqbal, Karachi. | Jianfol 20% W/W EC | Dicofol | Mites of coton sugarcane, Apple and Almonds. | Acari. | 1/4/1997 | 11/3/1997 | | III | Acari. |
| 372 | Quality International Traders (Pvt.) Ltd.<br>9-Light Industrial Area, Model Town-B,<br>Bahawalpur. | Femetal 20% (w/v) EC (App.-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 24.04.2003 | 10.04.2006 | Renewal / Revised | | |
| 373 | Farmers Equity Pvt., Ltd., Multan | Huangma 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 11/4/1997 | 5/4/1997 | | | |
| 374 | Biochem Ltd. Kar. | Sinopathrin 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 11/4/1997 | 19-2-97 | | | |
| 375 | Farmers Chemical Pvt., Ltd., Multan | Miyao 40% WSC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 16-4-97 | 30-11-96 | | | |
| 376 | Biochem Ltd. Kar. | Manthane 80% W/W WP | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre<br>Potato, Downy mildew, 600 gm/acre<br>Vegetable, Downy mildew, 800 gm/acre<br>Cucurbits, Downy mildew, 800 gm/acre | | 16-4-97 | 8/12/1996 | | | |
| 377 | Pan Pacific Pvt. Ltd., Kar. | Thiophan 35% W/W | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 16-4-97 | 18-3-97 | | | |
| 378 | ICI Pakistan Ltd. ICI House,<br>5,West Wharf, P.O.BoxNo.4731<br>Karachi - 74000. | Oncol 20% (w/w) EC (Appendix-A) | Benfuracarb | Cotton aphids and thrips, Potato aphids, citrus aphids and Leaf-miner. | I | 28.04.2003 | 23.04.2006 | Renewal / Revised | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 380 | Zagro NPC (Pvt.) Ltd.<br>25-Y Main Road, New Multan. | Fenthrin 20% (w/v) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 20.08.2003 | 23.04.2006 | Renewal / Revised | | |
| 381 | Biochem Ltd. Kar. | Daytona 15% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 24-4-97 | 21-4-97 | | | |
| 382 | Welgreen Chemical (Pvt.) Ltd.<br>202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Shenchlor 40% w/v EC (Appendix-A) | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 09.04.2003 | 23.04.2006 | Renewal / Revised | II | Insect. |
| 383 | Quality International Traders (Pvt.) Ltd.<br>9-Light Industrial Area, Model Town-B,<br>Bahawalpur. | Fentox 20% (w/v) EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 31.07.2003 | 31.12.2003 | Renewal | | |
| 384 | Green Gro (Pvt.) Ltd.<br>29-B, Small Industrial Estate,Multan Road, Bhawalpur. | Fenthrin 20% (w/v) EC (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 12.06.2003 | 25.04.2006 | Renewal / Revised | | |
| 385 | Pestinova, Lahore | Neovas 50% W/W EC | Dichlorovos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>**Mango, Hoppers, 300 ml/100 lit water**<br>**Mango, Mealybugs, 300 ml/100 lit water**<br>Citrus, Psyilla, 300 ml/100 lit water<br>Citrus, Butterfly, 300 ml/100 lit water<br>Citrus, Blackfly, 300 ml/100 lit water<br>Tobbaco, Aphids, 300 ml/acre<br>Okra, Jassids, 300 ml/acre<br>Okra, Aphids, 300 ml/acre<br>Orchards, Mealybugs, 300 ml/100 lit water<br>Orchards, Scales, 300 ml/100 lit water<br>Peaches, Aphids, 300 ml/100 lit water | I | 24-4-97 | 30-6-96 | | Ib | Insect. |
| 387 | Malik Pesticide Pvt., Ltd., Lahore | Dingzing 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 25-4-97 | 11/3/1997 | | | |
| 388 | National Pesticide Corp., Pvt., Kar | Calipuron 500 SC | Isoproturon | Weeds in Wheat. | H | 25-4-97 | 2/10/1996 | | | |
| 390 | Agri Gold (Pvt.) Ltd.<br>232/5, Block-VI, Model Town-B, Bahawalpur. | Fenthrin 20% EC (w/v) (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 10.07.2003 | 02.05.2006 | Renewal / Revised | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 391 | Quality International Traders (Pvt.) Ltd.<br>9-Light Industrial Area, Model Town-B,<br>Bahawalpur. | Fenthrin 20% (w/v) EC (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 19.05.2003 | 03.05.2006 | Renewal / Revised | | |
| 392 | Essex Interprises, Karachi | Miyao 40% (w/v) WSC (Appendix-A) | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 09.06.2003 | 04.05.2006 | Renewal | | |
| 394 | Biochem Ltd. Kar. | Fenthrin 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 3/5/1997 | 13-3-97 | | | |
| 395 | Welgreen Chemical (Pvt.) Ltd.<br>202, Latif Plaza, 103 - Ferozpur Road,<br>Lahore. | Fenthrin 20% (w/w) EC (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 22-03-2001 | 02-05-2003 | Revised | | |
| 396 | Vital Chemical Corporation , Lahore | Sharon 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 6/5/1997 | 21-4-97 | | | |
| 397 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Fenthrin 20% (w/v) EC (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 07.06.2003 | 05.05.2006 | Renewal / Revised | | |
| 398 | United Technova Cham (Pvt.) Ltd.<br>702, Mashriq Center, Block -14,<br>Gulshan - e - Iqbal, Karachi. | Fenthrin 20% (w/v) EC (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 13.05.2003 | 02.05.2006 | Renewal / Revised | | |
| 399 | Universal Agro Chemical (Pvt.) Ltd.<br>S - 94, S. I. T. E., Karachi. | Fenthrin 20% (w/v) EC (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 6/5/1997 | 27-1-97 | | | |
| 400 | Farm Shield Pvt. Ltd. Lahore | Fenthrin 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 3/5/1997 | 13-3-97 | | | |
| 401 | Farmers Chemical Pvt., Ltd., Multan | Ningomithami 50% W/W EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre | I | 8/5/1997 | 24-4-97 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
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| | | | | Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | | | | | | |
| 402 | AG Services & Supplies, Karachi | Fenthrin 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 10/5/1997 | 3/5/1997 | | | |
| 403 | S. Essa, Karachi | Fenthrin 20% (w/v) EC (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 28.04.2003 | 02.05.2006 | Renewal / Revised | | |
| 404 | Warble (Pvt.) Ltd.<br>Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Fenthrin 20% (w/v) EC & 90% (w/w) Tech. (Appendix-A, B) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 10.07.2003 | 14.05.2006 | Renewal / Revised | | |
| 405 | Adieo Pvt., Ltd., Multan | Lianzi 10 EC 10% W/W) | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 15-5-97 | 25-4-97 | | II | Insect. |
| 406 | Ali Akbar Enterprises, Lahore. | Nighaban 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 23-5-97 | 5/5/1997 | | | |
| 408 | Essex Interprises<br>A-242, Block L, North Nazimabad, Karachi. | Chaser 60 SL (50% w/v) (Appendix-A) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 09.06.2003 | 22.05.2006 | Renewal | | |
| 409 | Pan Pacific (Pvt.) Ltd.<br>12 - M Block VI, P.E.C.H.S., Karachi. | Judos 4.5% w/w | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 30-5-97 | 16-9-96 | | II | Insect. |
| 410 | Pan Pacific Pvt. Ltd., Kar. | Digital 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 30-5-97 | 21-4-97 | | | |
| 411 | Grace Enterprises, Karachi | Chaser 60 SL (50% W/W) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 29-5-97 | 23-11-96 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 412 | R. B. Avari Enterprises (Pvt.) Ltd., Karachi. | Romer 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 2/6/1997 | 16-4-97 | | | |
| 413 | Granulars (Pvt.) Ltd. 1st Floor, Kassam Manzil, 1/29 Randal Raod, Karachi # 74400. | Granifan 35% W/W | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 2/6/1997 | 30-4-97 | | | |
| 414 | Granulars (Pvt.) Ltd. 1st Floor, Kassam Manzil, 1/29 Randal Raod, Karachi # 74400. | Fencidin 5% (w/v) EC (Appendix-A) | Esfenvalerate | Cotton Jassids, whitefly, pink, spotted and heliothis bollworms. | I | 07.06.2003 | 02.06.2006 | Renewal / Revised | | |
| 415 | Seatco (Pvt.) Ltd. 133-N, Block, Model Town, Lahore-54700 | Asiaquin 20% W/W EC | Quinalphos | Broers of Sugarcane, mites of apples, aphids of tobacco, cotton pink, spotted and Heliothis bollworms, Army worms and thrips, whitefly, aphids, jassids, stem borers of paddy fruitfly of mango and melon. | I | 3/6/1997 | 1/1/1997 | | | |
| 416 | Adieu Pvt., LTd., Multan | Chaser 60 SL 50% W/W | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 15-5-97 | 7/1/1997 | | | |
| 417 | SC Dyestuffs & Chemicals (Pvt.) Ltd. 2nd Floor, Palace Cinema Bldg.,Civil Lines, Karachi. | Prempt 20% (w/v) EC (Appendix-A) | Pyriproxyfen + Fenpropathrin | Cotton whitefly. | I | 26.05.2003 | 13.06.2006 | Renewal | III | Insect. |
| 418 | Radix Chemicals Pvt., ltd., Multan | Fenokill 20% W/W EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 16-6-97 | 2/10/1996 | | | |
| 420 | Commander Agro Pvt., Ltd., Multan | Endosulfan 35% W/V EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 17-6-97 | | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 421 | Cotton Leader Pvt., Ltd, Multan | Chaser (60 SL) 50% W/W | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 17-6-97 | 26-9-96 | | | |
| 422 | Agri Gold Pvt., Ltd., Bahawalpur | Sharfos 50% W/W EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 17-6-97 | 23-2-97 | | | |
| 423 | Syngenta Pakistan Limited<br>S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. | Aatrex 90% (w/w) WG (Appendix-A) | Atrazine | Weeds in maize, rice and Sugarcane. | H | 25.04.2003 | 15.06.206 | Renewal | III | Herb. |
| 425 | Cotton Leader Pvt., Ltd, Multan | Miyao 40% W/V WSC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 20-6-97 | 2/10/1996 | | | |
| 426 | Cotton Leader Pvt., Ltd, Multan | Fenokill 20% W/W EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 20-6-97 | 2/10/1996 | | | |
| 427 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Swat 50% WP W/V | Isoproturon | Weeds in Wheat. | H | 26-6-97 | 7/11/1996 | | | |
| 428 | Jash, Karachi | Bulletin 10% W/W EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 28-6-97 | 3/9/1996 | | II | Insect. |
| 430 | Cotton Leader Pvt., Ltd, Multan | Bulletin 10EC W/W EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 21-6-97 | 26-9-96 | | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 431 | Excellsior International, Lahore | Sinocidin 20% W/W EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 25-6-97 | 28-1-96 | | | |
| 432 | Crop Care Pvt., Ltd., Lahore | Xianfei 20% W/W) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 4/7/1997 | 12/2/1997 | | | |
| 433 | Jash, Karachi | Chaser 60% W/W SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 5/7/1997 | 7/4/1997 | | | |
| 435 | Granulars Pvt., Ltd., Karachi | Swat 50% W/W WP | Isoproturon | Weeds in Wheat. | H | 10/7/1997 | 19-4-95 | | | |
| 436 | SC Dyestuffs & Chemicals (Pvt.) Ltd., 2nd Floor, Palace Cinema Bldg., Civil Lines, Karachi. | Admiral 10% (w/v) EC | Pyriproxyfen | Cotton whitefly. | I | 30.07.2003 | 09.07.2006 | Renewal | III | Insect. |
| 438 | Radix Chemicals Pvt., ltd., Multan | Bulletin 10% w/w EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | | 12/7/1997 | 26-9-96 | | II | Insect. |
| 439 | Radix Chemicals Pvt., ltd., Multan | Chaser 60% W/W SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 12/7/1997 | 26-9-96 | | | |
| 440 | Nafees (Pvt.) Ltd.<br>18 - H, Vehari 61100. | Bulletin10 EC (w/w) | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 8/8/1997 | 23-2-97 | | II | Insect. |
| 441 | The Suggus Pvt., Ltd., Vehari | Global 50% W/W EC | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 15-8-97 | 20-5-97 | | | |
| 442 | Universal Agrochemical, Pvt LTd, Kar. | Ambassador 4% G | Dimehypo | Rice borers. | I | 16-8-97 | 16-4-97 | | | |
| 443 | Pak China Chemicals<br>1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Swat 50% SC (W/V) (Appendix-A) | Isoproturon | Weeds in Wheat. | H | 06.09.2003 | 15.09.2006 | Renewal | | |

## List of Companies Registration Form-17

| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 444 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground<br>(Ext.) Lahore Cantt. | Galaban 40% W/W EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | | 17-9-97 | 6/1/1997 | | II | Insect. |
| 445 | International Trade Centre<br>120 Liaquat Market, M.A. Jinnah Road,<br>Karachi 74000. | Kapomyl 20% EC (w/v) | Methomyl | Cotton Pink, spotted and Heliothis bollworms, Army worm, thrips, whitefly, aphids, jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphids. | I | 22.09.2003 | 15.09.2006 | Renewal / Revised | | |
| 446 | Global Agro Servoces Pvt., Ltd., Kar. | Smocidim 20 EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 25-4-97 | 13-6-96 | | | |
| 447 | Crop Care Pvt., Ltd., Lahore | Galaban 40% W/W EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 20-9-97 | 11/4/1997 | | II | Insect. |
| 448 | Pak China Chemicals<br>1 - km Bhoptian Chowk,<br>Defence Road off Raiwind Road,<br>Lahore. | Manthane 80% W/W WP | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre<br>Potato, Downy mildew, 600 gm/acre<br>Vegetable, Downy mildew, 800 gm/acre<br>Cucurbits, Downy mildew, 800 gm/acre | | 22-9-97 | 1/9/1997 | | | |
| 449 | Ali Akbar Enterprises, Lahore. | Sitara 25% W/W WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 22-9-97 | 19-1-97 | | III | Insect. |
| 450 | Shelter Sersvices, Vehari | Bulletin 10% EC W/W | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 22-9-97 | 24-11-96 | | II | Insect. |
| 451 | Welgreen Chemicals Pvt., Ltd,LHR | Welshen 2.5% W/V EC | Deltamethrin | Cotton Pink, Spotted and heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | I | 27-9-97 | 29-7-97 | | II | Insect. |
| 452 | Biochem LTd., Karachi | Dolomite | Mancozeb + Metalaxyl | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | | 2/10/1997 | 10/9/1997 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 453 | Pak China Chemicals<br>1 - km Bhoptian Chowk,<br>Defence Road off Raiwind Road,<br>Lahore. | Dolomite 580 WP | Mancozeb + Metalaxyl | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | | 4/10/1997 | 3/9/1997 | | III | Fung. |
| 454 | Vital Cemicals Corporation<br>18/ 3, Shah Arcade, Civic Center,<br>New Garden Town, Lahore. | Swat 50% W/W WP | Isoproturon | Weeds in Wheat. | H | 7/10/1997 | 9/12/1996 | | | |
| 455 | Rliance Chemical Pvt., LTd., Kar. | Swat | Isoproturon | Weeds in Wheat. | H | 7/10/1997 | 1/10/1996 | | | |
| 456 | Evergreen Pesticide, Lahore | Chifeng 60% W/V SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 27-9-97 | 18-3-96 | | | |
| 457 | International Trade Center, Kar. | Kapafuran | Carbofuran | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | I | 11/10/1997 | 27-3-97 | | Ib | Insect. |
| 458 | Welgreen Chemicals Pvt., Ltd, LHR | Amisulfan 35% W/W EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 10/10/1997 | 19-7-97 | | | |
| 459 | Ramson Int. Pvt., Ltd., Lahore | Swat 50 SC | Isoproturon | Weeds in Wheat. | H | 15-10-97 | 9/10/1997 | | | |
| 462 | Leader Agro Chemical, Bahawalpur | Chaser 60% SL (50% W/W) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 7/10/1997 | 15-1-97 | | | |
| 463 | FMC United, Lahore | Affenity | Carfentrazone-ethyl + Isoproturon | Broad leave weeds and grasses in wheat. | H | 3/11/1997 | 27-10-97 | | III | Herb. |
| 464 | Anwaar Agro Services, Peshawar | Hithion 45% W/W EC | Malathion | Cotton sucking pests. | | 17-10-97 | 30-12-96 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 465 | Agrar Pak. Pvt. Ltd., Lahore | Galaban 40% W/W EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 22-9-97 | 18-02-97 | | II | Insect. |
| 466 | Agrar Pak. Pvt. Ltd., Lahore | Miyao 40% W/V WSC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 22-9-97 | 29-01-97 | | | |
| 468 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Vesa Combi 50% W/V SC | Atrazine + Ametryn | Weeds in sugarcane. | H | 05.08.2003 | 12.11.2006 | Renewal | III | Herb. |
| 469 | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi-74400. | Pyrifos 40% W/W EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 13-11-97 | 15-5-97 | | II | Insect. |
| 470 | Bayer CropScience (Pvt.) Ltd. Plot NO. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Regent 50% SC (Appendix-A) | Fipronil | Plant hoppers, leaf folders and stem borers of Rice, Dimond back moth of Cruciferae vegetables. | F | 07.06.2003 | 21.11.2003 | Revised | II | Fung. |
| 471 | National Insecticide Co., Karachi | Sumik 20% EC W/V | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 24-11-97 | 29-2-96 | | | |
| 472 | Dupont, Karachi | Staple | Pyrothiobac Sodim Non Ionic Surfactant | Broad leaved weeds in cotton as a post emergence herbicide. | H | 25-11-97 | 2/9/1997 | | III | Herb. |
| 473 | United Distributors Pak. Ltd., Kar. | Dimezyl 40% W/V EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre | I | 21-11-97 | 15-4-96 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | | | | | | |
| 474 | ICI Pak, Ltd., Karachi | Duobrom P | Bromoxynil + Mencaprop | weeds in wheat. | H | 22-11-97 | 3/3/1997 | | II | Herb. |
| 475 | Biochem LTd., Karachi | Pacific 40% W/W EC | Dimethoate | Cotton, Jassids, 400 ml/acre<br>Cotton, Thrips, 400 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Tobacco, Aphids, 400 ml/acre<br>Oil seed, Aphids, 400 ml/acre<br>Sugarcane, Pyrilla, 400 ml/acre | I | 1/12/1997 | 29-3-97 | | | |
| 476 | National Pesticide Cor., Kar | Mactan 1.8% W/W EC | Abamectin | Cotton bollworms. | I | 2/12/1997 | 9/2/1997 | | III | Insect. |
| 477 | National Pesticide Cor., Kar | Driver 50% W/W WP | Pirimicarb | Aphids on wheat. | I | 1/12/1997 | 12/2/1997 | | | |
| 478 | National Pesticide Cor., Kar | Polytox 3% W/W EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 1/12/1997 | 19-7-97 | | II | Insect. |
| 479 | BASF Chemicals & Polymers Pakistan<br>(Pvt.) Ltd.<br>46 - A Block - 6 P.E.C.H.S.<br>Karachi 75400. | Urlac 500 g/l SC | Cyanazine | Weeds in Peas, Potatoes, Beans, Cotton, Wheat, Sugarcane, Maize, Barley, Rape and onions. | H | 1/12/1997 | 22-8-96 | | II | Herb. |
| 480 | Marvi Agrochemical Pvt. Ltd, Karachi | Topmet 70% W/W WP | Thiophanate Methyl | Seed dressing and Treatment of rice blast and powdery mildew of grapes. | F | 1/12/1997 | 24-7-97 | | | |
| 481 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground (Ext.)<br>Lahore Cantt. | Randos 40% W/W EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | I | 1/12/1997 | 27-10-97 | | | |
| 482 | Dada Jee Corporation, Lahore | Nestok 4.5% W/W EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 1/12/1997 | 8/11/1997 | | II | Insect. |
| 483 | National Insecticide Co., Karachi | Lianzi 60% w/w EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 1/12/1997 | 29-2-96 | | II | Insect. |
| 484 | Experts Agricare Int., Lahore | Miyao 40% w/w WSC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre | I | 1/12/1997 | 28-12-96 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | | | |
| 485 | Agricide Pvt., Ltd, Karachi | Oxicab 85% | Copper Oxychloride | Downy mildew of vegetable, cucumber melon and | F | 23-12-97 | 7/1/1996 | | III | Fung. |
| 488 | Dada Jee Corporation<br>H # 97, ST# 12 Cavalary Ground (Ext.),<br>Lahore Cantt. | Ninge 5% w/v EC | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 6/12/1997 | 1/9/1997 | | | |
| 489 | Biochem LTd., Karachi | Pyanchor | Pyribenzoxin | Weeds in rice. | H | 6/12/1997 | 4/6/1997 | | IV | Herb. |
| 490 | Eva International, Lahore | Fenthrin 20% W/W EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 8/12/1997 | 31-5-97 | | | |
| 491 | Khan Crop Care, Lahore | Michoson 48% w/w AS | Bentazone | weeds in rice, wheat and soyabeans. | H | 10/12/1997 | 26-3-97 | | III | Herb. |
| 492 | Welgreen Chemical (Pvt.) Ltd.<br>202, Latif Plaza, 103 - Ferozpur Road,<br>Lahore. | Pestidor 5% (w/w) EC (Appendix - A) | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 15-02-2001 | 09-12-2003 | Revised | | |
| 493 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground (Ext.)<br>Lahore Cantt. | Festidor 25% w/w WP | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 13-12-97 | 27-10-97 | | | |
| 494 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground (Ext.)<br>Lahore Cantt. | Furan 3% w/w | Carbofuran | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | I | 13-12-97 | 28-10-97 | | Ib | Insect. |
| 495 | Subzazar & Company, Karachi | Sinopathrin 20% EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 10/12/1997 | 7/10/1997 | | | |
| 496 | Zagro NPC (Pvt.) Ltd. (Formerly; National Pesticides Corporation (Pvt.) Ltd.) Plot No.59, Sector 24, Korangi Industrial Area, Karachi. | Tianning 20% (w/w) EC (Appendix-A) | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 02.06.2001 | 17-12-2003 | Renewal / Revised | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 497 | AgrEvo Pak. Karachi | Octave 50WP | Prochloraz Magnesium Chloride Complex | Mango anthracnose, collectotrichu spp; on strawberries and bulb diseases of mushrooms. | F | 18/12/97 | 5.9.97 | | III | Fung. |
| 498 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Tianing 20% (w/v) EC (Appendix-A) | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 07.06.2003 | 21.12.2003 | Revised | | |
| 499 | JK Pesticide, Faisalabad. | Fenthrin 20% w/w EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 26-12-97 | 12/7/1997 | | | |
| 500 | United Technova Cham (Pvt.) Ltd. 702, Mashriq Center, Block -14, Gulshan - e - Iqbal, Karachi. | Novozir MN 80% WP | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre Potato, Downy mildew, 600 gm/acre Vegetable, Downy mildew, 800 gm/acre Cucurbits, Downy mildew, 800 gm/acre | | 26-12-97 | 18-7-96 | | | |
| 501 | Experts Agricare International (Pvt.) Ltd. 51 - S - 78, Muslim Street-7, Islamabad Colony, Samanabad, Lahore. | Darofal 50% w/w WP | Carbendazim | Grape, Apple, Peas Powdery Mildew and sugarbeet Leaf spots. | F | 30-12-97 | 16-11-96 | | III | Fung. |
| 502 | Burhan Chemicals 35 -E Shah Ruken-e-Alam Colony, Multan. | Fenthrin 20% w/w EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 29-12-97 | 12/11/1997 | | | |
| 503 | Farm Shield, Lahore | Campbell's 58% (w/v) EC | Demeton S Methyl | Aphids on vegetalbe, apples, pears & sugarbeet. | I | 30-12-97 | 25-7-97 | | Ib | Insect. |
| 504 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Star 4.5% (w/w) EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 29-12-97 | 23-10-97 | | II | Insect. |
| 505 | Burhan Chemicals 35 -E Shah Ruken-e-Alam Colony, Multan. | Star (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 1/1/1998 | 1/10/1997 | | II | Insect. |
| 507 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Badal 25% (w/w) WP (Appendix-A) | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 15-02-2001 | 04-01-2004 | Revised | III | Insect. |
| 509 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Sentex 4.5% w/w EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 8/1/1998 | 7/10/1997 | | II | Insect. |
| 510 | R.K. Chemical, Lahre | Swat 75% WP | Isoproturon | Weeds in Wheat. | H | 8/1/1998 | 25-7-97 | | | |
| 511 | International Trade Centre 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Kapafos 40% w/v EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | I | 8/1/1998 | 19-3-97 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 512 | Farm Shield, Lahore | UPL 500g | Chlorium | Pre and post emergence weeds in wheat and barley. | H | 8/1/1998 | 25-7-97 | | | Herb. |
| 513 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Masco 40% EC (w/v) (Appendix-A) | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | I | 07.06.2003 | 09.01.2004 | Revised | | |
| 514 | Experts Agricare Int., Lahore | Masco40% w/w | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | I | 10/1/1998 | 21-1-97 | | | |
| 515 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Kissan 60% (w/v) SL (Appendix-A) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 28.06.2001 | 09-01-2004 | Renewal / Revised | | |
| 516 | JK Pesticide, Faisalabad. | Bulletin 10% EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 13-1-98 | 8/10/1997 | | II | Insect. |
| 518 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Masco 40% EC (w/v) (Appendix-A) | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | I | 04.02.2003 | 13.01.2004 | Revised | | |
| 519 | Experts Agricare Int., Lahore | Bulletin 10% EC (w/w) | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 19-12-97 | 6/6/1996 | | II | Insect. |
| 520 | RK Chemical, Lahore | Bulletin 10% (w/w) EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 15-1-98 | 25-7-97 | | II | Insect. |
| 521 | Farm Shield, Lahore | Mencozeb 80% W/W WP | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre<br>Potato, Downy mildew, 600 gm/acre<br>Vegetable, Downy mildew, 800 gm/acre<br>Cucurbits, Downy mildew, 800 gm/acre | | 16-1-98 | 28-12-96 | | III | Fung. |
| 522 | Pak China Chemicals H # 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Sinopathrin 20% (w/w) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 17-1-98 | 15-9-97 | | | |
| 523 | Experts Agricare Int., Lahore | Galaban 40% w/w EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 20-1-98 | 25-7-96 | | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 524 | JK Pesticide, Faisalabad. | Lianzi10% EC w/w | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 20-1-98 | 20-12-97 | | II | Insect. |
| 525 | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28,Abdullah Haroon Road, Karachi-74400. | Akofol 50 WP | Folpet | Fungi in the culture of cherries, currants and strawberries. | | 20-1-98 | 26-7-97 | | III | Fung. |
| 526 | National Pesticide Cor., Kar | Sap-T-Oil 80% W/W | Paraffinic Petroleum Oil | Citrus leafminers and scales; Grapes scales; Pome & Stone fruits scales and mites; Banana scales, and Mango scales. | I | 21-1-98 | 26-9-95 | | | |
| 527 | International Trade Centre 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | LI 35% (w/w) EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 22-1-98 | 4/4/1997 | | | |
| 530 | Reliance Chemical, Karachi | Titophos 40 EC W/W | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 22-1-98 | 20-6-96 | | | |
| 531 | Reliance Chemicals (Pvt.) Ltd. Lakson Square, Building No. 2, Sarwar Shaheed Road, Karachi. | Endosulfan 35 EC (w/w) EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 22-1-98 | 24-9-96 | | | |
| 532 | Balochistan Zari Markaz, Quetta | Galaban 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 2/2/1998 | 9/9/1997 | | II | Insect. |

## List of Companies Registration Form-17

| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 533 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Galaban 40% (w/v) EC (Appendix-A) | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 04.02.2003 | 01.02.2004 | Revised | II | Insect. |
| 534 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Swat 50 WP | Isoproturon | Weeds in Wheat. | H | 17-1-98 | 27-10-97 | | | |
| 535 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Galaban 40% w/w EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 3/2/1998 | 26-2-97 | | II | Insect. |
| 536 | United Technova Cham (Pvt.) Ltd. 702, Mashriq Center, Block -14, Gulshan - e - Iqbal, Karachi. | Ningo 5% (w/v) EC (Appendix-A) | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 04.02.203 | 07.01.2004 | Revised | | |
| 537 | Seatco (Pvt.) Ltd. 133-N, Block, Model Town, Lahore-54700 | Pestidor 25 WP (25% w/w) | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 20-1-98 | 18-12-97 | | | |
| 538 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Timyl 20% (w/w) EC | Methomyl | Cotton Pink, spotted and Heliothis bollworms, Army worm, thrips, whitefly, aphids, jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphids. | I | 22-1-98 | 12/5/1996 | | | |
| 539 | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28, Abdullah Haroon Road, Karachi-74400. | Akomyl 20% (w/v) LS | Methomyl | Cotton Pink, spotted and Heliothis bollworms, Army worm, thrips, whitefly, aphids, jassids and tobacco aphids, bud moth root nematodes and whitefly, cabbage worm and peach black aphids. | I | 9/2/1998 | 26-7-97 | | | |
| 540 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Star 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 12/2/1998 | 6/1/1998 | | II | Insect. |
| 541 | Balochistan Zari Markaz, Quetta | Tianninog 0% (w/w) EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 14-2-98 | 9/9/1997 | | | |
| 542 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Sactar 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre | I | 14-2-98 | 28-1-98 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | | | | | | |
| 543 | Jash, Karachi | Masco 40 EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 14-2-98 | 2/5/1997 | | | |
| 544 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Meilian 20 EC (w/w) | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 23-2-98 | 29-11-97 | | | |
| 545 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Star 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 24-2-98 | 1/1/1998 | | II | Insect. |
| 547 | Marvi Agrochem (Pvt.) Ltd.<br>12 - M Block - 6, P.E.C.H.S., Karachi. | Gxizeb 8% - 56% (w/w) WP | Oxadixyl + Mancozeb | Late blight of potato, downy mildew on vegetalbes, qucurbits and grapes. | F | 24-2-98 | 11/7/1997 | | III | Fung. |
| 548 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Sactar 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 24-2-98 | 21-1-98 | | | |
| 549 | Pan Pacific (Pvt.) Ltd.<br>12 - M, Block - 6, P.E.C.H.S., Karachi. | Procuron 40% (w/w) EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 25-2-98 | 30-6-97 | | | |
| 550 | Jash, Karachi | Galaban 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 23-2-98 | 19-2-97 | | II | Insect. |
| 551 | Seatco (Pvt.) Ltd.<br>133-N, Block, Model Town, Lahore-54700 | Galaban 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 25-2-98 | 20-12-97 | | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 552 | Experts Agricare Int., Lahore | Talpha 4.5% w/w EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 27-2-98 | 5/6/1996 | | II | Insect. |
| 553 | Welgreen Chemicals Pvt., Ltd, LHR | Alphamethrin 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 26-2-98 | 24-11-97 | | II | Insect. |
| 554 | Burhan Chemicals 35 -E Shah Ruken-e-Alam Colony, Multan. | Gacaban 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 28-2-98 | 14-10-97 | | II | Insect. |
| 555 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Eagle 10% (w/w) EC (App.-A) & 91% (w/w) Tech. (App.-B) | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 30.04.2001 | 03.03.2004 | Renewal | II | Insect. |
| 556 | Jugnu Enterprises Room No. 4, 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Star 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 5/3/1998 | 20-1-98 | | II | Insect. |
| 557 | Jugnu Enterprises Room No. 4, 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Shangnong 60% SL (w/v) | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | I | 5/3/1998 | 9/2/1998 | | | |
| 558 | Jugnu Enterprises Room No. 4, 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Lianzi 10% (w/w) EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 5/3/1998 | 8/1/1998 | | II | Insect. |
| 559 | Jugnu Engerprises, Karachi | Bulletin 10% (w/w) EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 5/3/1998 | 8/1/1998 | | II | Insect. |
| 560 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Alphafos 5% EC (w/w) | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 4/3/1998 | 17-1-98 | | II | Insect. |
| 561 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Viga 4.5% (w/w) (Appendix-A) | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 17.02.2001 | 05.03.2004 | Revised | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 562 | Warble (Pvt.) Ltd.<br>Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Jumbo 4.5% EC (w/w) | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 6/3/1998 | 24-2-98 | | II | Insect. |
| 564 | Vital Chemical Corp, Lahore | Vitalchlor 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 7/3/1998 | 19-2-98 | | II | Insect. |
| 565 | Crop Care Pvt., Ltd., Lahore | Star 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 7/3/1998 | 27-1-98 | | II | Insect. |
| 566 | Solex Chemicals (Pvt.) Ltd.<br>617-A Shah Rukn-e-Alam Colony, Multan. | Star 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 7/3/1998 | 6/1/1998 | | II | Insect. |
| 567 | Nafees (Pvt.) Ltd.<br>18 - H, Vehari 61100. | Sactar 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 7/3/1998 | 3/3/1998 | | | |
| 568 | Nafees (Pvt.) Ltd.<br>18 - H, Vehari 61100. | Promo 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 7/3/1998 | 21-1-98 | | III | Insect. |
| 569 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Talpha 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 7/3/1998 | 31-12-97 | | II | Insect. |
| 570 | Agri Gold (Pvt.) Ltd.<br>232/5, Block-VI, Model Town-B, Bahawalpur. | Star 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 7/3/1998 | 08.01.98 | | II | Insect. |
| 571 | National Insecticides Co. (Pvt.) Ltd. Jaffer Chambers, 28,Abdullah Haroon Road, Karachi-74400. | Cyren 4E (480 G/L) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 7/3/1998 | 27-6-97 | | II | Insect. |
| 572 | Commander Agro (Pvt.) Ltd.<br>75-Askaria Colony,Shershah Road, Multan Cantt. | Agri Corn 40% w/v WSC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre | I | 7/3/1998 | 11/2/1998 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | | | | | |
| 574 | Pace Pasticide (Pvt.) Ltd.<br>406/2, Masoom Shah Road,<br>Multan. | Chaser 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 9/3/1998 | 23-2-98 | | | |
| 575 | Marvi Agrochem (Pvt.) Ltd.<br>12 - M Block - 6, P.E.C.H.S.,<br>Karachi. | Imicon 25% (w/w) WP | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 9/3/1998 | 28-7-97 | | | |
| 576 | Commander Agro (Pvt.) Ltd.<br>75-Askaria Colony,Shershah Road,<br>Multan Cantt. | Zefran 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 7/3/1998 | 28-1-98 | | III | Insect. |
| 577 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground<br>(Ext.) Lahore Cantt. | Durakron 40% w/w EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 9/3/1998 | 12/11/1997 | | | |
| 578 | Agri Gold (Pvt.) Ltd.<br>232/5, Block-VI, Model Town-B,<br>Bahawalpur. | Galaban 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 9/3/1998 | 8/1/1998 | | II | Insect. |
| 579 | Pak China Chemicals<br>1 - km Bhoptian Chowk,<br>Defence Road off Raiwind Road,<br>Lahore. | Atratox 38% (w/v) SC | Atrazine | Weeds in maize, rice and Sugarcane. | H | 9/3/1998 | 15-1-98 | | III | Herb. |
| 580 | Solex Chemicals (Pvt.) Ltd.<br>Solex House 768 Mahmoodabad<br>Khanewal Road, Multan. | Meilian 20% (w/v) EC (Appendix-A) | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 19.05.2003 | 09.03.2004 | Revised | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 581 | Solex Chemicals (Pvt.) Ltd. Solex House 768 Mahmoodabad Khanewal Road, Multan. | Lianzi 10% (w/v) EC (Appendix-A) | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 19.05.2003 | 09.03.2004 | Revised | II | Insect. |
| 582 | Solex Chemicals (Pvt.) Ltd. Solex House 768 Mahmoodabad Khanewal Road, Multan. | Sactar 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | I | 10/3/1998 | 6/2/1998 | | | |
| 583 | Solex Chemicals (Pvt.) Ltd. Solex House 768 Mahmoodabad Khanewal Road, Multan. | Chaser 60 SL | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | I | 10/3/1998 | 6/2/1998 | | | |
| 584 | Jugnu Engerprises, Karachi | Xianfei 20% (w/w) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 10/3/1998 | 8/1/1998 | | | |
| 585 | Mak Agro Checmials (Pvt.) LTd. Suite #805, 8th Floor, Land Mark Plaza, 5/6 Jail Road, Lahore. | Meilian 20% (w/w) EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 11/3/1998 | 10/3/1998 | | | |
| 586 | Mak Agrochemical, Lahore | Jumbo 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 11/3/1998 | 10/3/1998 | | II | Insect. |
| 587 | Mak Agro Checmials (Pvt.) LTd. Suite #805, 8th Floor, Land Mark Plaza, 5/6 Jail Road, Lahore. | Chaser 60% (W/W) SL | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre Potato, Aphids, 400 ml/acre Okra, Jassids, 400 ml/acre Okra, Aphids, 400 ml/acre | I | 11/3/1998 | 10/3/1998 | | | |
| 588 | Seatco (Pvt.) Ltd. 133-N, Block, Model Town, Lahore-54700 | Chaser 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre Cotton, Thrips, 500 ml/acre Cotton, Aphids, 500 ml/acre Potato, Jassids, 400 ml/acre | I | 10/3/1998 | 24-1-98 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | | | | | | |
| 589 | Pace Pesticide, Multan | Meyao 40% (w/v) WSC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 10/3/1998 | 27-2-98 | | | |
| 590 | Pace Pasticide (Pvt.) Ltd.<br>406/2, Masoom Shah Road,<br>Multan. | Rugao 20% (w/v) EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 10/3/1998 | 27-2-98 | | | |
| 591 | Seatco (Pvt.) Ltd.<br>133-N, Block, Model Town,<br>Lahore-54700 | Promo 25% (w/w) EC | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 13-3-98 | 4/2/1998 | | III | Insect. |
| 592 | Universal Agro Chemicals (Pvt) Ltd.<br>E/ 12, S.I.T.E.<br>Karachi. | Wander 2.5% (w/v) EC | Lambda Cyholothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 14-3-98 | 24-12-97 | | | |
| 593 | Kissan Supplies Services (Pvt) Ltd.<br>645 - C, Faisal Town, Lahore. | Pestidor 25% (w/w) WP | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 21.07.2003 | 17.03.2004 | Revised | | |
| 594 | Jash, Karachi | Swat 50% (w/w) WP | Isoproturon | Weeds in Wheat. | H | 24-2-98 | 25-7-97 | | | |
| 595 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area,<br>Model Town-B, Bahawalpur. | Winner 40% (w/v) EC (Appendix-A) | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 03.07.2003 | 31.12.2003 | Revised | | |
| 596 | Seatco (Pvt.) Ltd.<br>133-N, Block, Model Town,<br>Lahore-54700 | Winner 40% (w/v) EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 14.07.2003 | 31.12.203 | Revised | | |
| 597 | Anwaar Agro Services<br>Street-4, Hissain Abad, Opp.<br>Gulbahar, Peshawar. | Pyrida 15% w/w EC | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 19-3-98 | 16-1-96 | | III | Insect. |

## List of Companies Registration Form-17

| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 598 | International Trade Centre<br>120 Liaquat Market, M.A. Jinnah Road,<br>Karachi 74000. | Vision 50 EC | Dichlorovos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>**Mango, Hoppers, 300 ml/100 lit water**<br>**Mango, Mealybugs, 300 ml/100 lit water**<br>Citrus, Psyilla, 300 ml/100 lit water<br>Citrus, Butterfly, 300 ml/100 lit water<br>Citrus, Blackfly, 300 ml/100 lit water<br>Tobbaco, Aphids, 300 ml/acre<br>Okra, Jassids, 300 ml/acre<br>Okra, Aphids, 300 ml/acre<br>Orchards, Mealybugs, 300 ml/100 lit water<br>Orchards, Scales, 300 ml/100 lit water<br>Peaches, Aphids, 300 ml/100 lit water | I | 21-03-98 | 27-1-98 | | Ib | Insect. |
| 599 | Dawn Agro Services (Pvt.) Ltd.<br>16-B, Grain Market,<br>Sadiqabad. | Star 4.5% W/W EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 20-3-98 | 16-1-98 | | II | Insect. |
| 600 | Dawn Agro Services (Pvt.) Ltd.<br>16-B, Grain Market,<br>Sadiqabad. | Sactar 60 w/v SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 20-3-98 | 16-1-98 | | | |
| 601 | Radix Chemicals (Pvt.) Ltd.<br>6 - A, Industrial Estate,<br>Multan. | Pestidor 25% w/w WP | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 20-3-98 | 27-2-98 | | | |
| 602 | Biochem, Karachi | Dial 50 EC | Phenthoate | Paddy stem borers. | I | 21-3-98 | 8/5/1997 | | II | Insect. |
| 603 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Chaser (60 SL) 50% w/w | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 20-3-98 | 23-2-98 | | | |
| 604 | Pescon Pvt., Ltd., Lahore | Redomy 80% (w/w) WP | Mancozeb | Potato, Early blight & Late blight, 600 gm/acre | | 20-3-98 | 1/1/1998 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Potato, Downy mildew, 600 gm/acre<br>Vegetable, Downy mildew, 800 gm/acre<br>Cucurbits, Downy mildew, 800 gm/acre | | | | | | |
| 605 | Al - Shafi Sardar & Sons (Pvt.) Ltd.<br>19 Bridge Colony, Abid Majeed Road, Lahore. | Sactar 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 20-3-98 | 19-2-98 | | | |
| 606 | Conco Internatioanl, Lahore | Sactar 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 20-3-98 | 19-2-98 | | | |
| 607 | Agro Leads, Multan | Pestidor 25% (w/w) WP | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 20-3-98 | 19-2-98 | | | |
| 608 | Expert Agricare International, Lahore | Award 48% EC w/v | Trifluralin | Annual grasses and broad leaves weeds in cotton and potato. | H | 25-3-98 | 9/2/1998 | | III | Herb. |
| 609 | Biochem, Karachi | Chaser 60% (w/v) SL (50% w/w) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 25-3-98 | 30-10-97 | | | |
| 610 | United Distributor Pak, Karachi | Bronophar E 240 g/p EC | Bromoxynil Acid | Wheeds in wheat. | H | 25-3-98 | 30-11-96 | | II | Herb. |
| 611 | Expert Agricare International, Lahore | Winfudan 3% w/wg | Carbofuran | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | I | 26-3-98 | 6/10/1996 | | Ib | Insect. |
| 612 | Adieu Pvt., Ltd., Multan | Jinoue 4.5% (w/w) EC | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 26-3-98 | 1/12/1997 | | II | Insect. |
| 613 | Adieu Pvt., Ltd., Multan | Seven Star 40% (w/w) EC | Profenofos | Cotton Jassids and mites, potato jassids and chilli bud mites. | | 26-3-98 | 31-12-97 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 614 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Sumi | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | | 26-3-98 | 19-3-98 | | II | Insect. |
| 615 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Unihypo 3.6% G | Monomehypo | Rice borers, rice leaf roller and sugarcane borers. | I | 25-3-98 | 2/10/1997 | | | |
| 616 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Chlorifos 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 25-3-98 | 31-12-97 | | II | Insect. |
| 617 | Agri Gold (Pvt.) Ltd. 232/5, Block-VI, Model Town-B, Bahawalpur. | Promo 25% w/w WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 25-3-98 | 4/2/1998 | | III | Insect. |
| 618 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Global 60% SL (600 g/l) (App.-A) & 70-75% (w/w) Tech. (App.-B) | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 31.03.2001 | 27-03-2004 | Revised | | |
| 619 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Current 15% (w/w) EC | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 25-3-98 | 16-12-96 | | | |
| 620 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Dimextra 38% | Atrazine | Weeds in maize, rice and Sugarcane. | H | 25-3-98 | 14-2-98 | | III | Herb. |
| 621 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Buta 60% (w/w) EC (Appendix-A) | Butachlor | Weeds in rice. | H | 14.05.2003 | 24.03.2004 | Revised | III | Herb. |
| 622 | Ali Akbar Enterprises 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Miechong Ling 1.8% w/w EC | Abamectin | Cotton bollworms. | I | 25-3-98 | 20-2-98 | | III | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 623 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Vital 1.8% w/w EC | Abamectin | Cotton bollworms. | I | 25-3-98 | 23-2-98 | | III | Insect. |
| 624 | Dada Jee Corporation, Lahore | Star 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 25-3-98 | 6/3/1998 | | II | Insect. |
| 625 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Meilian 20% (w/w) EC (App-A) & 90 % (w/w) Tech. (App-B) | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 08.05.2001 | 27-03-2004 | Renewal / Revised | | |
| 626 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Galaban 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 28-03-98 | 27-3-98 | | II | Insect. |
| 627 | BASF Chemicals & Polymers Pakistan (Pvt.) Ltd. 46 - A Block - 6 P.E.C.H.S. Karachi 75400. | Assert 300 G/L SG | Imazamethabenz | Wheat - grasses & Barley - grasses. | H | 28-03-98 | 21-1-98 | | III | Herb. |
| 628 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Pestidor 25 WP (25% w/w) | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 25-3-98 | 17-12-97 | | | |
| 629 | Burhan Chemicals 35 -E Shah Ruken-e-Alam Colony, Multan. | Meilian 20 EC (w/w) | Fenvalerate | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 25-3-98 | 14-2-98 | | | |
| 630 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Nongyou 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 25-3-98 | 18-2-98 | | II | Insect. |
| 631 | Burhan Chemicals 35 -E Shah Ruken-e-Alam Colony, Multan. | Promo 25% w/w WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 25-3-98 | 23-2-98 | | III | Insect. |
| 632 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Zefran 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 25-3-98 | 3/3/1998 | | III | Insect. |
| 633 | Vital Chemical Corp, Lahore | Jumbo 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 30-3-98 | 5/3/1998 | | II | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 634 | S. Essa<br>120 Liaquat Market, M.A. Jinnah Road,<br>Karachi 74000. | Superxyl 10% w/w + 48% w/w WP | Mancozeb + Metalaxyl | Cucumber downy mildew, chillis collar rot, early and late blight of potatoes and early blight of tomatoes and Downy mildew of grapes. | | 30-3-98 | 18-12-97 | | III | Fung. |
| 635 | Marvi Agrochem (Pvt.) Ltd.<br>12 - M Block - 6, P.E.C.H.S.,<br>Karachi. | Agroron 50% WP | Bensulfuran Methyl | Weeds in rice. | H | 25-3-98 | 21-11-96 | | III | Herb. |
| 636 | Dynamic Agrilinks, Multan | Miyao 40% (w/v) WSC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 30-3-98 | 26-2-98 | | Ib | Insect. |
| 637 | Dehkan International, Lahore | Hithion 45% (w/w) EC | Malathion | Cotton sucking pests. | | 25-3-98 | 23-2-98 | | | |
| 638 | Dehkan International, Lahore | Star 4.5% w/w EC | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 25-3-98 | 23-2-98 | | II | Insect. |
| 639 | Eva International Pvt., LTd., Lahore | Sactar (w/v) 60% SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 25-3-98 | 24-2-98 | | | |
| 640 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Gaonong 2.5 EC (w/v) | Lambola Cyhalothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 1/4/1998 | 3/3/1998 | | II | Insect. |
| 641 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28,Abdullah Haroon Road, Karachi-74400. | Freno 50% (w/v) | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 1/4/1998 | 7/1/1998 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 642 | FMC United, Lahore | Platform | Carfentrazone Ethyl | Galium aparine, Veronica spp., Sinapis Arvensis, Senecio vulgaris, Chenopodium spp., Convolvulus arvensis, Cirsium arvensis, Melilotus indica, Rumus crispus, Medicago spp., Aphanes arvensis, Brassica Kaber, Sonchus spp., in wheat, Amaranthus spp., Datura spp., Solanun spp., Trianthema portulacastrum, Chenopodium spp., Convolvulus arvensis Rumex dentatus, Ipomoea spp., in maize. | H | 2/4/1998 | 18-3-98 | | III | Herb. |
| 643 | Farmers Chemical Pvt., Ltd., Multan | Star 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 28-3-98 | 21-1-98 | | II | Insect. |
| 644 | Farmers Chemical Pvt., Ltd., Multan | Sactar 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 26-3-98 | 21-1-98 | | | |
| 645 | Eva International Pvt., LTd., Lahore | Galaban 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 1/4/1998 | 31-7-97 | | II | Insect. |
| 646 | Pace Pesticide, Multan | Isocarbothrin 20% (w/w) EC | Isocarbophos + Fenpropathrin | Cotton insect pest complex and mites. | I | 1/4/1998 | 27-2-98 | | II | Insect. |
| 647 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Amisulfan 35% (w/w) EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 1/4/1998 | 4/10/1997 | | | |
| 648 | Ali Akbar Enterprises<br>H# 97, ST# 12 Cavalary Ground (Ext.), Lahore Cantt. | Fencidor 70% (w/w) WS | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 1/4/1998 | 3/3/1998 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 649 | Pak China Chemicals<br>H # 97, ST# 12 Cavalary Ground (Ext.)<br>Lahore Cantt. | Didiwei 50% (w/w) EC | Dichlorovos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Mango, Hoppers, 300 ml/100 lit water<br>Mango, Mealybugs, 300 ml/100 lit water<br>Citrus, Psyilla, 300 ml/100 lit water<br>Citrus, Butterfly, 300 ml/100 lit water<br>Citrus, Blackfly, 300 ml/100 lit water<br>Tobbaco, Aphids, 300 ml/acre<br>Okra, Jassids, 300 ml/acre<br>Okra, Aphids, 300 ml/acre<br>Orchards, Mealybugs, 300 ml/100 lit water<br>Orchards, Scales, 300 ml/100 lit water<br>Peaches, Aphids, 300 ml/100 lit water | I | 31-3-98 | 2/10/1997 | | Ib | Insect. |
| 650 | Farmers Chemical Pvt., Ltd., Multan | Nongyou 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 25-3-98 | 10/2/1998 | | II | Insect. |
| 651 | UM Enterprises, Karachi | Tianyu 20% w/w EC | Triazophos | Rice stem borers and leaf rollers. | I | 30-3-98 | 18-10-97 | | Ib | Insect. |
| 652 | UM Enterprises, Karachi | Sactar 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 25-3-98 | 11/2/1998 | | | |
| 653 | Ramson Int., Lahore | Gaonong 2.5% E (w/v) | Lambda Cyhalothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 2/4/1998 | 14-3-98 | | | |
| 654 | Public Distributor, Multan | Hithion 45% (w/w) EC | Malathion | Cotton sucking pests. | | 25-3-98 | 9/3/1998 | | | |
| 655 | Al - Shafi Sardar & Sons (Pvt.) Ltd.<br>19 Bridge Colony, Abid Majeed Road, Lahore. | Stark 4.5% w/w EC | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 25-3-98 | 19-2-98 | | II | Insect. |
| 656 | Satoz Agri, Vehari | Tianning 20% (w/w) EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 30-3-98 | 7/5/1997 | | | |
| 657 | Agrolet Chemicals Industries<br>711/ X, D.H.A., Lahore Cantt. | Pesidor 25% (w/w) WP | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 25-3-98 | 10/2/1998 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 658 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Aleatol 4.5% (w/w) EC | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 25-3-98 | 10/2/1998 | | II | Insect. |
| 659 | Seatco (Pvt.) Ltd. 133-N, Block, Model Town, Lahore-54700 | Gaonong 2.5% EC (w/w) | Lambda Cyhalothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 2/4/1998 | 17-1-98 | | | |
| 660 | Seatco (Pvt.) Ltd. 133-N, Block, Model Town, Lahore-54700 | Nongyou 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 25-3-98 | 31-12-97 | | II | Insect. |
| 661 | Ramson Int., Lahore | Bulletin 10% (w/w) EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 6/4/1998 | 5/3/1998 | | II | Insect. |
| 662 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Kurifast 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 11/4/1998 | 9/1/1998 | | II | Insect. |
| 663 | Farmers Equity (Pvt.) Ltd. 3704 / 70 Hassan Parwana Colony, Multan. | Fengshan 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 16-4-98 | 5/3/1998 | | III | Insect. |
| 664 | Farmers Equity (Pvt.) Ltd. 3704 / 70 Hassan Parwana Colony, Multan. | Pestox 3% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 16-4-98 | 5/3/1998 | | II | Insect. |
| 665 | Vital Cemicals Corporation 18/ 3, Shah Arcade, Civic Center, New Garden Town, Lahore. | Chaser 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 16-4-98 | 13-4-98 | | | |
| 667 | Pan Pacific (Pvt.) Ltd. 12 - M, Block - 6, P.E.C.H.S., Karachi. | Pride 25 WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 18-4-98 | 11/4/1998 | | III | Insect. |
| 668 | Grace Enterprises, Karachi | Bulletin 10% (w/w) EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 18-4-98 | 23-11-96 | | II | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 669 | Edgro (Pvt.) Ltd.<br>Marine Trade Centre, BC - 3,<br>Kehkashan,<br>Block - 9, Clifton,<br>Karachi - 75600. | Edbuta 60% EC | Butachlor | Weeds in rice. | H | 18-4-98 | 27-9-97 | | III | Herb. |
| 670 | Pan Pacific (Pvt.) Ltd.<br>12 - M Block VI, P.E.C.H.S.,<br>Karachi. | Kadan | Cartap Hydrochloride | Rice Stem Borers. | I | 20-4-98 | 24-3-96 | | II | Insect. |
| 671 | Pan Pacific (Pvt.) Ltd.<br>12 - M, Block - 6, P.E.C.H.S.,<br>Karachi. | Aphik 25% w/w EC | Quinalphos | Broers of Sugarcane, mites of apples, aphids of tobacco, cotton pink, spotted and Heliothis bollworms, Army worms and thrips, whitefly, aphids, jassids, stem borers of paddy fruitfly of mango and melon. | I | 20-4-98 | 8/9/1996 | | | |
| 672 | Pan Pacific (Pvt.) Ltd.<br>12 - M, Block - 6, P.E.C.H.S.,<br>Karachi. | Granong 2.5% (w/v) EC | Lambda Cyhalothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 20-4-98 | 25-3-98 | | | |
| 673 | Arysta Agro Pakistan (Pvt.) Ltd.<br>Office No.213, Second Floor,<br>Business<br>Avenue, 26-A, Block-6, P.E.C.H.S.<br>Karachi. | Danitol 30% (w/w) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 21-4-98 | 24-9-97 | | | |
| 674 | Crop Care Pvt., LTd, Lahore | Maso 40% EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 24-4-98 | 19-3-98 | | | |
| 675 | Warble (Pvt.) Ltd.<br>Suit No. 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Gaonong 2.5% (w/v) EC (App.-A) & 95% (w/w) Tech. (App.-B) | Lambda Cythlothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 30.06.2001 | 20-04-2004 | Revised | | |
| 676 | Mak Agro Checmials (Pvt.) LTd.<br>Suite #805, 8th Floor,<br>Land Mark Plaza,<br>5/6 Jail Road, Lahore. | Masco 40% w/v EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | I | 25-4-98 | 23-4-98 | | | |
| 677 | Mak Agro Checmials (Pvt.) LTd.<br>Suite #805, 8th Floor,<br>Land Mark Plaza,<br>5/6 Jail Road, Lahore. | Promo 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 25-4-98 | 23-4-98 | | III | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 678 | Burhan Chemicals<br>35 -E Shah Ruken-e-Alam Colony,<br>Multan. | Bulletin 10% (w/w) EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 16-4-98 | 5/3/1998 | | II | Insect. |
| 679 | Quality International<br>Traders (Pvt.) Ltd.<br>9-Light Industrial Area,<br>Model Town-B,<br>Bahawalpur. | Buprfos 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 27-4-98 | 10/3/1998 | | | |
| 680 | Quality International Traders (Pvt.)<br>Ltd.<br>9-Light Industrial Area, Model Town-<br>B,<br>Bahawalpur. | Supercidin 5% (w/w) EC | Esfenvalerate | Cotton Jassids, whitefly, pink, spotted and heliothis bollworms. | I | 27-4-98 | 20-1-98 | | | |
| 681 | Agri Gold (Pvt.) Ltd.<br>232/5, Block-VI, Model Town-B,<br>Bahawalpur. | Tainning 20% (w/w) EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 28-4-98 | 20-3-96 | | | |
| 682 | Agri Gold (Pvt.) Ltd.<br>232/5, Block-VI, Model Town-B,<br>Bahawalpur. | Sactar 60% SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 28-4-98 | 25-3-98 | | | |
| 683 | Edgro (Pvt.) Ltd.<br>Marine Trade Centre, BC - 3,<br>Kehkashan,<br>Block - 9, Clifton,<br>Karachi - 75600. | Admire 40 EC | Acephate | Cotton Pink, Spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids. | | 24-4-98 | 22-3-97 | | | |
| 684 | Edgro (Pvt.) Ltd.<br>Marine Trade Centre, BC - 3,<br>Kehkashan, Block - 9, Clifton,<br>Karachi - 75600. | Concord 10% EC (w/v) & 95% (w/w) Tech. Min. (Appendix-A, B) | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 10.07.2003 | 27.04.2004 | Revised | | |
| 685 | Edgro (Pvt.) Ltd.<br>Marine Trade Centre, BC - 3,<br>Kehkashan, Block - 9, Clifton,<br>Karachi - 75600. | Simba 5% EC (w/w) | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 25-4-98 | 5/9/1997 | | II | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 686 | Sabzazar & Co. (Pvt.) Ltd.<br>Wazir Mansion, Railway Station,<br>Mauripur Road, Daryabad,<br>Karachi. | Amisulfan 35% (w/w) EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 24-4-98 | 28-10-97 | | | |
| 687 | Jugnu Enterprises<br>Room No. 4, 2nd Floor, Arkay Square,<br>Extention, Shahrah-e-Liaquat,<br>Karachi-74000. | Titophos 40% EC | Monocrotophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Pink Bollworm, 1000 ml/acre<br>Cotton, Spotted Bollworm, 1000 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Whitefly, 400 ml/acre<br>Brinjal, Jassids & Whitefly, 400 ml/acre<br>Onion, Thrips, 400 ml/acre<br>Maize, Shootfly, 500 ml/acre<br>Maize, Borers, 500 ml/acre<br>Rice, Borers, 500 ml/acre<br>Rice, Leaffolder, 500 ml/acre | I | 25-4-98 | 8/1/1998 | | | |
| 688 | The Saggus (Pvt.) Ltd.<br>7 - B, Shadman-II,<br>Lahore. | Masco 40% (w/w) EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 30-4-98 | 16-4-98 | | | |
| 689 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Amisulfan 35% (w/w) EC | Endosulfan | Cotton, Jassids, 800 ml/acre<br>Cotton, Whitefly, 800 ml/acre<br>Cotton, Thrips, 800 ml/acre<br>Cotton, Pink Bollworm, 1250 ml/acre<br>Cotton, Spotted Bollworm, 1250 ml/acre<br>Cotton, Heliothis, 1250 ml/acre | I | 30-4-98 | 18-2-98 | | | |
| 690 | Warble (Pvt.) Ltd.<br>Suit No. 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Warchen 4.5% (w/w) EC (Appendix-A) | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 05.05.2001 | 01.05.2004 | Renewal / Revised | II | Insect. |
| 691 | Welcon Chemicals (Pvt.) Ltd.<br>Suite # 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Welchlor 60% (w/v) EC (Appendix - A) | Butachlor | Weeds in rice. | H | 07.06.2001 | 01-05-2004 | Revised | III | Herb. |
| 692 | Dehkan International, Lahore | Mielinghuang 20% w/w EC | Phoxim + Lambda Cyhalothrin | Cotton bollworms and Diamond back moth on Cabbage. | I | 2/5/1998 | 7/2/1998 | | | |
| 693 | Welcon Chemicals, Pvt., Ltd., Lahore | Jinque 5% (w/w) EC | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 2/5/1998 | 16-4-98 | | II | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 694 | Jugnu Enterprises<br>Room No. 4, 2nd Floor, Arkay Square,<br>Extention, Shahrah-e-Liaquat,<br>Karachi-74000. | Sinocudin 20% (w/w) EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 2/5/1998 | 18-4-98 | | | |
| 695 | Fast Ago Pvt., Ltd., Vehari | Sumitik 20% EC | Fenvalerate | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 2/5/1998 | 22-3-97 | | | |
| 696 | Dynamic Agrilink, Multan | Tongle 4.5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 4/5/1998 | 26-2-98 | | II | Insect. |
| 697 | Pace Pasticide (Pvt.) Ltd.<br>406/2, Masoom Shah Road,<br>Multan. | Seven Star 40% (w/w) EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 5/5/1998 | 25-3-98 | | | |
| 698 | Pace Pasticide (Pvt.) Ltd.<br>406/2, Masoom Shah Road,<br>Multan. | Bulletin 10% (w/w) EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 5/5/1998 | 23-2-98 | | II | Insect. |
| 699 | HELB Agrosciences Pakistan (Pvt.) Ltd.<br>136,1st Floor, Mall Plaza, Mall Road,<br>Multan Cantt. | Tafaban 48% (w/v) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 5/5/1998 | 27-2-98 | | II | Insect. |
| 701 | Pace Pasticide (Pvt.) Ltd.<br>406/2, Masoom Shah Road,<br>Multan. | Fenthrin 20% (w/w) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 4/5/1998 | 23-4-98 | | | |
| 702 | The Saggus (Pvt.) Ltd.<br>20 - G, Saggus House, Vehari. | Galaban 40% (w/w) EC | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 5/5/1998 | 22-11-97 | | II | Insect. |
| 703 | Solex Chemicals (Pvt.) Ltd.<br>Solex House 768 Mahmoodabad Khanewal<br>Road, Multan. | Masco 40% (w/w) EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | | 5/5/1998 | 13-4-98 | | | |
| 704 | Commander Agro (Pvt.) Ltd.<br>75-Askaria Colony,Shershah Road,<br>Multan Cantt. | Touch 25% WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 5/5/1998 | 6/1/1998 | | III | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 705 | Commander Agro (Pvt.) Ltd. 75-Askaria Colony,Shershah Road, Multan Cantt. | Gaonong 2.5% (w/v) EC | Lambda Cyphalothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 5/5/1998 | 16-4-98 | | | |
| 706 | Crop Care Pvt., LTd, Lahore | Promo 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 5/5/1998 | 11/4/1998 | | III | Insect. |
| 707 | Solex Chemicals (Pvt.) Ltd. Solex House 768 Mahmoodabad Khanewal Road, Multan. | Gaonong 2.5% (w/v) EC | Lambda Cyhalothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 5/5/1998 | 13-4-98 | | | |
| 708 | Solex Chemicals (Pvt.) Ltd. Solex House 768 Mahmoodabad Khanewal Road, Multan. | Fenthrin 20% (w/v) EC (Appendix-A) | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 19.05.2003 | 04.05.2004 | Revised | | |
| 709 | International Trade Centre 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Tianjin 60% (600 G/L) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 9/5/1998 | 21-3-98 | | | |
| 710 | Satoz Agri, Vehari | Xianffi 20% (w/w) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 30-4-98 | 18-12-97 | | | |
| 711 | Reliance Chemical, Karachi | Xianfei 20% w/w EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 2/5/1998 | 19-2-97 | | | |
| 712 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Xiantao 40% w/w EC | Isocarbophos | Cotton Heliothis spp., red spider mites, rice stem borers and thrips and citrus red mite, rust mite and leaf miner. | I | 11/5/1998 | 4/12/1996 | | II | Insect. |
| 713 | Burhan Chemicals 24 - 1 - B Industrial Estate, Multan. | Fentro 50% w/w EC | Fenitrothion | Sucking Insect of Cotton, Sugarcane, Pyrilla and Paddy Borers. | I | 11/5/1998 | 3/1/1998 | | | |
| 714 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Fenitro 50% (w/w) EC | Fenitrothion | Sucking Insect of Cotton, Sugarcane, Pyrilla and Paddy Borers. | I | 11/5/1998 | 31-12-97 | | II | Insect. |
| 715 | Burhan Chemicals 35 -E Shah Ruken-e-Alam Colony, Multan. | Lianzi 10% EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 11/5/1998 | 28-2-98 | | II | Insect. |
| 716 | Burhan Chemicals 24 - 1 - B Industrial Estate, Multan. | Zefran 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 11/5/1998 | 18-4-98 | | III | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 717 | Biochem Ltd., Karachi | Titan 2G | Phenthoate + Alpha Cypermethrin | Borers of rice and maize. | I | 12/5/1998 | 14-2-98 | | II | Insect. |
| 718 | Burhan Chemicals<br>35 -E Shah Ruken-e-Alam Colony, Multan. | Chaser 60 (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 12/5/1998 | 28-4-98 | | | |
| 719 | Biochem Ltd., Karachi | Solex 5% (w/w) EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 12/5/1998 | 30-12-97 | | II | Insect. |
| 720 | Pakistan Agro Chemicals (Pvt.) Ltd.<br>38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Byzin 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 14-5-98 | 11/4/1998 | | III | Insect. |
| 721 | Jugnu Enterprises<br>Room No. 4, 2nd Floor, Arkay Square,<br>Extention, Shahrah-e-Liaquat, Karachi-74000. | Fenthrin 20% (w/w) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 14-5-98 | 20-1-98 | | | |
| 722 | Jugnu Enterprises, Karachi | Unrac (50% WP) | Quinalphos | Broers of Sugarcane, mites of apples, aphids of tobacco, cotton pink, spotted and Heliothis bollworms, Army worms and thrips, whitefly, aphids, jassids, stem borers of paddy fruitfly of mango and melon. | H | 14-5-98 | 25-4-98 | | III | Herb. |
| 723 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28,Abdullah Haroon Road,<br>Karachi-74400. | Totti 20% (w/w) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 14-5-98 | 18-4-98 | | | |
| 724 | Pan Pacific (Pvt.) Ltd.<br>12 - M, Block - 6, P.E.C.H.S., Karachi. | Bulletin | Cypermethrin | Cotton Pink Bollworm 250 ml/acre,<br>Cotton Spotted Bollworm 250 ml/acre. | I | 18-5-98 | 5/1/1998 | | II | Insect. |
| 725 | Ali Akbar Enterprises<br>H# 97, ST# 12 Cavalary Ground (Ext.), Lahore Cantt. | Sweep 250 EC | Buprofezin + Fenpropathrin | Cotton whitefly, jassids, aphids and mites on cotton, potatoes and vegetables. | I | 26-5-98 | 3/3/1998 | | III +II | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 726 | World Qismat, Karachi | Sactar 60% (w/v) SL | Methamidophos | Cotton, Jassids, 500 ml/acre<br>Cotton, Thrips, 500 ml/acre<br>Cotton, Aphids, 500 ml/acre<br>Potato, Jassids, 400 ml/acre<br>Potato, Aphids, 400 ml/acre<br>Okra, Jassids, 400 ml/acre<br>Okra, Aphids, 400 ml/acre | I | 27-5-98 | 19-3-98 | | | |
| 727 | Commander Agro (Pvt.) Ltd.<br>75-Askaria Colony,Shershah Road,<br>Multan Cantt. | Femetal 20 EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 26-5-98 | 12/2/1998 | | | |
| 728 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chambers, 28,Abdullah Haroon Road,<br>Karachi-74400. | Labdathrin 2.5% (w/v) EC | Lambda Cyhalothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 28-5-98 | 11/4/1998 | | | |
| 729 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area,<br>Model Town-B,<br>Bahawalpur. | Ruslin 25% wp | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 28-5-98 | 25-2-98 | | III | Insect. |
| 730 | Agrotech, Karachi | Phostin 40% W/W | Chlorpyrifos | Cotton pink, spotted and Heliothis bollworms, Army Worm and thrips, whitefly, aphids, jassids, sugarcane borers and bugs, maize borers, orchard codling moth and vegetable beetles. | I | 28-5-98 | 18-3-98 | | II | Insect. |
| 731 | Welcon Chemicals (Pvt.) Ltd.<br>Suite # 18, 3rd Floor Shan Arcade,<br>New Garden Town, Lahore. | Welstar 2.5% (w/v) EC<br>(Appendix-A) | Deltamethrin | Cotton Pink, Spotted and heliothis bollworms, Army Worms and thrips, Whitefly, Aphids and Jassids and Stored grain pests. | I | 09.05.2001 | 27-05-2004 | Revised | II | Insect. |
| 732 | Burhan Chemical, Vehari | Fenlin 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 25-5-98 | 28-2-98 | | III | Insect. |
| 733 | Quality International Traders (Pvt.) Ltd.<br>9-Light Industrial Area, Model Town-B,<br>Bahawalpur. | Sophit | Acephate | Cotton Pink, Spotted and Heliothis bollworms, Army worm and thrips, whitefly, aphids, jassids. | I | 29-5-98 | 25-2-98 | | | |
| 734 | Execlsior International, Lahore | Tifudan | Carbofuran | Rice stem borers - 10 kg / acre,<br>Sugarcane borers - 14 kg / acre,<br>Maize borers - 8 kg / acre. | I | 28-5-98 | 7/2/1998 | | Ib | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 735 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Welhalo 2.5% EC (Appendix-A) | Lambda Cyhalothrin | Cotton bollworms, jassids, whitefly and thrips gram pod borers, mango hopper, rice stemborers and leaf folders, brinjal and lady finger fruit borers. | | 29-5-98 | 27-5-98 | Revised | | |
| 736 | Dawn Agro Services (Pvt.) Ltd. 16-B, Grain Market, Sadiqabad. | Lianzi 10 EC (w/v) (Appendix-A) | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 24.05.2003 | 29.05.2004 | Revised | II | Insect. |
| 737 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Top Fist 5% EC (w/v) (Appendix-A) | Esfenvalerate | Cotton Jassids, whitefly, pink, spotted and heliothis bollworms. | I | 25.06.2003 | 29.05.2004 | Revised | II | Insect. |
| 738 | Agrotech, Karachi | Masco 40% W/W EC | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | I | 30-5-98 | 18-3-98 | | | |
| 739 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Masco 40% (w/w) EC (Appendix - A) | Profenofos | Cotton pink, spotted & Heliothis bollworms, whitefly, thrips, jassids & mites, potato jassids & Chilli bud mites. | I | 24.04.2001 | 29-05-2004 | Renewal | | |
| 740 | Execlsior International, Lahore | Pestidor | Imidacloprid | Cotton jassids, whitefly and thrips, rice plant hoppers and apple aphids. | I | 30-5-98 | 16-3-98 | | | |
| 741 | Execlsior International, Lahore | Shathrin 5% w/w EC | Alpha Cypermethrin | Cotton aphids, Pink & Spotted Bollworms heliothis and mites, cabbages and diamond back moth. | I | 3/6/1998 | 26-3-98 | | II | Insect. |
| 742 | The Saggus (Pvt.) Ltd. 20 - G, Saggus House, Vehari. | Hithion 45% (w/w) EC | Malathion | Cotton sucking pests. | | 2/6/1998 | 27-10-97 | | III | Insect. |
| 743 | Anwaar Agro Services Street-4, Hissain Abad, Opp. Gulbahar, Peshawar. | Phoxvelerate 50% w/w EC | Phoxim Fenvalerate | Cotton bollworms and sucking insect pests. | I | 3/6/1998 | 11/1/1996 | | II | Insect. |
| 744 | UM Enterprises, Karachi | Bulletin 10% (w/w) EC | Cypermethrin | Cotton Pink Bollworm 250 ml/acre, Cotton Spotted Bollworm 250 ml/acre. | I | 3/6/1998 | 30-12-97 | | II | Insect. |
| 745 | Jico Pak. Lahore | Buta 60% (w/w) EC | Butachlor | Weeds in rice. | H | 3/6/1998 | 20-5-98 | | III | Herb. |
| 746 | UM Enterprises, Karachi | Zianfei 20% (w/w) EC | Fenpropathrin | Cotton jassids, whitefly, pink, spotted and Heliothis bollworms. | I | 4/6/1998 | 17-11-97 | | | |
| 747 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Agritox 44.1% w/w | MCPA | Broad leaved weeds in wheat. | | 4/12/1998 | 12/5/1998 | | | |
| 748 | FMC United (Private) Limited 61-A Main Gulberg, Lahore. | AIM (40 DF) | Carfentrazone Ethyl | Galium aparine, Veronica spp., Sinapis Arvensis, Senecio vulgaris, | H | 7/12/1998 | 2/12/1998 | | III | Herb. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | Chenopodium spp., Convolvulus arvensis, Cirsium arvensis, Melilotus indica, Rumus crispus, Medicago spp., Aphanes arvensis, Brassica Kaber, Sonchus spp., in wheat, Amaranthus spp., Datura spp., Solanun spp., Trianthema portulacastrum, Chenopodium spp., Convolvulus arvensis Rumex dentatus, Ipomoea spp., in maize. | | | | | | |
| 749 | Bayer CropScience (Pvt.) Ltd. Plot NO. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Regent TS 500 G/L (Appendix-A) | Fipronil | as seed treatment for Corn and Sunflower. | F | 07.06.2003 | 02.03.2005 | Revised | | |
| 750 | Bayer CropScience (Pvt.) Ltd. Plot NO. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Veetra 100 SC (w/v) (Appendix-A) | Bromoconazole | Apple, powdery mildew and scab; vine powdery mildew and black rot, melons powdery mildew and alternaria and peaches powdery mildew and monilia. | F | 05.03.2003 | 02.03.2005 | Revised | II | Fung. |
| 751 | Bayer CropScience (Pvt.) Ltd. Plot NO. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Merlin 750 WG (Appendix-A) | Isoxaflutole | Weeds in Corn. | H | 05.03.2003 | 02.03.2005 | Revised | III | Herb. |
| 752 | DE United pvt., Ltd., Karachi | Tracer 480 SC | Sprosad | Cotton, Cotton Heliothis and Spotted bollworm, Whitefly, Thrips. Cereal Grains (Wheat, Barley,Rye, Oats, ), Armyworm Corn, Corn Borer Potato and Tuberous Vegetables, Thrips, rmyworm, Heliothis Leafy Vegetables, Diamond Back Moth, Cabbage worm, Cabbage loopers, Armyworm, Leafminer, Thrips Fruiting Vegetables, Loopers, Tomato Fruit worm, Armyworm Cole Crops (Bressica Vegetables), Diamond Back Moth, Cabbage worm, Cabbage loopers Cucurbits, Armyworm, Leaf miner Beans & Peas, Loopers, Thrips, Leafminer Almonds & Pistachio, Peach twig borer, Leaf roller Apples, Heliothis, Codling moth Citrus, Thrips, Lepidoptera larvae, Leaf miner Stone fruits, Peach twig | | 2/3/1999 | 3/11/1998 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| | | | | borer, Green fruit worm, fruitfly, Thrips Tree, Farms & Plantation, Lepidoptera larvae, Gypsy moth, Army worm, Saw fly, Pine tip moth | | | | | | |
| 753 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Tolurex 500 (g/l) SC (Appendix - A) | Chlorotoluron | Annual broad leaved and annual grasses in wheat and barley. | H | 09.03.2002 | 05-03-2005 | Revised | III | Herb. |
| 754 | Universal Agrochemical,Karachi | Aser 50% WEC | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 9/3/1999 | 12/11/1998 | | | |
| 755 | International Trade Centre 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Kapacuron 25% WP | Chlorotoluron | Annual broad leaved and annual grasses in wheat and barley. | H | 9/3/1999 | 12/11/1997 | | III | Herb. |
| 756 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Feng 40% W/W EC | Isocarbophos | Cotton Heliothis spp., red spider mites, rice stem borers and thrips and citrus red mite, rust mite and leaf miner. | I | 12/3/1999 | 4/12/1996 | | | |
| 757 | Ali Akbar Enterprises H# 97, ST# 12 Cavalary Ground (Ext.), Lahore Cantt. | Acelor 50% (w/w) EC | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 15-3-99 | 4/2/1999 | | | |
| 758 | Pak China Chemicals H # 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Zefran 25% (w/w) EC | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 13-3-99 | 22-5-98 | | III | Insect. |
| 759 | Welcon Chemicals, Pvt., Ltd., Lahore | Welquina 50% WP | Quinalphos | Broers of Sugarcane, mites of apples, aphids of tobacco, cotton pink, spotted and Heliothis bollworms, Army worms and thrips, whitefly, aphids, jassids, stem borers of paddy fruitfly of mango and melon. | H | 12/3/1999 | 18-1-99 | | | |
| 760 | Ali Akbar Enterprises, Lahore. | Beta Queen 4.5% (w/w) EC | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 11/2/1999 | 25-9-98 | | II | Insect. |
| 761 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | Trior (185 + 125 + 125 g/l) SL (Appendix-A) | Dichloroprop + MCPA + MCPP | Annual and perennial broad leaved weeds in wheat. | H | 09.03.2002 | 28-02-2005 | Renewal | III | Herb. |
| 762 | BASF Chemicals & Polymers Pakistan (Pvt.) Ltd. 46 - A Block - 6 P.E.C.H.S. Karachi 75400. | Delon 750 G/L SC | Drithiqumen | Peach scab; pears leaf spetor scab; apples scab. | F | 3/3/1999 | 14-1-99 | | | Fung. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 763 | Ali Akbar Enterprises, Lahore. | Rosepelon 5% w/w EC | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 26-3-99 | 7/8/1998 | | II | Insect. |
| 764 | Dada Jee Corporation, Lahore | Fixup 41% w/v SL | Isopropylamine Glyphosole | Grasses and broad leaved weeds in mustand, beans, pears and in plantations, orchards. | H | 27-3-99 | 1/9/1998 | | III | Herb. |
| 765 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Acelor 50% (w/w) EC (Appendix-A) | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 22.04.2002 | 01-04-2005 | Renewal / Revised | | |
| 766 | Syngenta Pakistan Limited S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. | Dual Goll S 960 G/L EC | Metolachlor | for control of grasses in maize, peanuts and sugarcane. | H | 3/4/1999 | 1/3/1999 | | | |
| 767 | Welcon Chemicals, Pvt., Ltd., Lahore | Rosepela 3% w/w EC | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 3/4/1999 | 13-3-99 | | II | Insect. |
| 768 | Crop Care, Lahore | Rosepelan 3% w/w EC | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 3/4/1999 | 17-11-98 | | II | Insect. |
| 769 | Crop Care, Lahore | Acelor 50% w/w | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 3/4/1999 | 8/12/1998 | | | |
| 770 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Xinchlor 50% w/w EC | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 3/4/1999 | 20-2-99 | | | |
| 771 | Jugnu Enterprises Room No. 4, 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Humjan 15% (w/w) EC | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 3/4/1999 | 9/9/1998 | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 772 | Pak China Chemicals H # 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Rani 20% w/v SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 3/4/1999 | 29-1-99 | | II | Insect. |
| 773 | Dada Jee Corporation H # 97, ST# 12 Cavalary Ground (Ext.), Lahore Cantt. | Metlor 72% w/w EC | Metolachlor | for control of grasses in maize, peanuts and sugarcane. | H | 3/4/1999 | 7/1/1999 | | III | Herb. |
| 774 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Acetor 50% EC (w/v) (App.-A) & 86.24% Tech. (w/w) Min (App.-B) | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 19.02.2003 | 02.04.2005 | Revised | | |
| 775 | Jugnu Enterprises, Karachi | Sweepor 25% (w/w) WP | Prometryn + Chlorosulfuron | Control weeds in wheat. | H | 3/4/1999 | 2/2/1999 | | III +III | Herb. |
| 776 | Jugnu Enterprises, Karachi | Jugtryne 50% w/w EC | Acetochlor + Simetryn | weeds in rice. | H | 3/4/1999 | 12/3/1999 | | III | Herb. |
| 777 | Jugnu Enterprises, Karachi | Jeoyar 35% w/w | Metalaxyl | Smuts and rusts on milfets. | | 3/4/1999 | 1/3/1999 | | III | Fung. |
| 778 | Jugnu Enterprises, Karachi | Kecaowei 18% WP | Acetochlor + Bensulfuron Methyl | For control of weeds in rice. | H | 3/4/1999 | 4/3/1999 | | III | Herb. |
| 779 | Jugnu Enterprises, Karachi | Jeoyar 25% W/W WP | Metalurcy P | Downy mildew on cucumbers. | | 3/4/1999 | 22-2-99 | | | |
| 780 | Jugnu Enterprises, Karachi | Killer 40% w/w EC | Phoxim | Cotton bollworm and cabbage diamond back moth. | I | 3/4/1999 | 12/3/1999 | | | |
| 781 | Farm Shield, Lahore | Sushamin 18% w/w WSC | Dimehypo | Rice borers. | I | 22-3-99 | 24-1-98 | | NONE | Insect. |
| 782 | Asian International, Karachi | Rainbow 27% w/w EC | Isocarbophos + Fenvelerate | Cotton bollworms. | I | 3/4/1999 | 1/3/1999 | | II | Insect. |
| 783 | Pan Pacific (Pvt.) Ltd. 12 - M, Block - 6, P.E.C.H.S., Karachi. | Atlas Atrazine 500 W/V | Atrazine | Weeds in maize, rice and Sugarcane. | H | 3/4/1999 | 20-2-99 | | III | Herb. |
| 784 | Pan Pacific (Pvt.) Ltd. 12 - M Block VI, P.E.C.H.S., Karachi. | Sure 1.8% (w/v) EC (App.-A) & 90% ( w/w) Tech. (App.-B) | Abamectin | Cotton bollworms. | I | 21.03.2003 | 03.04.2005 | Renewal | III | Insect. |
| 785 | Khan Cropcare, Lahore | Dadi 50% w/w EC | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 2/4/1999 | 21-10-98 | | | |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 786 | Dawn Agro Services, Sadiqabad | Zefran 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 1/4/1999 | 1/6/1998 | | III | Insect. |
| 787 | Asian International, Karachi | Pastak 4.5 w/w | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 3/4/1999 | 21-10-98 | | II | Insect. |
| 788 | Al-Farid Corporation 7/38, Arkay Square, Shahrah-e-Liaquat, Karachi. | Golden 150 15% (w/w) EC | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 3/4/1999 | 21-10-98 | | | |
| 789 | National Insecticide, Karachi | Himethrin 4.5% EC (w/w) | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 3/4/1999 | 17-6-98 | | II | Insect. |
| 790 | Nichiman Corporation, Lahore | Applaud 40% w/w Flowable | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 3/4/1999 | 4/5/1998 | | III | Insect. |
| 791 | Chemgro International (Pvt.) Ltd. 29-M, Civic Centre, Model Town (Ext.), Lahore. | Mielinghuang 26% w/WEC | Phoxim + Cyhalothrin | Cotton bollworms and Diamond back moth on Cabbage. | I | 15-4-99 | 8/1/1999 | | II | Insect. |
| 792 | Chemgro International Lahore | Stark Beta 4.5% w/w EC | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 15-4-99 | 8/1/1999 | | II | Insect. |
| 793 | Syngenta Pakistan Limited S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. | Ridomilgoldmz 68 WP | Metalaxyl M + Mancozeb | Alternaria and phythophthora on potatoes and peronospora on tobacco, onions and leek. | | 4/4/1999 | 29-10-98 | | III | Fung. |
| 794 | Jaffer Brothers (Pvt.) Limited Jaffer Chambers, 28,Abdullah Haroon Road, Karachi-74400. | Frustrate FPB 8% (w/w) STRIP | Glyphosate | Control of annual and perennial grasses and broad-leaved weeds. | H | 12/5/1999 | 18-2-98 | | | |
| 795 | Ramson International, Lahore | Guprozin 25 WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 13-5-99 | 11/5/1998 | | III | Insect. |
| 796 | Huma Enterprises 74/19 A, Alamdar Road, Hussain Abad, Quetta. | Omite 57% (w/v) EC (Appendix-A) | Propergite | Two spotted spider mites in field grown roses, vines, apples, peaches, plums and lemon. | Acari. | 07.01.2003 | 15.06.2005 | Renewal / Revised | | |
| 797 | Dada Jee Corporation, Lahore | Rani 20% w/w SP | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 19-6-99 | 19-5-99 | | II | Insect. |
| 798 | ICI Pak. Ltd., Karachi | Scud 10% w/w EC | Flubrocythrinate | Cotton aphids, bollwroms, cabbage butterfly and red spider moter on citrus, aphids and cabbage. | I | 21-6-99 | 14-2-98 | | Ib | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 799 | Farmers Equity, Multan | Rosepelan 3% w/w EC | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 21-6-99 | 19-3-99 | | II | Insect. |
| 800 | Syngenta Pakistan Limited S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. | Topik 15 WP | Clodinafop - Propargyl | Annual monocotyledon weeds in wheat and Rye. | H | 22-6-99 | 4/6/1999 | | III | Herb. |
| 801 | Vital Cemicals Corporation 18/ 3, Shah Arcade, Civic Center, New Garden Town, Lahore. | Promo 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 23-6-99 | 5/5/1998 | | III | Insect. |
| 802 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | Shogun 1.8% (w/v) EC (Appendix-A) | Abamectin | Cotton bollworms. | I | 05.08.2003 | 22.06.2005 | Renewal / Revised | III | Insect. |
| 803 | Acumen Pvt., LTd., Karachi | Promo 25% (w/w) WP | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | I | 11/6/1999 | 13-3-99 | | III | Insect. |
| 804 | Pan Pacific, Karachi | Megamos 3% w/w EC | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 26-6-99 | 9/4/1999 | | II | Insect. |
| 805 | Monsanto Pakistan AgriTech (Pvt.) Ltd. 2nd Floor, ABN Amro Bank Building, 310-Upper Mall, Lahore. | Lasso 480 g/l EC | Alachlor | Cyperus esculontas annual grasses and broad leaf weeds in maize sugarcane and soyabeans. | H | 18.08.2003 | 02.07.2005 | Renewal / Revised | Ia | Herb. |
| 806 | Crop Care, Lahore | Xinchlor 50% (w/w) EC | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 7/7/1999 | 17-4-99 | | | |
| 807 | Caltex Oil (Pakistan) Limited Corporate Head Quarters, UBL Building, 14th Floor, Jinnah Avenue, Blue Area, Islamabad. | Dctron Plus | Paraffinic Petroleum Oil | Citrus leafminers and scales; Grapes scales; Pome & Stone fruits scales and mites; Banana scales, and Mango scales. | Acari. | 17-7-99 | 4/5/1999 | | EFP | Acari. |
| 808 | Mosanto Pakistan Agrotch, Lahore | Round up 480 G/L | Glyphosate | Control of annual and perennial grasses and broad-leaved weeds. | H | 10/8/1999 | 15-2-99 | | | |
| 809 | Bayer CropScience (Pvt.) Ltd. Plot NO. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Drop Ultra 120 G/L + 60 g/l SC (Appendix-A) | Thidiazuron + Diuron | Cotton defoliator. | (Cotton defoliat or) | 19.02.2003 | 31.08.2005 | Revised | III | PGR |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 810 | Expert Agricare International, Lahore | Acetar 50% (w/w) EC | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 27-8-99 | 31-7-99 | | | |
| 811 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Weedout 40% (w/w) SE (24% + 16%) (Appendix-A) | Propisochlor + Atrazine | Broad-leaved weeds and grasses in wheat, maize sugarcane and potatoes. | H | 05.11.2002 | 28.02.2006 | Renewal / Revised | III | Herb. |
| 812 | Pak China Chemicals H # 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Diesomil Platinium | Cymoxanil + Mancozeb | Downy mildew on cucumber, and vegetable, and early and late blight of potatoes. | F | 16-9-99 | 1/9/1998 | | III | Fung. |
| 813 | Pakistan Agrochemicals, Karachi | Newtron 50% w/v WSC | MCPA | Broad leaved weeds in wheat. | | 23-9-99 | 4/8/1999 | | | |
| 814 | Sarhad Farm Services, Peshawar | Sinostar 48% w/w EC | Phoxim + Brofluthrin | Cotton bollworms, aphids and sucking insect pests. | I | 23-9-99 | 16-1-96 | | II | Insect. |
| 815 | Khan Cropcare, Lahore | Lihua 20% WP | Chlorsulfuron | weeds in wheat. | H | 6/10/1999 | 16-11-98 | | III | Herb. |
| 816 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Rosepelon 3% (w/w) EC | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 16-10-99 | 17-4-99 | | II | Insect. |
| 817 | Econ Cooperation, Lahore | Fenggu | MCPA | Broad leaved weeds in wheat. | | 21-10-99 | | | | |
| 818 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Superxim 40% EC (w/v) (Appendix-A) | Phoxim | Cotton bollworm and cabbage diamond back moth. | I | 05.11.2002 | 11.10.2005 | Renewal | II | Insect. |
| 819 | Pace Pesticide, Multan | Rosepelan | Rosepelan | Vegetable orchards aphids thrips, leafhopper, whitefly, leaf miner, diamon back moth & tobacco aphids & cotton aphids & whitefly. | | 16-10-99 | 1/6/1999 | | | |
| 820 | Solex Chemicals (Pvt.) Ltd. Solex House 768 Mahmoodabad Khanewal Road, Multan. | Xinchlor 50% (w/v) EC (Appendix-A) | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 21.01.2003 | 31.12.2003 | Renewal / Revised | | |
| 821 | Pak China Chemicals 1 - km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Agritor 500 g/l (44.1% w/w) (Appendix-A) | MCPA | Broad leaved weeds in wheat. | | 12.12.2002 | 28.02.2003 | Renewal | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 822 | Chemgro International (Pvt.) Ltd. 29-M, Civic Centre, Model Town (Ext.), Lahore. | Wopro 500 G/L (Appendix-A) | MCPA | Broad leaved weeds in wheat. | | 24.05.2003 | 30.12.2005 | Renewal | | |
| 823 | National Insecticides Co. (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Chrigoslan Guang 1.8% (w/v) EC (Appendix-A) | Abamectin | Cotton bollworms. | I | 01.01.2003 | 03.01.2006 | Renewal / Revised | III | Insect. |
| 824 | Mosanto Pakistan AgriTech (Pvt.) Ltd. 6-Old, Mulsim Town, Lahore. | Roundup 490 g/lit. water soluble liquid (Appendix-A) | Glyphosate | Control of annual and perennial grasses and broad-leaved weeds. | | 10.07.2003 | 26.01.2006 | Revised | | |
| 825 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Femelor 50% (w/v) EC (Appendix-A) | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 07.03.2003 | 25.02.2006 | Renewal / Revised | | |
| 826 | DuPont Pakistan Operations (Pvt.) Ltd. 2nd Floor, Bahria Complex 1, Karachi. | Al Kanak 75.3% WP (0.3% + 75%) (Appendix-A) | Metasulfuron Methyl + Isoproturon | Weeds and grases in wheat. | H | 07.06.2003 | 25.02.2006 | Renewal | III | Herb. |
| 828 | United Technova Cham (Pvt.) Ltd. 702, Mashriq Center, Block -14, Gulshan - e - Iqbal, Karachi. | Acerihit 50% (w/w) EC (Appendix-A) | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 21.03.2003 | 25.02.2006 | Renewal / Revised | III | Herb. |
| 829 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | Aspilan | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 10/3/2000 | 25-1-2000 | | II | Insect. |
| 831 | Chemgro International, Lahore | Rosepelan | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 14-3-2000 | 13-3-99 | | II | Insect. |
| 832 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Zinchlor 75% (w/w) WP | Metribuzin + Propisochlor | Blweeds in soyabean potatoes sugarcane, maize and wheat. | H | 05.08.2003 | 20.03.2006 | Renewal / Revised | III +III | Herb. |
| 833 | Khan Cropcare, Lahore | Mielinghuaraf | Phoxim + Cyhalothrin | Cotton bollworms and Diamond back moth on Cabbage. | | 6/3/2000 | 21-10-98 | | II | Insect. |
| 834 | Pan Pacific, Karachi | Pantamid | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 22-3-2000 | 3/3/2000 | | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 835 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Cure 1.8% (w/v) EC (App.-A) & 95% (w/w) Tech. Min. (App.-B & C) | Abamectin | Cotton bollworms. | I | 10.07.2003 | 23.03.2006 | Renewal / Revised | III | Insect. |
| 836 | Pakistan Agrochemicals, Karachi | Torus | Diafenthiuron | Whitefly, jassids, aphids and mites of cotton and Vegetable. | I | 27-3-2000 | 21-3-2000 | | II | Insect. |
| 837 | Dada Jee Corporation, Lahore | Solo 50 SC | Diafenthiuron | Whitefly, jassids, aphids and mites of cotton and Vegetable. | I | 29-3-2000 | 16-3-2000 | | III | Insect. |
| 838 | Ali Akbar Enterprises, Lahore. | Dolo 50 SC | Diafenthiuron | Whitefly, jassids, aphids and mites of cotton and Vegetable. | I | 30-3-2000 | 10/3/2000 | | III | Insect. |
| 839 | Granulars Pvt., Ltd., Karachi | Cure | Abamectin | Cotton bollworms. | I | 30-3-2000 | 10/2/2000 | | III | Insect. |
| 840 | Warble Pvt., Ltd., Lahore | Raja | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 3/4/2000 | 14-2-2000 | | II | Insect. |
| 841 | National Insecticides Co. (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Shamante 20% (w/w) WP (Appendix-A) | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 09.04.2003 | 04.04.2006 | Renewal | | |
| 842 | Pakistan Agrochemicals, Karachi | Moziban | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 8/4/2000 | 4/3/2000 | | II | Insect. |
| 843 | Pan Pacific (Pvt.) Ltd. 12 - M Block VI, P.E.C.H.S., Karachi. | Panstar | Diafenthiuron | Whitefly, jassids, aphids and mites of cotton and Vegetable. | I | 7/4/2000 | 31-3-2000 | | III | Insect. |
| 844 | Crop Care, Lahore | Kexing | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 8/4/2000 | 10/2/2000 | | II | Insect. |
| 845 | Universal Agrochemicals, Karachi | Metro | Propisochloride | Bh. Weeds in soyabeans, potatoes sugarcanes, maize and wheat. | H | 18-4-2000 | 8/4/2000 | | III | Herb. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 846 | Pan Pacific, Karachi | Megamos 20 SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 18-4-2000 | 29-3-2000 | | II | Insect. |
| 847 | BASF Chemicals & Polymers Pakistan (Pvt.) Ltd. 46 - A Block - 6 P.E.C.H.S. Karachi 75400. | Indiana | Pendimethalin + Alahlor | Maize - grass weeds. | | 18-4-2000 | 7/4/2000 | | III +Ia | Insect. |
| 848 | Solex Chemicals (Pvt.) Ltd., Solex House 768 Mahmoodabad Khanewal Road, Multan. | Damantung 20% (w/v) EC (Appendix-A) | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 22.05.2003 | 31.12.2003 | Renewal / Revised | | |
| 849 | National Insecticides Co. (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Acetor 50% EC (w/v) (Appendix-A) | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 12.04.2003 | 20.04.2006 | Renewal / Revised | III | Herb. |
| 850 | Pan Pacific, Karachi | Megamos 20% w/w | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 22-4-2000 | 29-3-2000 | | II | Insect. |
| 851 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Betrazin 38% (w/v) SC (Appendix-A) | Atrazine | Weeds in maize, rice and Sugarcane. | H | 22.05.2003 | 21.04.2006 | Renewal / Revised | III | Herb. |
| 852 | Pakistan Agrochemicals, Karachi | Glock | Phorate + Terbufos | Cotton jassids, aphids and rice stem borers leaf folder and leaf hoppers. | I | 1/5/2000 | 4/3/2000 | | Ia | Insect. |
| 853 | Pakistan Agrochemicals, Karachi | Sypertin | Cypermethros + Abamactin | Cotton bollworms and Diamond back moth on Cabbage. | I | 1/5/2000 | 9/8/1999 | | II | Insect. |
| 854 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Zeon 20% (w/v) SL (App.-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 29.04.2003 | 30.04.2006 | Renewal / Revised | II | Insect. |
| 855 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Megamos 20% SL (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 26.05.2003 | 31.12.2003 | Renewal / Revised | II | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 856 | Ali Akbar Enterprises 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Megamos 20% (w/v) SL (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 07.06.2003 | 31.12.2003 | Renewal / Revised | II | Insect. |
| 857 | Granulars (Pvt.) Ltd. 1st Floor, Kassam Manzil, 1/29 Randal Raod, Karachi # 74400. | Megamos 20% SL (w/v) (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 22.05.2003 | 31.12.2003 | Renewal / Revised | II | Insect. |
| 858 | Solex Chemicals (Pvt.) Ltd., Solex House 768 Mahmoodabad Khanewal Road, Multan. | Somite 40% (w/v) EC (Appendix-A) | Propergite | Mites on citrus. | Acari. | 22.05.2003 | 05.05.2006 | Renewal / Revised | III | Acari. |
| 859 | Marvi Agrotech Pvt. Ltd., Karachi | Weltrex | Atrazine | Weeds in maize, rice and Sugarcane. | H | 6/5/2000 | 16-2-2000 | | III | Herb. |
| 860 | Granulars Pvt., Ltd., Karachi | Acelor 50% (w/v) EC (Appendix-A) | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 22.05.2003 | 05.05.2006 | Renewal / Revised | III | Herb. |
| 861 | Ali Akbar Enterprises, Lahore. | Super mextra | Metolachlor + Atrazine | Contorl of (annual grasses and broad leaf weeds in maize and sugarcane. | H | 6/5/2000 | 3/3/1999 | | III | Herb. |
| 862 | Warble Pvt., Ltd., Lahore | Weltrex 38% (w/v) SC | Atrazine | Weeds in maize, rice and Sugarcane. | H | 6/5/2000 | 10/2/2000 | | III | Herb. |
| 862-b | Ali Akbar Enterprises, Lahore. | Fentro Plus 70% (w/w) | Metrobuzin + Propisochlor | Broad leaved weeds in soyabeans, potatoes sugarcane, maize and wheat. | I | 6/5/2000 | | | III | Herb. |
| 863 | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Rotax Plus 35% (w/w) + 35% (w/w) (Appendix-A) | Fosetyl-Aluminum + Mancozeb | Downy mildew on brassicas, cucurbits and veetables, and late blight of potatoes. | | 26.05.2003 | 10.05.2006 | Renewal | | |
| 864 | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi. | Tigrex 25 g/l + 250 g/l (Appendix-A) | Diflufenican + MCPA | Broad leave weeds in Wheat, Barley, Oats and Rye. | H | 26.05.2003 | 10.05.2006 | Renewal | III | Herb. |
| 865 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Banko 500 (g/l) SC (App-A) & Min. 98%(w/w) Tech. (App-B) | Chlorothalonil | Potatoes downy mildew and peas Anthracnose and Botrytis. | F | 16.08.2003 | 12.05.2006 | Renewal | III | Fung. |
| 866 | Dawn Agro Services (Private) Limited 2- Main Road, Jinnah Town, Sadiqabad. | MSS 500 g/l Aqueous Solution (Appendix - A) | MCPA | Broad leaved weeds in wheat. | | 05.06.2003 | 12.05.2006 | Renewal | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 867 | FMC United (Private) Limited 61-A Main Gulberg, Lahore. | Acelan 20% WP (w/w) (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 24.05.2003 | 16.05.2006 | Renewal | II | Insect. |
| 868 | Vital Chemicals, Lahore | Semipelan | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 17-5-2000 | 3/5/2000 | | II | Insect. |
| 869 | Green Gro Pvt., Ltd., Bahawalpur | Reospelon 3% w/w | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 17-5-2000 | 15-11-99 | | II | Insect. |
| 870 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Pypitox | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 17-5-2000 | 13-4-2000 | | | |
| 871 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Asiplan 20% (w/w) SV | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 17-5-2000 | 22-4-2000 | | II | Insect. |
| 872 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | Jozer 202 SL (20% + 0.2% w/v) | Imidacloprid + Acetamiprid | Aphids, Thrips, Jassids and whtefly on cotton and vegetable. | I | 05.08.2003 | 16.05.2006 | Renewal / Revised | II | Insect. |
| 873 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | Atratox (w/v) SC | Atrazine | Weeds in maize, rice and Sugarcane. | H | 17-5-2000 | 3/3/2000 | | III | Herb. |
| 874 | Marvi Agrochem Pvt. Ltd., Karachi | Titonic 20% SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 17-5-2000 | 6/5/2000 | | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 876 | Warble Pvt., Ltd., Lahore | Shaheen Plus | Beta Cypermethrin | Cotton bollworms and cauliflower caterpillar. | I | 17-5-2000 | 27-12-99 | | II | Insect. |
| 877 | Syngenta Pakistan Limited S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. | Agrime 18 (1.8% w/v) EC (Appendix-A) | Abamectin | Cotton bollworms. | I | 25.04.2003 | 17.05.2006 | | III | Insect. |
| 878 | National Insecticides Company (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Titonic 20% (w/w) SP (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 07.05.2003 | 31.12.2003 | Renewal | II | Insect. |
| 879 | S. ESSA 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Femelor 50% (w/v) EC (Appendix-A) | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 28.04.2003 | 17.05.2006 | Renewal / Revised | III | Herb. |
| 880 | Pak China Chemicals H # 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Titonic 20% SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 18-5-2000 | 22-4-2000 | | II | Insect. |
| 881 | Econ Cooperation, Lahore | Yunnong | Acetochlor | Annual grasses and broad leaf weeds in maize, sugarcane, peanuts, rice, and soyabeans. | | 18-5-2000 | 6/10/1999 | | | |
| 882 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Polite | Diafenthiuron | Whitefly, jassids, aphids and mites of cotton and Vegetable. | I | 18-5-2000 | 18-4-2000 | | III | Insect. |
| 883 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Hiyield 5% (w/v) EC (0.5% w/w + 4.5% w/w) (App.-A) | Abamectin + Imidacloprid | Cotton pink, spotted and heliothis bollworms, thrips, aphids, whitefly and jassids. | I | 10.07.2003 | 14.06.2006 | Renewal / Revised | III | Insect. |
| 885 | National Insecticide Chem., Karachi | Defence 50 SC | Diafenthiuron | Whitefly, jassids, aphids and mites of cotton and Vegetable. | I | 17-6-2000 | 21-10-98 | | III | Insect. |
| 886 | Granulars Pvt., Ltd., Karachi | Titonic 20% SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Dimand back moth and Tobacco aphids. | | 17-6-2000 | 16-5-2000 | | II | Insect. |
| 887 | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900. | Sunstar 15% (w/w) WG (Appendix-A) | Ethoxysulfuron | Broad leaf weeds and sedges in rice. | H | 25.06.2003 | 27.06.2006 | Revised | | Herb. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 888 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | Ceeta 20 SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 29-6-2000 | 21-10-98 | | II | Insect. |
| 889 | Pace Pesticide, Multan | Kalan 0 SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 30-6-2000 | 15-5-2000 | | II | Insect. |
| 890 | Bayer DAS (Private) Limited 18/III Flench Street, Off Bleak House Road, Karachi. | Vantage Plus 360 g/l (Appendix-A) | Glyphosat Acid | Control of annual and perennial grasses and broad-leaved weeds. | H | 11.06.2003 | 28.06.2006 | Renewal | | |
| 891 | Welcon Chemicals, Lahore | Mythen 36% w/v SL (Appendix-A) | Imidacloprid + Acephate | Cotton Whitefly. | I | 1/7/2000 | 10/3/2000 | | II +III | Insect. |
| 893 | Solex Chemicals (Pvt.) Ltd., Solex House 768 Mahmoodabad Khanewal Road, Multan. | Megamos 20% (w/v) SL (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 12.07.2003 | 04.07.2006 | Renewal / Revised | II | Insect. |
| 894 | Bayer DAS (Private) Limited 18/III Flench Street, Off Bleak House Road, Karachi. | Starane M 100 g/l + 400 g/l Liquid | Fluroxypur + MCPA | Dicotyledon weeds in wheat, oats, barley & rye. | | 10.07.2003 | 07.07.2006 | Renewal | III | Herb. |
| 895 | Jugnu Enterprises 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | Megamos 20 SL w/v | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 30.07.2003 | 07.07.2006 | Renewal / Revised | II | Insect. |
| 896 | Welcon Chemicals, Lahore | Appalo 50% (w/v) SC | Diafenthiuron | Whitefly, jassids, aphids and mites of cotton and Vegetable. | I | 8/7/2000 | 7/4/2000 | | III | Insect. |
| 897 | National Insecticides Co. (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | Getrid 20% W/W SP | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 30.07.2003 | 05.07.2006 | Renewal / Revised | II | Insect. |
| 898 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | Lululing 40% (w/v) EC (Appendix-A) | Phoxim + Cypermethrin | Cotton Pink and spooted bollworms and cabbage, diamond - back moth. | | 25.06.2003 | 07.07.2006 | Renewal / Revised | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 899 | Dehkan International, Lahore | Mythen 36% w/v SL (Appendix-A) | Imidacloprid + Acephate | Cotton Whitefly. | I | 17-7-2000 | 15-5-2000 | | | |
| 900 | Dawn Agro Services (Pvt.) Ltd. 34 - 2/A, Jinnah Town, Sadiqabad. | Megamos 20% (w/v) SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 05.08.2003 | 02.08.2006 | Renewal / Revised | II | Insect. |
| 901 | Bayer DAS (Private) Limited 18/III Flench Street, Off Bleak House Road, Karachi. | Reldan 50% w/v EC | Chlorpyrifos Methyl | Citrus (Thrips, Aphids, Scale insects), Decidous fruits (Thrips, Aphids, Sanjose scale), Maize(Stem borer, Heliothis, Cotton(Leaf worm, Heliothis, Aphids), Potato(Aphids), Tomato(Catterpillar, Thrips) and stored grain insect pest. | I | 30.07.2003 | 16.08.2006 | Renewal | II | Insect. |
| 902 | Pak China Chemicals H # 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Rosepelan 3% (w/w) EC | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 24-8-2000 | 30-3-2000 | | II | Insect. |
| 903 | Ali Akbar Enterprises, Lahore. | Sweep 30%EC | Buprofezin + Fenpropathrin | Cotton whitefly, jassids, aphids and mites on cotton, potatoes and vegetables. | I | 29-9-2000 | 18-4-2000 | | III +II | Insect. |
| 904 | Dada Jee Corporation, Lahore | Foresight 20% (W/V) SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 13-10-2000 | 28-7-2000 | | II | Insect. |
| 905 | Pakistan Agrochemicals Pvt Ltd Kar. | Diplo-M | Diclofop-Methyl | | H | 16-10-2000 | 30-9-2000 | | III | Herb. |
| 906 | Monsanto Pakistan AgriTech (Pvt.) Ltd. 2nd Floor, ABN Amro Bank Building, 310-Upper Mall, Lahore. | Leader 75% WG (w/w) | Sulfosulfuron | Avena Fatua and Phalaris minor in wheat as post-emergence application. | H | 07.10.2003 | 20.10.2006 | Renewal / Revised | III | Herb. |
| 907 | Sadi Enteprises Quetta | Damanling | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 26-10-2000 | 28-8-2000 | | | |
| 908 | Pak China Chemicals H # 97, ST# 12 Cavalary Ground (Ext.) Lahore Cantt. | Hongguoli | Phoxim + Pyridaben | Cotton aphids, whiteflies, mites, pink, spotted and Heliothis bollworms and orchards aphids, mites and scales. | I | 7-11-20000 | 17-12-2000 | | II | Insect. |

## List of Companies Registration Form-17

| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 909 | Rosechem Enterprises Karachi | Foresight | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 16-12-2000 | 23-11-2000 | | II | Insect. |
| 910 | Archer Chemicals (Pvt.) Ltd, Lahore | Bestrazine 38% W/W SL | Atrazine | Weeds in maize, rice and Sugarcane. | H | 2/1/2001 | | | III | Herb. |
| 911 | Solex Chemicals (Pvt.) Ltd., Solex House 768 Mahmoodabad Khanewal Road, Multan. | Cure 1.8% (w/v)EC (Appendix-A) | Abamectin | Cotton bollworms. | I | 24.05.2003 | 09.010.2004 | Revised | III | Insect. |
| 912 | Solex Chemicals (Pvt.) Ltd., Solex House 768 Mahmoodabad Khanewal Road, Multan. | Bestrazine 38% (w/v) SL (Appendix-A) | Atrazine | Weeds in maize, rice and Sugarcane. | H | 24.05.2003 | 19.04.2004 | Revised | III | Herb. |
| 913 | United Distributors Pak. Ltd. Kar. | Baijunqing 75% WP | Chlorothalonil | Downy mildew on vegetable and melons, early and late blight of potatoes and tomatoes and scabs on apples and pears. | F | 19.01.2001 | | | III | Fung. |
| 914 | Agrolet International , Lahore. | Megamos 20 SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 19.01.2001 | | | II | Insect. |
| 915 Cance l | Ali Akbar Enterprises, Lahore. | Varan 1% (W/W) EC | Emamectin Benzoate | Cotton heliothis bollworms, Pink bollworms, Spotted bollworms, Army worm and mites. | I | 22.01.2001 | | | | |
| 916 | Agrolet International , Lahore. | Damanling 15% (W/W) EC | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | 17.02.2001 | | | | |
| 917 | International Trade Centre, Karachi | Megamos 20% (W/W) SP | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 28.02.2001 | | | II | Insect. |
| 918 | ICI Pakistan Ltd., Lahore. | Megamos 20% (W/V) SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 28.03.2001 | | | II | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 919 | Agri Mark Services , Karachi. | Qingqingle 1.8% (W/W) EC | Abamectin | Cotton bollworms. | I | 22.03.2001 | | | III | Insect. |
| 920 | International Trade Centre, Karachi | Megamos 20% (W/V) SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 11.04.2001 | | | II | Insect. |
| 921 | Commader Agro (Pvt.) Ltd,., Multa. | Megamos 20% (W/V) SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 11.04.2001 | | | II | Insect. |
| 922 | National Insecticide Chem., Karachi | Siguro 20% W/V | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | | | | II | Insect. |
| 923 | Pakistan Agrochemicals Pvt Ltd Kar. | Moziban 20% (W/V) SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | | | | II | Insect. |
| 924 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Reconil-M 70 % (W/W) WP (Appendix-A) | Chlorothalonil + Mancozeb | Early and late blight of Tomatoes. | F | | | | III | Fung. |
| 925 | FMC United (Pvt,) Ltd., Lahore. | Mustang | Ethion + Zeta Cypermethrin | Helicoverpa Spp. in Cotton. | I | | | | II | Insect. |
| 926 | S. Essa, Karachi | Damanling 15% (W/W) EC | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | I | | | | | |
| 927 | DuPont Pakistan Operations (Pvt.) Ltd. 2nd Floor, Bahria Complex 1, Karachi. | Steward 150 (g/l) SC (App.-A) & 52.0-62.4% (w/w) Tech. (App.-B) | Indoxacarb | Cotton - American bollworm, Spotted bollworm & Army worm<br>Apple - Codling moth.<br>Pear's - Codling moth.<br>Cabbage - Butterfly.<br>Cauliflower - Diamand back moth.<br>Tomato - Fruit worm<br>Corn - Borer and Armyworm | I | 15.11.2002 | 25.04.2004 | Revised | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 928 | Prime Venture 18-Chouburji Centre 46-Multan Road, Lahore. | Vitavax 200FF | Corboxim + Thiram | Control of loose and covered smuts in barley, loose smut and bunt in wheat, Helminthosporium oryzae in rice Rhizoctonia solani, Fusanium spp. and Pythium spp. in cotton as seed treatment. | F | | | | III +III | Fung. |
| 929 | Marvi Agrochem Pvt. Ltd., Karachi | Daopass | Imidacloprid + Monomehypo | Rice borers, plant hoppers and leaf-roller. | I | | | | II | Insect. |
| 930 | Mosanto Pakistan Agrotch, Lahore | Roundup Dry | Glyphosate | Control of annual and perennial grasses and broad-leaved weeds. | H | | | | | |
| 931 | Welgreen Chemical (Pvt.) Ltd., Lahore. | Megamos 20% (W/V) SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | | | | II | Insect. |
| 932 | Bayer DAS (Private) Limited 18/III Flench Street, Off Bleak House Road, Karachi. | Tracer | Spinosad | Cotton, Cotton Heliothis and Spotted bollworm, Whitefly, Thrips. Cereal Grains (Wheat, Barley,Rye, Oats, ), Armyworm Corn, Corn Borer Potato and Tuberous Vegetables, Thrips, Armyworm, Heliothis Leafy Vegetables, Diamond Back Moth, Cabbage worm, Cabbage loopers, Armyworm, Leafminer, Thrips Fruiting Vegetables, Loopers, Tomato Fruit worm, Armyworm Cole Crops (Bressica Vegetables), Diamond Back Moth, Cabbage worm, Cabbage loopers Cucurbits, Armyworm, Leaf miner Beans & Peas, Loopers, Thrips, Leafminer Almonds & Pistachio, Peach twig borer, Leaf roller Apples, Heliothis, Codling moth Citrus, Thrips, Lepidoptera larvae, Leaf miner Stone fruits, Peach twig borer, Green fruit worm, fruitfly, Thrips Tree, Farms & Plantation, Lepidoptera larvae, Gypsy moth, Army worm, Saw fly, Pine tip moth | I | | | | III | Insect. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 934 | National Insecticide Chem., Karachi | Proman | Prochloraz-Manganese Chloride Complex | Anthracnose/Colletotrichum sp; on mango & citrus. | | | | | III | Fung. |
| 935 | Mehdi (Pv t.) Ltd., Karachi. | Kil-Pilan | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | | | | II | Insect. |
| 936 | Monsanto Pakistan Agrotch, Lahore | Harness-Xtra 5.6L(372g/l +300g/l) | Acetochlor + Atrazine | Pre-emergent herbicide for the control of grassy and broad-leaf weeds in grain and fodder maize crops. | H | | | | III +III | Herb. |
| 937 | Green Gro (Pvt.) Ltd. 29-B, Small Industrial Estate,Multan Road, Bhawalpur. | MEGAMOS 20% (w/v) SL | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | I | 23.06.2001 | | | II | Insect. |
| 938 | Agrolet International 131/3, Kot Lakhpat Industrial Estate, Lahore. | DIGARD 50 % (w/w) SP & 98 %(w/w) Tech. | Cyromazine | Cucumber leaf miner. | I | 28.06.2001 | | | III | Insect. |
| 939 | Agrolet International 131/3, Kot Lakhpat Industrial Estate, Lahore. | BESTRAZINE 38% (w/w) SC & 94 %(w/w) Tech. | Atrazine | Weeds in maize, rice and Sugarcane. | H | 30.07.2001 | | | III | Herb. |
| 940 | Agrolet International 131/3, Kot Lakhpat Industrial Estate, Lahore. | ALERT PLUS 40% (w/w) + 30% (w/w) WP | Fosetyl-aluminum + Mancozeb | Downy mildew on brassicas, cucurbits and veetables, and late blight of potatoes. | F | 23-08-2001 | | | III | Fung. |
| 941 | Agrolet International 131/3, Kot Lakhpat Industrial Estate, Lahore. | PLANTOMIL GOLD 8% (w/w) + 64% (w/w) WP | Cymoxanil + Mancozeb | Downy mildew on cucumber, and vegetable, and early and late blight of potatoes. | F | 23-08-2001 | | | III | Fung. |
| 942 | Ali Akbar Enterprises, Lahore. | GETRID 20% (w/w) EC & 95% Tech.( w/w) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 11/9/2001 | | | II | Insect. |
| 943 | National Insecticides Co. (Pvt.) Ltd., Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | FENDER 90 WGR & 95 % Tech.(w/w) | Atrazine | Weeds in maize, rice and Sugarcane. | H | 11/9/2001 | | | III | Herb. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 944 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | CHWASTOX 500 g/l (44.25% w/w) SL | MCPA | Broad leaved weeds in wheat. | | 5/10/2001 | | | | |
| 945 | Agrolet International 131/3, Kot Lakhpat Industrial Estate, Lahore. | PREVENT 20% (w/w) EC & 95% Tech. (w/w) | Tolclofos-methyl | Rhizoctonia disease in cotton, potato & chilli. | | 24-10-2001 | | | III | Fung. |
| 946 | Solex Chemicals (Pvt.) Ltd., Solex House 768 Mahmoodabad Khanewal Road, Multan. | ATLAS MCPA 480 g/l SL | MCPA | Broad leaved weeds in wheat. | | 1/11/2001 | | | | |
| 947 | Agrolet International 131/3, Kot Lakhpat Industrial Estate, Lahore. | MEGAMOS 20% (w/w) SP | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 1/11/2001 | | | II | Insect. |
| 948 | BASF Chemicals & Polymers Pakistan (Pvt.) Ltd.'46 - A Block - 6 P.E.C.H.S. Karachi - 75400. | TORQUE 550 g/l SC (Appendix - A) | Fenbutatin oxide | Mites on Apples, pears, peaches, citrus, cucumber, melon, tomato, Bean and vine. | | 28.11.2001 | | | | |
| 949 | Warble (Pvt.) Ltd. Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | Agroxone 500 gm/l SL (Appendix-A) | MCPA | Broad leaved weeds in wheat. | | 04.12.2001 | | | III | Herb. |
| 950 | United Distributors Pakistan Limited. 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | HALONIL 75% WP (w/w) (Appendix-A) | Chlorothalonil | Downy mildew on vegetable and melons, early and late blight of potatoes and tomatoes and scabs on apples and pears. | | 08.12.2001 | | | III | Fung. |
| 951 | Welcon Chemical (Pvt.) Ltd. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore | SAOMANJING 15% (w/w) EC (Appendix-A) | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | | 05.01.2002 | | | | |
| 952 | Universal Agro Chemicals (Pvt) Ltd. E/ 12, S.I.T.E. Karachi. | UNIBEN 15 % (W/V) EC (Appendix-A) | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | | 12.01.2002 | | | | |
| 953 | Dawn Agro Services (Pvt.) Ltd. 34 - 2/A, Jinnah Town, Sadiqabad. | Cure 1.8 % (w/v) EC (Appendix - A) | Abamectin | Cotton bollworms. | | 18.06.2003 | 31.01.2005 | Revised | III | Insect. |
| 954 | BASF Chemicals & Polymers Pakistan (Pvt.) Ltd. 46 - A Block - 6 P.E.C.H.S., Karachi 75400. | TORQUE 50% (w/w) WP (Appendix - A) | Fenbutatin oxide | Mites on Apples, pears, peaches, citrus, cucumber, melon, tomato, Bean and vine. | | 28.02.2002 | | | III | Acar. |

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| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 955 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Mospilan 20% (w/v) SL (App-A) & 99% Tech.( w/w) (App-B) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 13.03.2002 | | | II | Insect. |
| 956 | Agrolet Chemicals Industries, 711/ X, D.H.A., Lahore Cantt. | GRIP UP 48% (g/l) SL (App-A) & 95% Tech. Min. (App-B) | Glyphosate Isopropylammoniu m | Broad leaf weeds, sedges, and grasses in cotton, rice and wheat. | | 06.04.2002 | | | III | Herb. |
| 957 | International Trade Centre, 120 Liaquat Market, M.A. Jinnah Road, Karachi 74000. | Cure 1.8 % (w/w) EC (Appendix - A) | Abamectin | Cotton bollworms. | | 12.04.2002 | | | III | Insect. |
| 958 | Agrolet Chemicals Industries, 711/ X, D.H.A., Lahore Cantt. | PRE-CURE COMBI 65% (w/w) WP (52.5% + 12.5% w/w) (Appendix - A) | Thiophanate-Methyl+Diethofenc arb | Powdery mildew on cucurbits | | 22.04.2002 | | | III | Fung. |
| 959 | Green Gro (Pvt.) Ltd., 29-B, Small Industrial Estate,Multan Road, Bhawalpur. | CURE 1.8% (w/w) EC (Appendix - A) | Abamectin | Cotton bollworms. | | 06.05.2002 | | | III | Insect. |
| 960 | Welgreen Chemical (Pvt) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | CHONGMANKE 1.8% (w/w) EC (Appendix - A) | Abamectin | Cotton bollworms. | | 24.05.2003 | 05.05.2005 | Revised | III | Insect. |
| 961 | Nafees (Pvt.) Ltd. 18 - H, Vehari 61100. | CURE 1.8% (w/v) EC (Appendix - A) | Abamectin | Cotton bollworms. | | 07.06.2003 | 05.05.2005 | Revised | III | Insect. |
| 962 | Zagro NPC (Pvt.) Ltd., 25-Y Main Road, New Multan. | CURE 1.8% (w/w) EC (App-A) & 90.4% (w/w) Tech. (App-B) | Abamectin | Cotton bollworms. | | 06.05.2002 | | | III | Insect. |
| 963 | National Insecticides Co. (Pvt.) Ltd., Jaffer Chambers, 28, Abdullah Haroon Road, Karachi-74400. | CHONGSHA 50% (w/w) SP (Appendix - A) | Profurite Aminium | Rice leaf roller and stem borers. | | 18.05.2002 | | | | |
| 964 | Kinetic International (Pvt.) Ltd., 4 - Muhammad Arcade, L. M. Q. Road, Multan. | MEGAMOS 20% (w/v) SL (Appendix - A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 16.05.2002 | | | II | Insect. |

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|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 965 | United Distributors Pakistan Limited, 9th Floor, NIC Building, Abbasi Shaheed Road, Karachi. | ZEON 20% (w/w) SP (Appendix - A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 20.05.2002 | | | II | Insect. |
| 966 | Solex Chemicals (Pvt.) Ltd. Solex House 768 Mahmoodabad Khanewal Road, Multan. | PROMO 25% (w/w) WP (Appendix - A) | Buprofezin | Cotton whitefly, jassids, aphids, rice brown hoppers and green hoppers. | | 29.05.2002 | | | III | Insect. |
| 967 | Indus Engineering Services 1st Floor, Army Stadium, Peshawar Cantt. | DEGESCH Plates/Strips (Appendix-A) | Magnesium Phosphide | Tobacco beetle and moth and stored products pests. | | 01.06.2002 | | | I | Fum. |
| 968 | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900. | BUCTRIL SUPER 60% (w/v) EC (18.7%+18.1% +40.0% w/w) (App.-A) | Bromoxynil Ocatanoate + Heptonoate + MCPA | Broad leaf weeds in Wheat, Barley, Oat and Rye (Chenopodium album, Convolvulus arvensis, , Anagallis spp., Melilotus spp., Medicago spp., Rumex spp., Vicia sateva, Fumaria spp., Euphorbia spp., Coronopus spp, Datura spp. and Amaranthus spp.). | | 25.06.2003 | 31.05.2005 | Revised | II | Herb. |
| 969 | Indus Engineering Services, 1st Floor, Army Stadium, Peshawar Cantt | DETIA GAS EX-T (Aluminium Phosphide 56% W/W Min.) (App-A) | Aluminium Phosphide Tablets | Fumigant in food grains | | 01.06.2002 | | | I | Fum. |
| 970 | FarmEco Enterprises, 262-B, Gulgasht Colony, Multan. | MEGAMOS 20% (w/v) SL (Appendix - A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 15.06.2002 | 14-06-2005 | | II | Insect. |
| 971 | Bayer CropScience (Pvt.) Ltd. Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900. | ATLANTIS 3.6% WG (30 g/kg + 6 g/kg) (App.-A) & Biopower (App.-B) | Mesosulfuron-Methyl + Iodosulfuron-Methyl-Sodium | annual grasses and broad-leaf weeds in wheat as a post-emergance herbicide. | | 05.08.2003 | 14.06.2005 | Revised | IV | Herb. |
| 972 | Jugnu Enterprises 2nd Floor, Arkay Square, Extention, Shahrah-e-Liaquat, Karachi-74000. | CURE 1.8% (w/v) EC (Appendix - A) | Abamectin | Cotton bollworms. | | 15.06.2002 | 14-06-2005 | | III | Insect. |
| 973 | Agrolet Chemicals Industries, 711/ X, D.H.A., Lahore Cantt. | AGROHIT 50% (w/w) WP (6% w/w + 44% Min. w/w) (Appendix-A) | Dimethomorph + Mancozeb | Potatoes - late blight, mildews, Alternaria; Vines - mildews; Tomatoes - mildews and Cucumbers - mildews. | | 28.06.2002 | 27-06-2005 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 974 | Agricides (Pvt.) Ltd., Marine Trade Centre, BC - 3, Kehkashan, Block - 9, Clifton, Karachi - 75600. | CURE 1.8% (w/v) EC (App.-A) & 95% (w/w) Tech. Min. (App.-B & C) | Abamectin | Cotton bollworms. | | 10.07.2002 | 09-07-2005 | | III | Insect. |
| 975 | Agrolet Chemicals Industries, 711/ X, D.H.A., Lahore Cantt. | VIGOR 1.8% (w/v) EC (Appendix-A) | Abamectin | Cotton bollworms. | | 11.07.2002 | 31-12-2002 | | III | Insect. |
| 976 | Al-Mehmood Chemicals, Suraj Ganj Bazar, Quetta. | LIANO 15% (w/v) EC (Appendix-A) | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | | 30.07.2002 | 29-07-2005 | | | |
| 977 | FMC United (Private) Limited 61-A Main Gulberg, Lahore. | AFFINITY 50 (w/w) WP (1.45% + 51.55% w/w) (Appendix-A) | Carfentrazone-ethyl + Isoproturon | Broad leave weeds and grasses in wheat. | | 16.08.2002 | 15-08-2005 | | III | Herb. |
| 978 | SC Dyestuffs & Chemicals (Pvt.) Ltd., 2nd Floor, Palace Cinema Bldg., Civil Lines, Karachi. | ISOMATE-C PLUS 82.5 gm/per 500 dispensers (Appendix-A) | Sex Pheromone (E,E-8, 10-Dodecadien-1-yl alcohol, 1-Dedecanol, 1-Tetradecaol) | Codling moths in fruit orchards. | | 24.08.2002 | 23-08-2005 | | BIO | Pheromones |
| 979 | FMC United (Private) Limited 61-A Main Gulberg, Lahore. | ACELAN 20% (w/v) SL (App.-A) & 92% Tech. (w/w) (App.-B) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 19.11.2002 | 18-11-2005 | | II | Insect. |
| 980 | Khirman Enterprises 344/B, Khakawani Street, Opp. Joyia Petrol Pump, Khanewal Road, Multan. | CHONGMANKE 1.8% (w/v) EC | Abamectin | Cotton bollworms. | | 02.12.2002 | 01-12-2005 | | III | Insect. |
| 981 | Welcon Chemicals (Pvt.) Ltd., Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | CLONSTAR 10% WP (w/w) | Chlorsulfuron | weeds in wheat. | | 12.12.2002 | 11-12-2005 | | III | Herb. |
| 982 | Weal-AG Corporation, Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | SINOFOS 80% WP (w/w) | Fosetyl Aluminium | Downy mildew of Cucurbits, Vegetables and Brassica, Citrus foot & root rot, Annular tree trunk base rot of orchards / Fruit trees, Phytophthora sp. of Apples, Strawberries and tomatos. | | 12.12.2002 | 11-12-2005 | | | |

## List of Companies Registration Form-17

| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
|---|---|---|---|---|---|---|---|---|---|---|
| 983 | Warble (Pvt.) Ltd.<br>Suit No. 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | BAOKE 25% WP (15% + 10% w/w) (Appendix-A) | Metalaxyl + Propamocarb Hydrochloride | Cucumber downy mildew & potatoes late blight. | | 01.01.2003 | 31-12-2005 | | | |
| 984 | Welgreen Chemical (Pvt) Ltd.<br>202, Latif Plaza, 103 - Ferozpur Road, Lahore. | BESTRAZINE 38% (w/v) SC (Appendix-A) | Atrazine | Weeds in maize, rice and Sugarcane. | | 01.01.2003 | 31-12-2005 | | III | Herb. |
| 985 | Pakistan Agro Chemicals (Pvt.) Ltd.<br>38 - C / IV, Block - 6, P.E.C.H.S. Karachi. | FASTER 7.5% (w/v) EC (Appendix-A) | Fenoxaprop-P-Ethyl+Diclofop Methyl | Annual and perennial grass weeds and wild oats in wheat, rye and triticale. | | 13.01.2003 | 12-01-2006 | | | |
| 986 | National Insecticides Co. (Pvt.) Ltd.<br>Jaffer Chamber, 28, Abdullah Haroon Road, Karachi - 74400. | HUMJAN 15% (w/v) EC (App.-A) & Tech. 90% (w/w) Min. (App.-B & C) | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | | 14.01.2003 | 13-01-2006 | | | |
| 987 | Agrolet Chemicals Industries<br>711/ X, D.H.A., Lahore Cantt. | ZEON 20% (w/v) SL (Appendix - A) & Tech. 95% (w/w) Min. (App.-B & C) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 16.01.2003 | 15-01-2006 | | II | Insect. |
| 988 | R.B. Avari Enterprises (Pvt.) Ltd.<br>Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | FORWARD 5% (w/v) EC (Appendix-A) | Quizalfop-p-ethyl | Annual grassy weeds in soybean, cotton and rape. | | 25.01.2003 | 24-01-2006 | | | |
| 989 | Bayer CropScience (Pvt.) Ltd.<br>Plot No. 23, Sector No. 22, Korangi Industrial Area, Karachi-74900. | K-Obiol 25 EC (25 g/l + 225 g/l) (Appendix-A) | Deltamethrin + Piperonyl Butoxide | Stroed grain pests. | | 31.01.2003 | 30-01-2006 | | Ib | Insect. |
| 990 | Agrolet Chemicals Industries<br>711/ X, D.H.A., Lahore Cantt. | Mie Chong Ling 1.8% (w/v) EC (App.-A) & 95% (w/w) Tech. Min. (App.-B) | Abamectin | Cotton bollworms. | | 15.02.2003 | 14-02-2006 | | III | Insect. |
| 991 | Agrolet Chemicals Industries<br>711/ X, D.H.A., Lahore Cantt. | ZEON 20% (w/w) SP (App.-A) & 95% Tech. Min. (w/w) (App.-B) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 19.02.2003 | 18-02-2006 | | II | Insect. |
| 992 | Pak China Chemicals<br>1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | SAOMANJING 15% (w/v) EC (App.-A) & 95% Tech. (w/w) (App.-B) | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Veg. Aphids & Whitefly. | | 21.03.2003 | 20-03-2006 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 993 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | Mie Chong Ling 1.8% (w/v) EC (App.-A) & 95% (w/w) Tech. Min. (App.-B) | Abamectin | Cotton bollworms. | | 21.03.2003 | 20-03-2006 | | III | Insect. |
| 994 | Welgreen Chemical (Pvt.) Ltd. 202, Latif Plaza, 103 - Ferozpur Road, Lahore. | MARWEL 20% (w/v) SL (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 10.04.2003 | 09-04-2006 | | II | Insect. |
| 995 | Weal-AG Corporation Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | ROCKET 15% (w/w) WP (Appendix-A) | Thifensulfuron - Methyl | Weeds in Wheat. | | 12.04.2003 | 11-04-2006 | | | |
| 996 | Agrolet Chemicals Industries 711/ X, D.H.A., Lahore Cantt. | Pencidor 72% (w/w) WP (70% w/w + 2% w/w) (Appendix-A) | Imidacloprid + Monomehypo | Cotton jassids, whitefly and thrips and rice borers, plant hopper & leaf roller as seed dressing. | | 28.04.2003 | 27.04.2006 | | | |
| 997 | Welcon Chemicals (Pvt.) Ltd. Suite # 18, 3rd Floor Shan Arcade, New Garden Town, Lahore. | GETRID 20% (w/w) SP (App.-A) & 95% Tech. (w/w) Min. (App.-B) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 07.05.2003 | 06-05-2006 | | II | Insect. |
| 998 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | RANI 20% (w/v) SL (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Dimand back moth and Tobacco aphids. | | 14.05.2003 | 13-05-2006 | | II | Insect. |
| 999 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | PENCIDOR 72% (w/w) WP (70% w/w + 2% w/w) (Appendix-A) | Imidacloprid + Monomehypo | Cotton jassids, whitefly and thrips and rice borers, plant hopper & leaf roller as seed dressing. | | 17.05.2003 | 16-05-2006 | | | |
| 1000 | R.B. Avari Enterprises (Pvt.) Ltd., Sasi Arcade Room No. 19, 4th Floor Block-7, Kehkashan Scheme-5, Main Clifton, Karachi. | KWICK 3% (w/w) G & Tech. Phorate 90% (w/w) & Carbofuron 97% (w/w) (Appendix-A, B, C & D) | Phorate + Carbofuran | Rice, Stem Borers & leaf folder Sugarcane, Borers Cotton, Jassids, aphids, whiteflies and thrips | | 24.05.2003 | 23-05-2006 | | | |
| 1001 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | MEGAMOS 20% (w/v) SL (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 24.05.2003 | 31.12.2003 | | II | Insect. |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 1002 | Arysta Agro Pakistan (Pvt.) Ltd. Office No.213, Second Floor, Business Avenue, 26-A, Block-6, P.E.C.H.S. Karachi. | SUCCESS 72% (64% w/w + 8% w/w) WP & Tech. Chlorothalonil 97% Min. (w/w) & Metalaxyl 98% (w/w) (App.-A, B & C) | Chlorothalonil + Metalaxyl | Downy mildew on cucurbits - Min. 200 gm / acre. | | 24.05.2003 | 23-05-2006 | | | |
| 1003 | Solex Chemicals (Pvt.) Ltd. Solex House 768, Mahmoodabad, Khanewal Road, Multan. | GETRID 20% (w/w) SP (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 30.05.2003 | 29-05-2006 | | II | Insect. |
| 1004 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | MEGAMOS 20% (w/v) SL (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 30.05.2003 | 31-12-2003 | | II | Insect. |
| 1005 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | CEETA 20% (w/v) SL (App.-A) & 98% Tech. (w/w) Min. (App.-B & C) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Dimand back moth and Tobacco aphids. | | 24.05.2003 | 23-05-2006 | | II | Insect. |
| 1006 | Farmers Equity (Pvt.) Ltd. 1st Floor, Mall Plaza, Mall Road, Multan Cantt. | MEGAMOS 20% (w/v) SL (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 07.06.2003 | 31-12-2003 | | II | Insect. |
| 1007 | Mian Pesticides (Pvt.) Ltd. 605-A, Block-A, Shah Rukn-e-Alam Colony, Multan. | CURE 1.8% (w/v) EC (Appendix - A) | Abamectin | Cotton bollworms. | | 07.06.2003 | 06-06-2006 | | III | Insect. |
| 1008 | Quality International Traders (Pvt.) Ltd. 9-Light Industrial Area, Model Town-B, Bahawalpur. | CURE 1.8% (w/v) EC (App.-A) & 95% (w/w) Tech. Min. (App.-B & C) | Abamectin | Cotton bollworms. | | 17.06.2003 | 16-06-2006 | | III | Insect. |
| 1009 | Syngenta Pakistan Limited. S - 50, S.I.T.E., Hawkes Bay Road, Karachi-75730. | PROCLAIM 019 EC (w/v) (Appendix-A) | Emamectin Benzoate | Cotton Heliothis. | | 19.06.2003 | 18-06-2006 | | | |

| List of Companies Registration Form-17 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Sl. No. | Name of Applicant | Brand Name | Product | Uses | | Registed Date | Receiving Date | New / Renewal / Revised | WHO Classi-fication | Product Classi-fication |
| 1010 | Vital Chemicals Corporation 10-A/2, Gulgashat Colony, Bosan Road, Multan. | MEGAMOS 20% (w/v) SL (Appendix-A) | Acetamiprid | Cotton jassids, Aphids, Whitefly and thrips, Vegetable and orchards aphids, Thrips, Leaf hopper, Whitefly, Leafminers, Diamond back moth and Tobacco aphids. | | 12.07.2003 | 11-07-2006 | | II | Insect. |
| 1011 | Pakistan Agro Chemicals (Pvt.) Ltd. 38 - C / IV, Block - 6, P.E.C.H.S., Karachi. | VIGOR 1.8% (w/v) EC (App.-A) & 95% (w/w) Tech. Min. (App.-B & C) | Abamectin | Cotton bollworms. | | 15.07.2003 | 14-07-2006 | | III | Insect. |
| 1012 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | CHEMPHY SUPER 10% EC (w/v) (Appendix-A) | S-Fenpropathrin | Vegetable Jassids, Whitefly, Aphids, Thrips, Bugs, Caterpillars, Cutworms, Stem Borers, Beetles & Fruit Whitefly, Psylla, Thrips, Scales, Leaf Miner, Caterpillars, Codling Moth, Weevils, Beetles, Leaf Horper. | | 07.08.2003 | 06-08-2006 | | | |
| 1013 | Nafees (Pvt.) Ltd. 18 - H, Vehari. | HUMJAN 15% (w/v) EC (Appendix-A) | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Vegetable Aphids & Whitefly. | | 07.08.2003 | 06-08-2006 | | | |
| 1014 | Matchless (Pvt.) Limited 34 - British Home, Rawalpindi Cantt. | HUMJAN 15% (w/v) EC (Appendix-A) | Pyridaben | Sucking pests of apple and citrus, Cotton thrips, jassids, mites, Vegetable Aphids & Whitefly. | | 20.08.2003 | 19-08-2006 | | | |
| 1015 | Commander Agro (Pvt.) Limited 75-Askaria Colony, Sher Shah Road, Multan Cantt. | MIE CHONG LING 1.8 % (W/V) EC (Appendix - A) | Abamectin | Cotton bollworms. | | 21.08.2003 | 20-08-2006 | | III | Insect. |
| 1016 | Pak China Chemicals 1 - Km Bhoptian Chowk, Defence Road off Raiwind Road, Lahore. | CHWASTOX 500 g/l (44.25% w/w) SL & 94% (w/w) Tech. (App.-A, B & C) | MCPA | Broad leaved weeds in wheat. | | 17.09.2003 | 16-09-2006 | | | |
| 1017 | DuPont Pakistan 2nd Floor, Bahria Complex-1, M.T. Khan Road, Karachi - 74000 | CURZATE M8 72% (w/w) WP (8% w/w + 64% w/w) (Appendix-A) | (Cymoxanil + Mancozeb) | Downy mildew *(Pseudoperonospora Cubensis)* on Cucumber & Litchi, Late blight (Phytophthora infestans) on Tomato & Potato and Tobacco blue mold (Peronospora tabacina). | | 19.08.2003 | 10.09.2003 | | | |

# Part - VI

## Pesticide Information of Sri Lanka

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## 1. Introduction

Sri Lanka is located at the Southern point of the Indian sub continent, between $5^0$ 54' and $9^0$ 52' North latitude and $79^0$ 39' and $81^0$ 53' East longitude. Its land area is 6561000 ha. Topographically island consists of a south – central mountainous region, which rises to an elevation of 2500 m, surrounded by broad lowland plains at an elevation of 0-300 m above sea level. From the mountainous region, nine major rivers and 94 other rivers drain across the lowlands into the Indian Ocean.

The climate is tropical overall, but it shows variations across the island due mainly to differences in rainfall and elevation. The rainfall shows seasonal fluctuations and is dependent on the South-West and North-East monsoon and on conventional and cyclonic effects. The mean temperature in the lowland areas is $27^0$ C in the wet region and $30^0$ C in the dry zone. It decreases with increase in altitudes, and in the mountain region the mean monthly temperature varies from $13^0$C to $16^0$C, with the night temperature occasionally dropping to around zero.

The country has been divided into climatic regions in many different ways. Generally three broad climatic regions are recognized: the wet zone, dry zone and intermediate zone. Whereas the dry zone is all lowlands, the other two zones are further divided on the basis of altitude. The island is divided into 46 agro-ecological regions where the annual rainfall & its distribution, and the altitude and soil groups are taken into consideration.

Sri Lanka is densely populated country with an estimated population of around 20,000,000 (2009). The economy of Sri Lanka is based on exports, industry and agriculture. On the average, the Gross Domestic Production (GDP) share of agriculture sector of the country is around 16.5% while the working forces engaged in agriculture sector is 32%. Rice is the main crop and farming rice is the most important activity for the majority of people living in rural areas. Other major food crops grown in the country are maize, legumes, vegetables and fruits. Plantation crops i.e. tea, rubber, coconut and export crops i.e. cinnamon, nutmeg, clove, cardamom, pepper occupy a large extent of the country especially in wet zone (AgStat, 2009).

Increased use of high yielding varieties, chemical fertilizer and favorable weather conditions are leading to multiplication and development of severe pest and diseases incidences in many crops. Vectors of the diseases not only for crops even for human and livestock are high in this condition. Therefore, a good number of pesticides are imported to the country to control these agents. It is estimated that over two billions Sri Lankan rupees are spent in each year for importation of chemical pesticides (Table 1). Pesticides are highly effective to control most of the pest problem in the country. However, other options i.e. biological control, cultural methods and integrated approaches are used to control some pests.

Pesticide poisoning is one of the major health problems in most of the countries. It includes acute poisoning and possible health effects arising from exposure to low levels of pesticides over a long period of time. In recent past, deliberate self-poisoning was the major health problem of rural Sri Lanka. However, rules and regulations of pesticides i.e. banning of class I pesticides, restricted use of some pesticides, control of importation have a positive impact on reduction of suicides indicated by a 50% reduction in 2005 compared with 47 per 100000 population in 1995. Presently, this number is further reduced due to the use of safer chemicals less toxic to human and education of farmers, retailers, distributors in safe handling, use and storage of pesticides (Reports of the Registrar of Pesticides, Department of Agriculture, Sri Lanka, 2008).

## 2. Brief history of chemical pesticide use and trends in pesticides use

Early reports on pesticide use were on insecticides for mosquito control. DDT was first known insecticide in Sri Lanka during world war 11 (1946) when it was procured to combat malaria by controlling the mosquito vectors. Indoor residual application of insecticides has been one of the major measures adopted for control of malaria in Sri Lanka since 1946. The malaria eradication programme was instituted in 1958 and progressed until 1977 with DDT. The use of DDT was extended to agricultural crops as well, in areas where it was used for the control of mosquitoes even before insecticide was officially recommended replacing traditional insecticidal solutions (e.g. soap solutions, nicotine solutions etc.). Arkotine D18, Didimac 25 EC, Decnol, Sillortox and DDT 50% WP were some agricultural and public health formulations used in Sri Lanka. DDT had been in use in tea lands from early 1950's until 1970 for the control of tea tortrix with concomitant severe mite out breaks in several estates.

Deldrin, another persistent organic pollutant (POP), was first recommended in 1961 for use against shot hole borer in tea. It has been used for a wide range of applications such as agricultural crop production, termite control for building construction and ready to use timber protection (Anon, 2006b).

Presently, about 150 different pesticides are used in the country. Pesticide imports and sales are presented in Table 1, 2 and 3. Figures show that there is an increase in use of insecticides, fungicides and weedicides from year 2002 to 2008. Although district-wise usage of some pesticides are available, crop-wise pesticide usage data are not available due to smaller size of the country and small extent of most of the crops.

**Table 1: Imports of pesticides to Sri Lanka during year 2003- 2008**

| | Year 2003 | | Year 2004 | | Year 2005 | | Year 2006 | | Year 2007 | | Year 2008 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Technical Grade Materials** | **Volume (mt)** | **CIF value US$/ 1000** | **Volume (mt)** | **CIF value US$/ 1000** | **Volume (mt)** | **CIF value US$/ 1000** | **Volume (mt)** | **CIF value US$/ 1000** | **Volume (mt)** | **CIF value US$/ 1000** | **Volume (mt)** | **CIF value US$/ 1000** |
| Insecticides | 216.39 | 1900.08 | 103.00 | 755.60 | 222.14 | 1754.20 | 128.38 | 1161.29 | 115.65 | 929.32 | 1298.20 | 2075.17 |
| Herbicides | 193.90 | 717.95 | 237.74 | 989.43 | 259.60 | 1329.45 | 207.94 | 950.53 | 88.30 | 362.85 | 178.12 | 8968.10 |
| Fungicides | 6.78 | 121.56 | 4.62 | 129.03 | 7.98 | 155.39 | 0.40 | 12.36 | 1.50 | 75.26 | 0.9 | 54.60 |
| Formulations | | | | | | | | | | | | |
| Insecticides | 1468.01 | 5925.87 | 1256.68 | 4877.51 | 1699.67 | 6694.50 | 1576.41 | 7543.23 | 1193.74 | 5401.12 | 1585.74 | 9988.58 |
| Herbicides | 2731.20 | 8200.60 | 3036.00 | 9438.60 | 3623.50 | 12433.30 | 3197.06 | 10859.68 | 4143.69 | 14211.41 | 3808.39 | 23348.46 |
| Fungicides | 785.40 | 2654.20 | 745.00 | 2504.50 | 891.60 | 3220.00 | 847.06 | 3194.63 | 722.25 | 2171.07 | 872.64 | 3911.35 |

Source: Registrar of Pesticides, Department of Agriculture, Sri Lanka.

Website- www.agridept.lk

**Table 2: Volumes of pesticide sales in Year 2001 and 2002**

| Category | Product | Quantities (MT/KL) | |
|---|---|---|---|
| | | 2001 | 2002 |
| Insecticides | Carbofuran 3 G | 953.09 | 1104.80 |
| | (a) Chlorpyrifos 20 EC | 21.40 | 16.10 |
| | (b) Chlorpyrifos 40 EC | 224'30 | 308.60 |
| | Dimethoate 40 EC | 147.20 | 180.30 |
| | Quinalphos 25 EC | 37.47 | 30.50 |
| | Carbaril 85 WP | | |
| | Pyrethroids | 8.99 | 8.96 |
| | Diazinon 50 EC | 22.86 | 21.40 |
| | Diazinon 5 G | 310.25 | 403.50 |
| | (a) Phenthoate 50 EC | 47.50 | 41.90 |
| | (b) Phenthoate 5 D | 112.76 | 135.90 |
| | BPMC 50 EC | 111.57 | 111.20 |
| | Profenofos 50 EC | 36.80 | 41.30 |
| | Acephate 75 SP | 3.92 | 6.26 |
| | Abamectin 1.8 EC | | |
| | **Sub-total (Including special products)** | **2266.24** | **2502.38** |
| Weedicides | Alachlor 48 EC | 6.74 | 9.1 |
| | Diuron 80 WP | 27.90 | 39.70 |
| | 3,4-DPA 36 EC | 893.20 | 901.70 |
| | Glyphosate 36 ? | 922.70 | 976.30 |
| | (a)MCPA 40 ? | 363.07 | 438.00 |
| | (b) MCPA 60 ? | 196. 74 | 249.20 |
| | Oxyfluorofen 24 EC | 5.57 | 9.90 |
| | **Sub-total (Including special products)** | **2925.36** | **2818.90** |
| Fungicides | Mancozeb 75 WP, 80 WP | 236.80 | 315.10 |
| | Sulpher 80 WP/WG | 156.67 | 141.40 |
| | Cu Oxychloride 50 ? | 101.56 | 82.70 |
| | Captan 50 WP/80 WP | 17.20 | 16.70 |
| | Thiram ? ? | | |
| | Maneb ? ? | 42.60 | 57.30 |
| | Cu Hydroxide ? ? | | |
| | Carbendezim 50 WP | 7.42 | 10,1 |
| | Metalixil ? ?+ Mancozeb ? ? | | |
| | Hexaconazole 5 SC | | |
| | Propiconazole 25 SC | | |
| | **Sub-total (Including special products)** | **768.50** | **898.50** |
| Fumigant | Aluminium phosphide | 1.25 | 1.51 |

Source: Registrar of Pesticides, Department of Agriculture, Sri Lanka.

Website- www.agridept.lk

**Table 3: Volumes of pesticide sales and No of suppliers of each chemical in Year 2008**

| CATOGERY | | PRODUCT | NO. OF suppliers | QTY (MT/KL) |
|---|---|---|---|---|
| Insecticides | 1 | BPMC 50 EC | 4 | 98.94 |
| | 2 | Carbofuran 3 G | 5 | 1085.49 |
| | 3 | (a) Chloropyripos 20 EC | 0 | 0 |
| | | (b) Chloropyripos 40 EC | 6 | 302.05 |
| | 4 | Dimethoate 40 EC | 3 | 191.63 |
| | 5 | Quinalphos 25 EC | 3 | 28.52 |
| | 6 | Carbaryl ? ? | 2 | 4.12 |
| | 7 | Pyrethroides ? ? | 4 | 5.8 |
| | 8 | Diazinon 50 EC | 3 | 21 |
| | 9 | Diazinon 5 G | 3 | 473.79 |
| | 10 | Phenthoate 50 EC | 3 | 22.22 |
| | 11 | Phenthoate 5 D | 4 | 219.31 |
| | 12 | Propanofas 50 EC | 4 | 52.27 |
| | 13 | Acephate 75 ? | 2 | 47.18 |
| | 14 | Abemectin 1.8 EC | 2 | 11.37 |
| | 15 | Imidacloprid 20 SL | 4 | 27.48 |
| | | **Sub-total** | | 2591.17 |
| Weedicides | 1 | Alachlor 48 EC | 2 | 9.12 |
| | 2 | Diuron 80 WP | 3 | 62.82 |
| | 3 | 3-4 DPA 36 EC | 3 | 317.73 |
| | 4 | (a) MCPA 40 S | 2 | 232.13 |
| | | (b) MCPA 60 S | 3 | 177.76 |
| | 5 | Oxyfluorofen 24 EC | 2 | 6.33 |
| | 6 | Metrybuzin 70 WP | 2 | 3.29 |
| | 7 | Glyphosate 36 SL | 7 | 15561.94 |
| | | **Sub-total** | | **2371.12** |
| Fungicides | 1 | Mancozeb 80 WP | 2 | 302.6 |
| | 2 | Sulphur 80 (WP+WG+DF) | 4 | 157.31 |
| | 3 | (a) Cu Hydroxide 50 WP | 2 | 12.07 |
| | | (b) Cu Oxychloride 50 WP | 2 | 27.76 |
| | 4 | Captan 80 WP | 2 | 19.6 |
| | 5 | Metalixil+ Mancozeb ? ? | 3 | 17.56 |
| | 6 | Propiconazole 25 EC | 2 | 1.71 |
| | 7 | Thiram 80 WP | 2 | 9.16 |
| | 8 | Carbendezim 50 ? | 2 | 14.04 |
| | 9 | Hexaconazole 5 SC | 3 | 18.9 |
| | 10 | Chlorothalonil 50 SC | 2 | 26.98 |
| | | **Sub-total** | | 607.69 |
| Fumigants | 1 | Aluminium phosphide | 2 | 2.89 |

Source: Registrar of Pesticides, Department of Agriculture, Sri Lanka.
Website- www.agridept.lk

## 3. Brief information about the country in relation to major crops, crop losses due to insect pest and disease attack

Sri Lanka is a small island in Indian Ocean with the land area of 6.561 million ha. About 3,03,068 ha area of it is covered with large inland water reservoirs. Total agriculture land area is around 4.25 million hectare of which 1.02 ha are homesteads, and 1.8 million hectare of the land area are covered with forest. The major crops grown in the country are paddy, tea, coconut, and rubber. Large amount of area is under spice crops i.e. cinnamon, pepper, clove, nutmeg etc. Other areas are occupied by coarse grains, legumes, fruits and vegetables mostly in small-scale level. There are two major cropping seasons *i.e* wet season called Maha and dry season called Yala. Extent under each major crop/crop group in different seasons and the annual production are listed in Table 4 (AgStat, 2009).

**Table 4: Area and production of major crops in Sri Lanka in 2008**

| Crop/crop group | Extent (ha) | | | Production (Mt) |
|---|---|---|---|---|
| | Maha (Wet season) | Yala (Dry season) | Annual | |
| Paddy | 581600 | 471395 | 1052995 | 3875200 |
| Maize | 43173 | 8744 | 51917 | 112527 |
| Kurrakkan | 5328 | 1056 | 6384 | 6552 |
| Greengram | 7130 | 2233 | 9363 | 8878 |
| Cowpea | 7690 | 4496 | 12186 | 11952 |
| Soyabean | 246 | 1007 | 1253 | 3032 |
| Blackgram | 7028 | 1293 | 8321 | 9477 |
| Groundnut | 7725 | 2549 | 10274 | 10251 |
| Onion | 2823 | 6262 | 9085 | 106661 |
| Chilli | 10136 | 4920 | 15056 | 63753 |
| Potato | 1618 | 3251 | 4869 | 74814 |
| Sweet potato | 4160 | 2964 | 7124 | 52466 |
| Manioc | 14313 | 9948 | 24261 | 240731 |
| Vegetables | 55328 | 35274 | 81737 | 758393 |
| Banana | Perennial | Perennial | 47682 | 397452 |
| Pineapple | crop | crop | 4902 | 54350 |
| Papaya | - | - | 6276 | 24935 |
| Mango | - | - | 25747 | 65109 |
| Rambutan | - | - | | |
| Orange | | | 5149 | 3606 |
| Cashew | | | 22472 | 6625 |
| Cinnomon | | | 30041 | 15924 |
| Cardomom | | | 2948 | 71 |
| Pepper | | | 30866 | 13175 |
| Nut meg | | | 1107 | 4702 |
| Clove | | | 7870 | 8053 |
| Cocoa | | | 2377 | 735 |
| Coffee | | | 8098 | 3035 |
| Tea | | | 22700 | 304.60 mn kgs |
| Rubber | | | 120000 | 117.60 mn kgs |
| Coconut | | | 395000 | 2869 mn nuts |

(Source: AgStat, 2009, Department of Agriculture, Sri Lanka)

One of the major constrains to achieve high productivity of above crops is the infestation by insect pests and bacterial, fungal and viral infections and weeds. The most important pests of these crops are summarized below. The important pests are insects, mites, nematodes, fungi and weeds in vegetables, fruits, flowers, rice, field crops and tuber crops. The pesticide recommendations to control these pests are published by Department of Agriculture (DOA), Sri Lanka. General information including those on insecticides, fungicides and herbicides available from such publication of 2009 are presented in Appendix 1, 2, 3 and 4, respectively.

## 3.1 Rice pests

Several hundreds of species of phytophagous insects inhabit rice ecosystems. However, few insects are considered as pests. The major rice pests in Sri Lanka are reported in Table 5 (Kudagamage and Nugalliyadda, 1995). In the last few decades, the relative importance of these insects has changed. Insects such as brown plant hopper (BPH), rice bug and leaf folders that are relatively specific have become more important. Additionally, incidence of black bug (*Scotinophora laurada*), and rat (*Bandicota bengalensis*) have been reported from localized areas in the country (Nugaliyadda *et al*. 2000). Among the rice diseases in Sri Lanka, rice blast (*Magneporthae grisea*), Bacterial leaf blight (*Xanthomonas campestris* ) and sheath blight (*Rizoctonia solani* ) continue to cause significant yield losses depending on varieties grown, environmental condition during the cropping season, agro ecological zone and agronomic practices adapted (Table 5). In addition, grain sterility and premature senescence of rice crops and yellowing have been frequently reported as important field problems (Nugaliyadda *et al*. 2000).

**Table 5: Major insect pests and diseases of rice in Sri Lanka**

| | |
|---|---|
| Insect pests | Thrips- (*Stenchaetothrips biformis*)<br>Gall midge- (*Oreseolia oryzae*)<br>Stem borer- (*Scirpophaga incertulas*)<br>Leaf folder- (*Cnaphalocrocis medinalis*)<br>Plant hoppers- (*Nilaparvata lugens, Sogatella furcifera*)<br>Rice bug (*Leptocorisa oratorius*)<br>Rice mites (*Oligonychus* spp., *Hemitarsonemus* spp. |
| Diseases | Rice neck & leaf blast (*Magnaporthy grasia)*<br>Sheath blight, (*Rhizoctonia solani)* and Bacterial (*Xanthomonas*) leaf blight |

## 3.2 Other Field Crops

Economically important pests and diseases of other field crops are summarized in Table 6 and 7, respectively. In chilli, the single most limiting factor of cultivation is the infestation by pests, which results in a condition popularly known as chilli leaf curl complex. The main causal factor is infestation by various thrips species (Wijeratna Banda, 1997). The important reason for emergence of thrips as the most important pest of chilli is indiscriminate use of pesticides by the farmers (Chandasena *et al*., 1997). Chilli is also affected by an array of virus diseases vectored by thrips, mites, white flies and aphids. Narrow leaf disorder of chilli was reported about 15 years back but the exact causal agent is not yet known. This is, perhaps, a soil and water borne disease and is attributed to physiological / chemical factors in the soil. The major diseases of chilli include Anthracnose and collar rot disease.

In cowpea and green gram, post - flowering pests are more important than seedling pests. The single most important seedling pest is bean fly, *Ophiomyia phaseoli*. Post - flowering pests include legume pod borer, *Maruca testulalis* and two other pod bore species *Helicoverpa armigera* and *Lampides boeticus*. In the recent time, the incidence of flower thrips is on the increase. The storage pests of green gram and cowpea are more cosmopolitan and include various *Callosbruchus* species.

Yellow mosaic virus disease is the most serious disease in green gram and black gram. Collar rot is a common soil born disease in cowpea if the cultivation is repeated in the same land (Rajapakse *et al*. 2001, Wijethilaka, 2001)

The onion purple blotch is a serious disease in the maha season (wet season) and is difficult to control by fungicides. Hence onion cultivation is mostly carried out in the yala (dry season). Leaf twister disease of onion is another disease of onion of recent occurrence caused by combination of fungi, *Colletotrichum* and *Fusarium* (Rajapakse *et al*., 2001). Onion thrips and leaf eating caterpillars are most important insect pests of onion. Stem borer and grain borer are the most important pests of Maize. Sheath and stalk rot and rust are the important diseases of maize.

**Table 6: Economically important pest of other field crops in Sri Lanka**

| Crop | Insect pest |
|---|---|
| Onion | Thrips- *Thrips tabaci*, Onion caterpillar- *Spodoptera litura, Spodoptera exigua* |
| Chilli | Thrips- *Scirothrips dorsalis*, Aphids- *Aphis gossypii, Myzus persicae*, White fly- *Bemisia tabasi*, mites- *Hemitarsonemus latus*, Chilli- pod borer *Helicoverpa armigera, Spodoptera litura* |
| Green gram, Black gram | Bean fly- *Ophiomyia phaseoli*. |
| Soya bean, Cowpea, | Pod borer- *Maruca testulalis, ,Helicoverpa armigera , Lampides boeticus*. *flower thrips and Callosbruchus* |
| Ground nut | Leaf eating caterpillars, Thrips |
| Maize | Stem borer- *Sesamia* spp. *Chilo partellus*<br>Grain borer- *Helicoverpa armigera* |

Source: Seasonal reports, Field crops research and development institute, Maha- Illuppallama

**Table 7: Economically important diseases of other field crops in Sri Lanka**

| Crop | Disease |
|---|---|
| Onion | Bulb rot- *Fusarium* and *Sclerotium* spp., Purple blotch- *Alternaria porri*, Downey mildew- *Peronospora destructor*, Leaf twister disease- *Colletotrichum gloeosporioides* and *Fusarium oxysporum*, Bacterial soft rot- *Ralstonia solanacearum* |
| Chilli | Damping off- *Pythium* spp., *Rhizoctonia solani*, *Fusarium* and *Macrophomina* spp. Antracnose- *Colletotrichum capsici,* Leaf spot- *Cercospora capsici*, Powdery mildew- *Oidiopsis* spp. , Collar rot- *Sclerotium rolfsii*, Bacterial wilt- *Ralstonia solanacearum* |
| | Chilli mosaic virus, Tobacco mosaic virus (TMV), Cucumber mosaic virus (CMV), |
| Green gram and Black gram | Potato viruses |
| Soya bean | Leaf spot- *Cercospora canescens* and *Cercospora cruenta*, Powery mildew- *Erysiphae* spp., Rust- *Uromyces appendiculata*, Yellow mosaic virus (YMV) |
| | Purple seed stain- *Cercospora kikuchi*, Charcoal rot- *Rhizoctonia spp. Macrophomina phaseolina*, Bacterial pustule- Xanthomonas phaseoli , Bud blight, Yellow mosaic virus (YMV) |
| Cowpea | Collar rot- *Pythium* spp., *Rhizoctonia* spp., *Sclerotium rolfsii Fusarium* spp. Antracnose- *Colletotrichum lindamuthium,* Web blight- *Rhizoctonia solani* |
| Maize | Leaf spot- *Helminthosporium* spp., Sheath rot- *Rhizoctonia* spp., Stalk rot- *Diplodia zeae*, Rust disease |
| Ground nut | Leaf spots- *Cercospora arachidicola, Cercospora personata,* Collar rot- *Rhizoctonia* spp., *Sclerotium rolfsiii Fusarium* spp., Southern blight- *Rhizoctonia* spp. Bud necrosis virus |

Source: Seasonal reports, Field crops research and development institute, Maha- Illuppallama, Sri Lanka

## 3.3 Vegetables, Fruits and Tuber Crops and Potato

There are over 200 pests recorded from vegetables in the country (Table 8 and 9). However, only 20 to 30 are economically important. In recent years, several new pests have emerged probably due to accidental introductions. A new leaf miner, *Liroimyza sataivae* was recorded in 1993 from vegetable crops while *L. huidobrensis* was identified in 1997 from up country area (Wijesekara, 1997). These two species are well established and particularly *L. huidobrensis* cause economic damage to various vegetables and potato crops.

The different pests associated with mushroom and leafy vegetables became important after the wide scale cultivation.

The sucking pest complex particularly the incidence of various thrips species is on the increase. In addition to direct damage, these insects are responsible for the transmission of various diseases.

Sweet potato weevils remain to be the major insect of sweet potato since its commencement of cultivation in the country during the colonial times. It can reduce the yield, quality and storage life of tubers. Cocoyam and Diascorea are relatively free from infestation of insects. Only pest of economic significance is corm and yam beetle.

Bacterial wilt caused by *Ralstonia solanacearum* is one of the most important diseases in solanaceous crops like tomato, brinjal and capsicum in the wet zone of Sri Lanka.

Regular spraying of fungicides is necessary to manage early and late blights of tomato especially, in the wet season. Occurrences of virus diseases of tomato are on the increase especially, with the introduction of exotic hybrid varieties.

Powdery mildew is a very common disease of all vegetable and severe incidences are experienced in dry and windy climatic conditions in dry season mainly from June to August, okra yellow vein mosaic virus transmitted by white fly is one of the important diseases of okra.

Club root of cabbage caused by *Plasmophora* is a common soil borne disease in the up - country of Sri Lanka. This is kept under low levels by cultural practices, as there is no effective fungicide for this disease. This disease does not occur in low country areas where temperature is high. Seedling rot and collar rot of bean are problems in the early stage of the crop while anthracnose, rust and leaf spots are also considered serious problem in the up- country areas. Bean yellowing is one of the most important problems in bean cultivation and causal agent is recently identified as white fly transmitted Horse gram yellow mosaic virus.

Cucurbits are important vegetable crops in Sri Lanka. A major pest of cucurbits is Melon fly. Powdery and downy mildew cause severe economic damage to the crop. Several viruses i. e. Cucumber mosaic virus (CMV), Papaya ring spot virus (PRSV), Cucumber green mottle mosaic virus (CGMMV) are involved in yellowing syndrome of bitter gourd (Seasonal Reports, Horticultural crops research and development institute, Gannoruwa, Sri Lanka, 2009).

Cultivation of potato is restricted mainly to the cooler (up- country) areas of Sri Lanka because of the high incidences of bacterial wilt in mild climatic conditions. Early and late blight are most damaging fungal diseases which need regular fungicide sprays to keep this disease under control. Black leg disease caused by *Erwinia carotovora* has become important problem recently. Several viruses such as potato virus X, Y, M, S, and leaf curl virus are identified in potato cultivation of Sri Lanka but potato virus X and potato leaf curl virus are more economically important than others (Rajapakse et al., 2006, Seasonal Reports, Agriculture Research Station, Seta Eliya, Sri Lanka).

**Table 8: Economically important pest of vegetable crops in Sri Lanka**

| Crops | Pest |
|---|---|
| Beans and pulses | Bean fly- *Ophiomyia phaseoli*, Legume pod borer- *Maruca vitrata, Helicoverpa armigera, Lampides boeticum* |
| Cabbages | *Plutella xylostella* (DBM), *Spodoptera litura* |
| Potato | Tuber moth- *Phthorimaea operculella*, Leaf miner- *Liriomyza huidobrensis*, Cyst nematode- *Globodera rostochinensis* |
| Tomato | Fruit borer- *Helicoverpa armigera* |
| Brinjal | Shoot and fruit borer- *Leucinodes orbonalis* |
| Cucurbits | Melon fly- *Bactrocera cucurbitae* |
| Chilli/capsicum | Thrips- *Scirtothrips dorsalis*, Mites- *Hemitarsonema latus* |

Source: Seasonal reports, Horticultural crops research and development institute, Gannoruwa, Sri Lanka

**Table 9: Economically important diseases of vegetable crops in Sri Lanka**

| Crops | Diseases |
|---|---|
| Beans | Bean yellowing- (Horse gram mosaic virus transmitted by white fly), Rust- *Uromyces appendiculatus*, Fungal root rot |
| Cabbages | Ring spots- *Mycosphaerella* sp. |
| Potato/Tomato | Viruses transmitted by white fly, aphids, Blight- *Alternaria solani* and *Phytophthora infestans*, *Ralstonia* Bacteria wilt |
| Brinjal | Bacteria wilt |
| Cucurbits | Yellowing caused by several viruses (CMV, PRSV, CGGMV, SYMV etc.), Downy mildew- *Peronospora* spp. |
| Chilli/capsicum | Anthracnose- *Colletotrichum* spp., Viruses- CMV, CVMV |

Source: Seasonal reports, Horticultural crops research and development institute, Gannoruwa, Sri Lanka

## 3.4 Fruit Pests

Fruit flies are the most important pests of different fruit crops. An island wide fruit fly survey has revealed the presence of 25 species of which eight species were identified. They are: *Bactocera dorsalis*, *B. kandiencis, B. correcta, B. zonata, B. versicolor, B. cucurbitae, B. tau, B. candate*, *B.nigrotibialis, B. gavisa and B. verbasciflolial* (Anon, 1995).

Two species of thrips i.e. *Selenothrips rubrocinctus* and *Scirtothrips dorsalis* have been identified as casual factors of death of mango seedlings (Anon, 1997)

Panama disease caused by *Fusarium oxysporium cubensi* race 1 is endemic in soils where banana is cultivated and incidences are very high in the most agroclimatic zones where highly susceptible varieties like Kolikuttu (silk), Embun (Gross Michel) cannot be cultivated continuously. Variety Ambul (Mysoor) is found to be resistant to panama disease (Rajapakse et al., 2005). Virus diseases viz., bunchy top, cucumber mosaic virus, banana streak virus, and banana bract mosaic have spread fast causing colossal losses in commercial cultivations. Root weevil (*Cosmopolites sordidus*) and corm weevil (*Odoiporus longicollis*) are other serious problem in banana cultivation in the country.

Papaya ring spot virus is wide spread in the wet zone. Therefore, commercial cultivations are restricted to dry zone of Sri Lanka. Over 95% of the citrus plants are infected with tristeza virus and this disease significant effect on the productivity of the crop (Rajapakse et al., 2009). Pineapple wilt caused by clostro virus has spread most of pineapple cultivation wet and intermediate zones and caused severe yield losses.

Anthracnose of mango and avocado caused by *Colletotrichum* spp. at flowering and at post harvesting stage cause severe losses if not controlled. In addition stem end rot causes great damage in post harvest handling during poor storage and transport conditions.

Powdery mildew has become a serious threat that to rambutan cultivation recently, with the occurrence of off seasonal bearing in the past few years and yield reduction may rise up to 100% (Rajapakse et al., 2006).

**Table 10: Some economically important pest of fruit crops in Sri Lanka**

| Crops | Diseases |
|---|---|
| Mango | Fruit fly- *Bactrocera dorsalis,* Leaf hoppers- *Idioscopus clypealis, I. niveosparus* and *Amritodus brevistylus,* Seed weevil- *Stenochetus mangiferae*, Leaf cutting weevil- *Deporous marginatus* |
| Pineapple | Mealy bug- *Dysmicoccus brevipes* |
| Banana | Root weevil (*Cosmopolites sordidus*) and corm weevil (*Odoiporus longicollis*) |
| Citrus | Leaf miner- *Phyllocnistis citrella*, scale- *Aspidiotus destructer*, Mite- *Panonychus citri*, Aphids- *Toxoptera auranti*, |
| Papaw | Mealy bug- *Paracoccus marginatus* |

Source: Seasonal reports, Horticultural crops research and development institute, Gannoruwa, Sri Lanka

**Table 11: Some economically important diseases of fruit crops in Sri Lanka**

| Crops | Diseases |
|---|---|
| Banana | Fusarium wilt, Sigatoka leaf spot- Mycospherella musae, Viruses- Bunchy top, CMV, Streak, and bracket mosaic |
| Pineapple | Wilt- clostero virus, Heart rot- *Phytophthora* sp. |
| Papaya | Papaya ring spot virus, *Phytophthora* and *Colletotrichum* fruit rot |
| Mango | Anthracnose- *Colletotrichum gloeosporioides*, Stem end rot- *Botriodiplodia theobromae, Colletotrichum* spp. |
| Citrus | Tristeza virus, *Phytophthora* root rot and gummosis |
| Rambutan | Powdery mildew- *Oidium* sp. |
| Guava | Fruit canker- *Pestalotiopsis* sp., Anthracnose- *Colletotrichum* sp. |

Source- Seasonal reports, Horticultural crops research and development institute, Gannoruwa, Sri Lanka

Major pests of tea, rubber coconut, spice crops and other export oriented crops are summarized in Tables 12 - 16.

**Table 12. Pest and Diseases of Tea with its casual organism**

| Pest/disease | Causal agent/s |
|---|---|
| Shot-hole borer | *Xyleborus fornicatus* |
| Tea tortrix | *Homona caffearia* |
| Low country live wood termites | *Glyptotermis dilatatus, Neotermes greeni* |
| Up-country live wood termite | *Postelectrotermes militaris* |
| **Nematodes**: | |
| Root lesion nematode | *Pratylenchus loosi* |
| Burrowing nematode | *Radopholus similes* |
| Diseases | |
| Blister blight | *Exobasidium vexans* |
| Black blight | *Rizoctonia solani* |
| Horse-hair blight | *Marasmius equicrinis* |
| Red root | *Poria hypolateritia* |
| Black root | *Rosellinia arcuata* |
| Charcoal root | *Ustulina deusta* |
| Brown root | *Phellinus noxious* |
| White root | *Rigidoporus microporus* |

Source: Tea Research Institute of Sri Lanka, Email:postmast@tri.ac.lk

**Table 13. Pest and diseases of Rubber**

| Pest/disease | Causal agents |
|---|---|
| Root diseases: | |
| White root disease | *Rigidoporus microporus* & *R. lignosus* |
| Brown root disease | *Phellinus noxius* |
| Collar Rot | *Ustulina deustai* |
| Root rot | *Poria hypobrunnea* |
| Black root disease | *Xylaria thwaitesli* |
| Fusarium wolt | *Fusarium solani* |
| Root canker and sudden wilt | *Nattrassia mangiferae* |
| Collar and hypocotyls rot | |
| Root knot nematode | *Sclerotium rolfsi* |
| | *Meloidagyne incognita* |
| Stem & Branch Diseases: | |
| Pink diseases | *Corticium salmonicolor* |
| Stem rot | *Phellinus noxius* |
| Die-back | *Colletotrichum, Phytophthora spp., Corynespora* sp |
| Thread blight | *Marasmius cephella, M. palmivorus* |
| Black stripe | *Phytophthora* spp. |
| Mouldy rot | *Ceratocystis fimbriata* |
| Horse hair blight | *Marasmius equierinins* |
| | *Corynespora cassiicola* |
| Leaf fall disease | *Oidium heveae* |
| Powdery mildew | *Colletotrichum gloeosporioides, C. acutatum* |
| Colletotrichum leaf disease | *Phytophthora sp.* |
| Phytophthora leaf fall | *Guignardia heveae* |
| Guignardia rim blight | *Aschersonia sp.* |
| Nodules on leaves | *Meliola sp[.* |
| Sooty mould | *Drechslera heveae* |
| Bird's eye spots | *Thanatephorus cucumeris* |
| Target leaf spots | *Cephaleuros parasiticus* |
| Red rust – Algae | |

Source: Rubber Research Institute, Sri Lanka

**Table 14. Pest and disease of coconut**

| Pest/disease | Causal agents |
|---|---|
| Coconut mites | *Aceria guerreronis* |
| Caterpillar | *Opisina arenosella* |
| Red weevil | *Rhynchophorus ferrugineus* |
| Black beetle | *Oryctes rhinoceros* |
| Scale | *Aspidiotus destructor* |
| Leaf minaer | *Promecrtheca cumingi* |
| Leaf rot | *Cerotosystis paradoxa, Fusarium solini, Colletotrichum* spp |
| Bole and root rot | *Ganadorma* sp. |
| Bud rot | *Phytophthora palmivora* |
| Leaf blight | *Pestalozzia palmarum, Drechsiera incurvata* |
| Stem bleeding | *Ceratocytis paradoxa* |
| Collar rot | Soil bacteria |
| Coconut wilt | Phytoplasma |

Source: Coconut Research Institute, Sri Lanka

**Table 15. Pest and disease of sugarcane**

| Pest/disease | Causal agents |
|---|---|
| White leaf disease | Phytoplasma |

**Table 16. Pest of spices and other export crops**

| Crop | Pest/disease | Causal agent |
|---|---|---|
| Pepper | Pepper Thrips | *Gynaikothrips karny* |
| | Shoot borers | *Lesperyesia bemidoxa* |
| | Leaf eating beetles | *Aulacophora spp.* |
| | Leaf not | *Psylid sp.* |
| | Quick wilt (foot rot) | *Phytophthora palmivora* |
| | Slow wilt | *Rhizoctonia sp., Fusarium sp., Meloidogyne sp.* |
| | Leaf rot | *Phytophthora palmivora, Pestilotia sp., Colletotrichum sp.* |
| | Algae leaf spots | *Cephaleuros virescens* |
| Cinnomon | Little leaf | Viruses |
| | Gall forming mites | *Erioplytes boisi* |
| | Stem borer | *Synanthidon spp.* |
| | Jumping plant louse | *Trioza cinnamini* |
| | Leaf spots/ blight | *Colletotrichum gloeosporioides* |
| | Black shooty mould | *Stenella* sp. |
| Cardamom | Blister on leaves | *Exobasidium cinnamomi* |
| | Algae leaf spots | *Cephaleuros virescens* |
| | Shoot and capsule borer | *Dichocrocis punctiferalis* |
| | Damping off | *Pythium sp., Rhizoctonia solani* |
| | Nursery leaf spots | *Phyllosticta electtaria* |
| | Leaf blight | *Mycosphaerella sp.* |
| Cocoa | Capsid bug | *Helopeltis ceylonensis* |

| Crop | Pest/disease | Causal agent |
|---|---|---|
| | Mealy bug | *Planococcus citri* |
| | Leaf spots | *Cercospora sp.* |
| | Leaf rust | *Phakospora elettariae* |
| Coffee | Sucking bugs | *Helopetis ceyloneneis, Planococcus citri* |
| | Pod rot/stem canker | *Phytophthora palmivora* |
| | Nematodes in nursery | *Pratylenchus* spp. |
| | Damping-off | *Rhizoctonia solani* |
| | Leaf rust | *Hamileia vastrtrix* |
| | Black sooty mould | *Capnodium sp* |
| | Brown eye spots | *Cercospora coffeicola* |
| | Coffee berry borer | *Hypothenemus hampei* |
| | Coffee twig borer | *Xyleborus morstatti* |
| | White grubs | *Anomala sp., Holotrichia* sp. |
| | Red stem borer | *Zeuzera coffeaa* |
| | Scale insects | Soft green scale- *Coccus viridis,* Helmet scale- *Saissetia coffeae* |
| | Root lesion nematodes | *Pratylenchus coffeae* |
| Nutmmg | Borer | *Areaocerus fasciculatus* |
| Clove | White grubs | *Anomala sp., Holotrichia* sp |

Apart from pests, weeds also cost significant yield losses. Invasive weeds are much more economically significant considering their effect on the bio- diversity. Alien invasive plants of national significance are reported in Table 17.

**Table 17: Alien invasive plants of national significance in Sri Lanka**

| Plant spp | Common names |
|---|---|
| *Salvinia molesta* | Salvinia (E) |
| *Eichbormia crassipes* | Water hyacinth(E), Japan jabara(S) |
| *Moimosa pigra* | Giant sensitive plant (E), Yoda nidikuba(S) |
| *Annona glabra* | Was anoda (S) |
| *Miconia calvesens* | Miconia(E) |
| *Myroxylon balsamum* | Balsum tree(E), Kattakumanchal(S) |
| *Lantana camera* | Pricky Lantana (E), Gandapana, Bovitiya (S) |
| *Wedelia trilobata* | Aruna devi (S) |
| *Clidermia birta* | Hairy cliderma(E) |
| *Clusia rosea* | Gal goraka (S) |
| *Opuntia dilenii* | Pathok(S) |
| *Prospis juliflora* | Mesquite(E) |
| *Swietenia macrophylla* | Mahogany(E,S) |
| *Parthenium hysterophorus* | - |
| *Alternanthera philoxeroides* | Alligator Weed (E) |

Source MOEF 1999 E-English, S- Sinhaleese

## 3.5 Crop losses due to insect pest and disease attack in major crops

Crop losses due to most of the insect pest and diseases varied according to the season, climatic condition, crop varieties etc. Generally, in maha (Wet) season, fungal and bacterial disease incidences are high and virus diseases and insect damages are low and vice versa in yala (Dry) season. Some of the information on estimated yield loss due to pests of rice is presented in Table 18. In other crops, yield losses due to pest or diseases are rarely available. The available information is presented in Table 19.

**Table 18: Estimated crop losses due to pest of Rice**

| Pest | Climatic zone and season | Estimated yield loss |
|---|---|---|
| Thrips<br>*Stenchaetothrips biformis* | Dry Zone (DZ),<br>Intermediate Zone (IZ)<br>Especially under rainfed condition in late sown crops. | >50% under severe infestation |
| Gall midge<br>*Oreseolia oryzae* | DZ, IZ during Maha season<br>Wet Zone (WZ) during Yala season | 10-30% under severe infestation |
| Stem borer<br>*Scirpophaga incertulas* | DZ and IZ | Not estimated |
| Leaf folder<br>*Cnaphalocrocis medinalis* | DZ and IZ during Maha season | 5-25% |
| Brown plant hopper<br>*Nilaparvata lugens* | Island wide | 10-50% |
| Rice bugs<br>*Leptocorisa oratorius* | Island wide | 3-6%,<br>60% in severe condition |
| Rats | WZ and IZ | 15% |
| Rice sheath mites | DZ and IZ | 5-15% under severe infestation |
| Rice neck & leaf blast<br>*Magnaporthy grasia* | WZ and IZ | 10-20% under severe infestation |
| Sheath blight *Rhizoctonia solani* | WZ and IZ | 5- 10% under severe infestation |

Source: Plant protection service, Department of Agriculture, Sri Lanka

**Table 19: Estimated crop losses due to pest of different crops**

| Crop | Pest | Climatic zones and season | Estimated yield loss |
|---|---|---|---|
| Rambutan | Powdery mildew –*Oidium* | WZ and IZ | 50-60% under severe infestation |
| Papaya | Papaya ring spot virus | Island wide | 25-50% under severe infestation |
| Mango | Hoppers &anthracnose | Island wide | 10- 40% average |
| Banana | Viruses, | Island wide | 10-20% average |
| | Fusarium wilt | Island wide | 20-40 % of susceptible varieties |
| Tomato | Viruses | WZ and IZ, yala | 20-40% average |
| | Blight | WZ and IZ, maha | 20-30% average |
| Cucurbits | Viruses | Island wide | 40-60% under severe infestation |
| Capsicum | Leaf curl complex | DZ and IZ, yala | 40-60% under severe infestation |

# 4. List of brief description of authorities, agencies and research institutes related to pesticides along with their short activity list.

## 4.1 Department of Agriculture (DOA)

Department of Agriculture is the main department responsible for research, seed and planting material production, seed certification and plant protection, socio economic and planning, and extension and communication, of all food crops (www.agridept.lk).

### i. Seed Certification and Plant Protection Center of the DOA

There are sub units under seed certification and plant protection center i.e. Registrar of pesticides office, plant protection center, seed certification center, plant genetic resource center and plant quarantine service.

### ii. Responsibility of Pesticide Registrar Office

The main function of this office is enforcement of the control of No. 33 of 1980, its amendments and regulations (Appendix 2 and 3). The control of pesticides Act No. 33 of 1980 regulates imports and other concern- packing, labeling, storage, transport, sale and use of pesticides through registration of products. The entire spectrum of pesticide products such as, those used in agriculture, public health, domestic, industries and veterinary etc., are under the purview of the Act. The office of the Registrar of Pesticides has the national responsibility to ensure that only the high quality pesticides, which are least hazardous to human health and environment, enter the market in Sri Lanka. The Registrar of Pesticides is the sole authority for implementing the laws and regulations under pesticide act. The Pesticides Technical Advisory Committee advises Registrar of Pesticides (ROP) on policy and technical matters. Stockholm convention on POPs and Rotterdam convention on Prior Informed Consent Procedure (PIC) was implemented through ROP.

### iii. Major focus areas in implementation

- Health and environmental impacts
- Quality of pesticide
- Fate of the chemical in the environment
- Bio-efficacy under local conditions
- Product labels and advertisements
- Conformation to FAO and WHO standards, protocols and code of conduct
- Awareness/Training
- Legal action on violation of the law

### iv. Responsibility of Plant protection center

Plant protection Service (PPS) is entrusted with the responsibility of promoting pest control methods in agricultural crops that are not only environmentally sound but also economically viable and acceptable to the farmer. These broad objectives are expected to be reached through development and implementation of integrated pest management (IPM) programs and upgrading of the existing pest management strategies. Control of pest and disease outbreaks, seed fumigation and management of some noxious aquatic weeds and other invasive species in agricultural habitats are also mandatory functions assigned to PPS. These activities encompass a major sector of the mandate of the Plant Protection Ordinance No. 35 of 1999 (www.agridept.lk).

**v. Research Division of the DOA**

There are three Research Institutes under the department of agriculture, which are responsible for research and development of different food crops. These are:

- Rice Research and Development Institute, Batalagoda, for Rice;
- Horticultural Crops Research and Development Institute, Gannoruwa, Peradeniya for Fruit, Vegetables, Root and Tuber crops and Ornamentals; and
- Field Crops Research and Development Institute, Maha Illuppallama for Grain legumes, Coarse grains, Condiments and Oil crops.

These three institutes and most of their regional research centers/stations have discipline wise divisions such as Pathology, Entomology and Weed science to carry out research and development activities of pests and pesticides. Research institutes are responsible for basic and pilot scale testing of new pesticides/formulations and monitoring of pesticide efficacy in the field levels. The Working Group Coordinators of Pathology, Entomology and Weed Science of the DOA coordinate the efficacy testing programmes of pesticides at basic (Research level) and pilot scale (On farm) levels under guidance of Registrar of Pesticides of the Department of Agriculture.

**vi. Extension and Communication Division of the DOA**

Extension and Communication Division is responsible for monitoring of pesticide efficacy in the farmers field, reporting any drawbacks of pesticides in the field to ROP and Research Divisions. There are licensing officers who are responsible for enforcement of pesticide act under field level.

## 4.2 Provincial Agriculture Departments

Nine Provincial Agriculture Departments are responsible for monitoring of pesticide efficacy in the farmers field, reporting any drawbacks of pesticides in the field to ROP and Research Divisions. There are licensing officers who are responsible for enforcement of pesticide Act under field level in each province.

## 4.3 Mahaweli Authority of Sri Lanka

Mahaweli Authority of Sri Lanka is an organization responsible for major irrigated settlement schemes in the country. The extension officers of the Mahaweli Authority work as licensing officers of pesticides.

## 4.4 Department of Export Agriculture

This department is responsible for research and development, planting material production, and extension of export oriented crops except tea, rubber and coconut. These crops include cinnamon, clove, nutmeg, pepper, cardamom, coffee, cocoa, betel etc. Research division of the department is responsible for basic and pilot scale testing of new pesticides/formulations, monitoring of pesticide efficacy in the field levels for above crops under the coordination with ROP. Extension Division is responsible for monitoring of pesticide efficacy in the farmers field, reporting any drawbacks of pesticides in the field to ROP and Research Division.

## 4.5 Tea Research Institute

Tea Research Institute is the main organization responsible for technology development of tea. They conduct basic and pilot scale testing of new pesticides/formulations, and monitoring of pesticide efficacy in the field levels for tea in coordination with the ROP.

## 4.6 Rubber Research Institute

Rubber Research Institute is the main organization responsible for technology development of Rubber. They are conducting basic and pilot scale testing of new pesticides/formulations, monitoring of pesticide efficacy in the field levels for rubber under the coordination with ROP.

### 4.7 Coconut Research Institute

Coconut Research Institute is the main organization responsible for technology development of coconut. They conduct basic and pilot scale testing of new pesticides/formulations, and monitoring of pesticide efficacy in the field levels for coconut in coordination with the ROP.

### 4.8 Sugarcane Research Institute

Sugarcane Research Institute is the main organization responsible for technology development of sugarcane. They conduct basic and pilot scale testing of new pesticides/formulations, and monitoring of pesticide efficacy in the field levels for sugarcane in coordination with the ROP.

### 4.9 Central Environmental Authority (CEA)

Vienna convention and Montreal protocol on ozone depleting substances (ODS) as well as the Basal convention for chemical safety and Trans-boundary movement of hazardous wastes and their disposal are implemented through the Central Environmental Authority (CEA).

### 4.10 Department of Custom

Imports and exports control of Act regulates imports of chemicals to Sri Lanka. HS coding system enables the custom to levy duties/ tariffs as well as screening banned, restricted or registered for use pesticides and other chemicals. Custom ordinance has a monitoring role of all imports.

### 4.11 National Universities

The national universities mainly conduct research activities to identify pesticides hazardous to human health and environment, pesticide residue analysis in foods, water and environment in the country and carry out awareness programmes for minimizing pesticide hazards, development and implementation of IPM programs and upgrading of the existing pest management strategies.

### 4.12 Industrial Technology Institute

This institute has laboratory facilities to conducts research and development activities to identify pesticides and their hazardous effects to human health and environment and carry out pesticide residue analysis of foods, water and soil.

### 4.13 Medical Research Institute / Medical Statistic Unit of the Department of Health, Sri Lanka

The institute/unit conducts research to identify pesticides hazardous to human health and implement awareness programme to minimize health hazards due to pesticides.

## 5. Regulatory framework (Policies, regulations and laws) and enforcement, description about pesticide registration process, field monitoring agencies and process.

### 5.1 Control of pesticide act

Prior to 1962, pesticides were more or less freely imported into the country. With the changing import policies in the late 1970's, pesticides even including prohibited products such as DDT and Endrin were imported on open general licenses by unscrupulous traders. With the gradual involvement by the Department of Agriculture, recognizing the need to exercise control over the use of pesticides since the early 1960's, an effective regulatory mechanism was brought into action in 1983 through the control of pesticide Act No. 33 of 1980 (Appendix 2). The act was further amended by the control of pesticides (amendment) Act No. 6 of 1994. (Appendix 3)

The registrar of pesticides is the national authority for implementing the laws and regulations under the control of pesticide act and hence actions in compliance with international conventions in relation to pesticides such as POPs, PIC etc., are undertaken as a routine measure. With the strengthening of the infrastructure, Sri Lanka would be able to effectively implement the obligations of Stockholm Convention related to POPs pesticides.

The post regulation activities are an inherent part of Section 20-22 of the Control of Pesticide Act, which enables the regulatory process to safeguard food quality, human health and the environment against hazardous effects of pesticides. These activities would enable a full evaluation of risks associated with the use of pesticides in the field and to take necessary regulatory action.

Legal provisions are provided by the act for licensing of traders, appointment of authorized officers, specifying of the functions and powers to seize pesticides in outlets conducting activities contrary to the legal provisions and regulations. All traders engaged in the storing, selling or offering for sale any pesticides are required to obtain a certification for sale from an authorized officer. As a mandatory requirement for the issuance of a license, applicants for dealership are required to undergo one day training on the principles of pesticides safety, identification of pesticides and awareness on the registration system conducted by the officers of the ROP. Awareness and legal binding thus created would be expected to minimize unscrupulous trade practices and thereby minimizing adverse impacts.

### 5.2 National Policy

Sri Lanka has a national policy implemented in 1995 that no pesticide formulation of WHO hazard class 1a/1b is marketed for regular pest control purposes in agriculture. Accordingly, some of the formulations of insecticides such as Endosulfan, Chlorpyriphos, Carbosulfan and Quinophos, which fall under the WHO class 1b have been banned. All pesticides should be subjected to a comprehensive bio-efficacy testing procedure under laboratory and field level testing by researchers prior to submission of application for registration. The registration package should consist of original reports on all related chemical, physical, biological, toxicological and environmental data. For commodity products the reports are required from accredited laboratories with GLP compliance. No “me too” registration is allowed. Thus registered products are constantly subjected to latest international developments either at the time of re-registration after every three years or as and when necessary. Different application forms are introduced to import of pesticides (Appendix 7), experimental use of pesticides (Appendix 8), experimental use by researchers (Appendix 9), registration of pesticides (Appendix 10), re-registration of pesticides (Appendix 11), submission of information for minor use (Appendix 12), minor use of pesticides (Appendix 13) and third party registration (Appendix 14).

## 6. Chemicals or alphabetized chemical list of different registered chemical pesticides (Insecticides, miticides, rodenticides, fungicides, herbicides, nematocides, bio-pesticides along with their trade names and company name.

Different types of pesticides are imported to the country for controlling pest problems in Sri Lankan crops. It included technical grade or different formulations of insecticides, fungicides, herbicides, nematocides, miticides and rodenticides. Apart from these, some bio pesticides are imported and some are produced in the country. A total of 23 companies are involved in pesticide industry. Registered chemical list with their trade name and company are listed in Appendix 5. Apart from this, number of chemicals are used for domestic (Appendix 16), pesticides for pest control operators (Appendix 17), public health (Appendix 18), veterinary (Appendix 19) and industrial purposes (Appendix 20).

## 7. List of different banned chemical pesticides, date of banning, cause of banning, proved health hazard due to those pesticides before banning

From 1970's, twenty-six chemicals and thirteen formulations which are extremely hazardous and with chronic health effects are banned. Banned pesticides with their chemical name and year of banning are presented in Table 20. Sri Lanka is the first country in the region to ban the WHO class 1 pesticides. Class 1b formulations such as Endosulfan has also been banned in the country. The main causes of banning are toxicity to human and the environment effects. The reported human toxicity includes carciogenicity, mutagenicity, oncogenecity, teratogenicity, alteration of hormone function, mimicking sex steroids, suppression of immune system, and neo natal death. Prevention of registering other hazardous pesticides such as Atrazine, Dicofol is underway. Some of the pesticides are only allowed to special uses and restricted to open market. Restricted agro-pesticides are listed with the importing company in Table 21.

**Table 20: Banned Pesticides List in Sri Lanka with its chemical family, chemical name and year of banning**

| Active Ingredient | Chemical Family | Chemical Name (IUPAC) | Year of banning |
|---|---|---|---|
| 2,4,5-T | Phenox | 2,4,5-trichlorophenoxy acetic acid | 1984 |
| Arsenic (arsenites and arsenates) | Inorganic | Arsenic | 1988 |
| Binapacryl | Nitrophenol | 2-sec-butyl-4,6-dinitrophynyl 3-methylcrotonate | |
| Bromacil | Uracil | 5-bromo-3-sec-butyl-6-methyluracil | |
| Captafol | Thalimide | 1,2,3,6-tetrahydro-N-(1,1,2,2-tetrachloroethylthio) phthalimide | 1989 |
| Chlordane | Organochlorine | 1,2,4,5,6,7,8,8-octachloro-2,3,3alpha,4,7,7 alpha-hexahydro-4,7-methanoindene | 1996 |
| Chlorobenzilate | Organochlorine | ethyl 4,4?-dichlorobenzilate | |
| DDT | Organochlorine | 1,1,1-trichloro-2, 2-bis (4-chlorophenyl) ethane | 1976 |
| Dibromoethane (EDB) | - | 1,2 ? dibromoethane | |
| Dichloropropane | - | 1,3 ? dichloropropane | |
| Dieldrin | Organochlorine | 2,7,3,6-dimethanonaphth-2,3-b/oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7, 7a- octahydro-(1a.alpha,2.beta,2a.alpha,3. beta, 6.beta,6a.alpha,7.beta,7a.alpha) | 1970 |
| Dinoseb/dinoseb salts | Dinitrophenol | 2-sec-butyl-4,6-dinitrophenol | |
| Ethyl parathion | Organophosphate | O,O-diethyl O-4-nitrophenyl phosphorothioate | 1984 |
| Ethylene dichloride | - | 1,2-dichloroethane | |
| Ethylene oxide | Epoxide | dimethylene oxide | |
| Fluoroacetamide | Luoroacetamide | 2-fluoroacetamide | |
| HCH (mixed isomers) | Organochlorine | hexachlorocyclohexane | 1987 |

| Active Ingredient | Chemical Family | Chemical Name (IUPAC) | Year of banning |
|---|---|---|---|
| Heptachlor | Organochlorine | 1,4,5,6,7,8,8-heptachloro-3alpha,4,7,7alpha-tetrahydro-4,7-methanoindene | 1988 |
| Hexachlorobenzene (HCB) | Organochlorine | hexachlorobenzene | |
| Leptophos | Organophosphate | phosphonothioic acid phenyl-O-(4-bromo-2,5-dichlorophenyl) O-methyl ester | 1988 |
| Lindane | Organochlorine | 1alpha,2alpha,3,b4alpha,5alpha,6B-hexachlorocyclohexane | 1986 |
| Maleic hydrazide | Pyridazine | 6-hydroxy-2H-pyridazine-3-one | |
| Mercuric chloride | Inorganic | Mercuric chloride | 1987 |
| Mercuric oxide | Inorganic | Mercury(11) oxide | 1987 |
| Mercury | Inorganic | Mercury | 1987 |
| Mercury chloride | Inorganic | Mercury chloride | 1987 |
| Methamidophos | Organophosphate | O,S-dimethyl phosphoramidothioate | 1995 |
| Methyl parathion | Organophosphate | O,O-dimethyl O-4-nitrophenyl phosphorothioate | 1984 |
| Pentachlorophenol | Organochlorine | pentachlorophenol | 1994 |
| Hosphamidon | Organophosphate | 2-chloro-2-diethylcarbamoyl-1-methylvinyldimethylphosphate | |
| Quintozene (PCNB) | Organochlorine | pentachloronitrobenzene | 1990 |
| Endrin | organochlorine | 2,7,3,6-dimethanonaphth-2,3-b/oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-(1a.alpha,2.beta,2a.beta, 3.alpha,6. alpha,6a.beta,7.beta,7a.alpha) | 1970 |
| Aldrin | Organochlorine | 1,4,5,8- dimethanonaphthalene,1,2,3,4,10, 10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1.alpha,4.alpha,4a.beta,5.alpha, 8.alpha,8a.beta) | 1986 |
| Mirex | - | - | |
| Toxaphene | Organochlorine | Toxaphene | |
| Aldicarb | Carbamate | 2-methyl-2-(methylthio) propionaldehyde O-methylcarbamoyloxime | 1990 |
| Chlordimeform | Organochlorine | N?-(4-chloro-2-methylphenyl)-N,N-dimethyl-methanimidamide | 1980 |
| Dibromochloropropane (DBCP) | - | 1,2-dibromo-3-chloropropane | 1990 |
| Thalium sulphate | Inorganic | thalium sulphate | 1980 |

Source: Registrar of Pesticides, Department of Agriculture, Sri Lanka.

Website- www.agridept.lk

**Table 21: Pesticides allowed to restricted use with common name, strength, product description and company name**

| Product Name | Common Name | Strength | Unit | Product description | Company name |
|---|---|---|---|---|---|
| Fendona | Alpha-cypermethrin | 15 | g/l | Insecticide | BASF Finlay (PVT) LTD |
| Harcros Benor | Benomyl | 50 | % | Fungicide | Harrisons Chemical (PVT) LTD |
| Bulldock EC 025 | Beta-cyfluthrin | 25 | g/l | Insecticide | Haleys Agro Products (PVT) LTD |
| Bulldock EC 025 | Beta-cyfluthrin | 25 | g/l | Insecticide | Haleys Agro Products (PVT) LTD |
| Nimrod 25 EC | Bupirimate | 250 | g/l | Fungicide | Jagro (PVT) LTD |
| Carbofuran75% | Carbofuran | 75 | % | Insecticide | Haleys Agro Products (PVT) LTD |
| Marshal Suscon | Carbofuran | 10 | % | Insecticide | Chemical Industries (Colombo) LTD |
| Basamid Granular | Dazomet | 97 | % | Soil fumigant | BASF Finlay (PVT) LTD |
| Decis | Deltamethrin | 25 | g/l | Insecticide | Bayer Thai Company LTD |
| Decis | Deltamethrin | 25 | g/l | Insecticide | Agro Technical LTD |
| Delta-M | Deltamethrin | 25 | g/l | Insecticide | BASF Finlay (PVT) LTD |
| Valid 2.5 EC | Deltamethrin | 25 | g/l | Insecticide | Asiatic Agricultural (Colombo) office |
| Sumicidin plus | Esfenvalerate | 75 | g/l | Insecticide | Lankem Ceylon LTD |
| Sumicidin Super | Esfenvalerate | 75 | g/l | Insecticide | Sumimoto Coopertion |
| Sumicidin Super | Esfenvalerate | 75 | g/l | Insecticide | Harrisons Chemical (PVT) LTD |
| Nemacur 5% G | Fenamiphos | 5 | % | Nematicide | Bayer Thai Company LTD |
| Teldor 50%WG | Fenhexamid | 50 | % | Fungicide | Bayer Thai Company LTD |
| Sumifen 20EC | Fenvalerate | 200 | g/l | Insecticide | Sumimoto Coopertion |
| Sumifen 20EC | Fenvalerate | 200 | g/l | Insecticide | Mackwoods LTD |
| Monocron | Monocrotophos | 600 | g/l | Insecticide | Mackwoods LTD |
| Monocrotophos 60 WSC | Monocrotophos | 600 | g/l | Insecticide | Chemical Industries (Colombo) LTD |
| Ambush 25EC | Premethrin | 250 | g/l | Insecticide | Chemical Industries (Colombo) LTD |
| Huejay Omite 57 EC | Propargite | 600 | g/l | Miticide | Lanka Flora (Pvt) LTD |

Source: Registrar of Pesticides, Department of Agriculture, Sri Lanka.

Website- www.agridept.lk

## 8. Measures adopted for pesticides safety and information on the evaluation of the pesticides risk

A good number of approaches are used in the country to minimize the acute and chronic pesticide toxicity. Regulatory control aims to substitute problem pesticides with safer and less toxic chemicals. It may involve total bans or restrictions on the quantity of pesticides imported and/ or distributed, based on agricultural need and availability of alternatives. WHO's classification of pesticide toxicity has been used by regulators to help determine which pesticide should be restricted. However, it should be noted that this system was not designed to compare various pesticides in the context of self-poisoning but instead for occupational exposures**.**

Label on pesticides pack include specific information on toxicity level, recommended concentration, pre-harvest interval to easy reference to all users. It has specific format and it is essential to get prior approval from pesticide registrar to use it. Guidelines to approve label and label templates of one herbicide, fungicide and insecticide are presented in Appendix 21. Guidelines for pesticide registration are reported in Appendix 22.

Awareness programs are continuously organized to train farmers in the safe handling, use and storage of pesticides. Agriculture organizations and their extension service publish leaflets, booklets and books to educate farmers on appropriate chemicals, correct application time, dosage and pre harvesting interval to increase the farmers' knowledge (Appendix 2, 3 and 4). The extension officers visit the farms and help identify the problem and correct chemicals. Apart from these, mass media are used to educate farmers.

Pesticides residue analyses are done by office of the registrar of pesticides, ITI, and national universities of Sri Lanka.

## 9. List of pest outbreak and their management options

First reported and well-documented pest out break of Sri Lanka was the coffee leaf rust disease (*Hamileia vastatrix*) outbreak in 1869, which significantly reduced the coffee yield (From 550 to 350 kg/ha per year) of Sri Lanka. Then, tea cultivation was started and now it became the main plantation crop of the country. Later, severe outbreaks of pests in some crops were reported time to time, but agriculture organizations were successful to control them. The coconut leaf minor *Promecrtheca cumingi*, which was the first introduced pest into the country, was first recorded by the Coconut Research Institute in 1970 (Fernando, 2004). Several consignments of predators i.e., *Pediobius parvulus, Dimmokia javanica* and *Achrysocharis promecothecae* have been imported from Borneo, Singapore and Indonesia. *Dimmokia javanica* had established in the field in a very short period and along with natural mortality factors of *Promecrtheca cumingi* has been responsible for the control of the pest completely at the end of 1974.

**Table 22. Reported pest out break in Sri Lanka**

| Crop | Pest | Causal agent/s | Year reported | Management options |
|---|---|---|---|---|
| Papaya and 34 plant spp. | Papaya mealy bug | *Paracoccus marginatus* | 2008 | Bio control by *Acerophagous papayae* |
| | Mildew | | | Fungicides |
| Rambutan | Brown plant hopper | *Oidium nephilli* | 2001 | IPM, Pesticides |
| Rice | Coconut leaf minor | *Nilapavata lugens* | - | |
| | Coconut mite | | | |
| Coconut | Coconut wilt | *Promecrtheca cumigi* | 1970 | Bio control by *D. javanica* |
| | White leaf disease | *Aceria guerreronis* | 1997 | Pesticides |
| | Black leg disease | Phytoplasma diseease | 2007 | IPM, Cultural |
| Sugar cane | | Phytoplasma disease | 1970 | |
| Potato | | *Erwinia caratovora* | 2003 & 2006 | Quarantine measures |

Source: Plant Protection Service & , Horticultural crops research and development institute, Gannoruwa, Sri Lanka

## 10. List of resistant pest species developed along with scientific evidence and the description of the institutions where the research works have been done

There is no comprehensive data for insecticide resistance in agricultural pest in Sri Lanka. However, there are various reports of the failure of insecticidal control of some of the pests. Some of the notable examples are: *Liriomyza sativa* and *L. huidobrensis* and *Plutella xylostella*.

## 11. Available information on pesticide misuse, about environmental and health effects of different pesticides under local conditions and possible remedial options (if any) account on farmers practices in relation to health of their own and consumer health

Pesticide misuse is one of the biggest problems in Sri Lankan agriculture. It includes application in short intervals i.e. within 4-5 days intervals, application of high dosages and mixing of different chemicals. Aponso *et al*., 2003 reported that most of the farmers had taken minimal precautions when applying pesticides, which enhanced dermal absorption. Most of them live close to an area where pesticides are used. Sources of drinking water of the residents are also located in the cultivated fields or an adjacent location. A study performed among vegetable farmers in three cultivating regions in Sri Lanka (Chandrasekera *et al*., 1985) indicated that 63.5% of the farmers used more than the recommended dose of pesticides, 85.7% applied pesticides before appearance of pest, and 8% sprayed pesticides prior to marketing. Aponso *et al*., 2003 have reported that 70% of the farmers in major agriculture areas in dry zone of Sri Lanka do not use the recommended concentration when applying pesticides and few used higher dose than recommended. However, Aponso *et al*., 2002 have reported that 30% of the farmers in major agriculture area in mid country of Sri Lanka used more than the recommended amount to achieve better pest control. Some of the farmers get advice from the dealers who sell the chemicals or neighboring farmers to select the pesticides. Therefore, they select incorrect chemicals and dosage to protect their crops.

**Table 23. Selection of pesticides by farmers in some districts in Sri Lanka**

| Method of selection | % Farmers (District wise) | | | |
|---|---|---|---|---|
| | Kandy | Matale | Nuwara-Eliya | Badulla |
| Consult village level extension officers | 37.5 | 23.8 | 21.1 | 7.9 |
| Consult dealers | 20.8 | 20.6 | 8.9 | 12.7 |
| Consult neighboring farmers | 4.2 | 4.8 | 1.1 | 4.8 |
| Own experience | 31.9 | 36.5 | 48.7 | 55.6 |

Source: Chandrasekera et al, 1989

During past two three decades self-poisoning by using agro-chemicals was the common mean of suicide in rural areas. At the beginning of the 1990's OP and carbamate were the main cause of fatal pesticide poisoning, causing 72% of all such deaths during 1991-1992. The cases were fairly evenly distributed between patients ingesting class I OP's (methamidophos and monocrotophos), class II OP's (in particular dimethoate and fenthion) and unidentified pesticides that caused a cholinergic syndrome. The pesticide registrar made a decision in 1991 to restrict the import of class I OP's over four years and then severely restricted their use in routine agriculture, in an attempt to reduce the number of deaths. During this period, the total number of pesticide deaths fell drastically. As the availability of methamidophos and monocrotophos was restricted, the WHO class II organochlorine

endosulfan became the most popular insecticide in agricultural practice in Sri Lanka at that time. A broad insecticidal activity, low cost and trade incentives and promotion encouraged farmers switch to Endosulfan. This was reflected in the number of fatalities from Endosulfan self-poisoning. Endosulfan was banned in 1998 and number of deaths due to the chemical fell quickly (Roberts et al., 2003). By 2001, WHO class II pesticides and paraquat were the most common substances used for fatal pesticides self-poisoning. Some less common pesticides were also involved to suicides to some extent. Currently, the deaths are due to class II OP's, in particular the dimethyl OP's fenthion and dimethoate and paraquat. Therefore, regulatory decisions were taken to phase out two insecticides i.e. dimethoate and fenthion and herbicide paraquat from 2008 based on unacceptable risks, especially acute poisoning associated with liberal use of these pesticides within the country (Eddleston *et al*., 2005, Fahim Mohamed *et al*., 2009, Gamini Manuweera *et al*., 2008, Gunnell *et al*., 2007, Hettiarchche and Kodethuwakku, 1989, Jayaratnam, 1990 & 1997, Lawrence, 1988, Manuel *et al*., 2008, Maracek 1998 & 1999, Senanayake, 1998, Senanayake and Peris 1995, Sivayoganathan *et al*., 2000, Wim van der Hoek 2006)

Cases and deaths due to pesticides during 1984-2007 are presented in Table

**Table 24: Cases and deaths due to pesticides**

| Toxic effects of pesticides | 1984 | | 1988 | | 2005 | | 2006 | | 2007 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | C | D | C | D | C | D | C | D | C | D |
| Organophosphate and Carbamate | | | | | | | | | | |
| Other pesticides | - | - | - | - | 12587 | 892 | 13222 | 860 | 13079 | 853 |
| Total pesticide | - | - | - | - | 4323 | 378 | 4296 | 382 | 4644 | 295 |
| Poisoning | 16085 | 1459 | 12997 | 1524 | 16910 | 1270 | 17518 | 1242 | 17723 | 1148 |

Source: Annual health statistics, Ministry of Health, Sri Lanka

C-No. of cases, D-No. of deaths

## 12. Available information about pesticide residue on food, water, soil, environment etc., and methods of monitoring

In agriculture, pesticides are either sprayed on to the crop or directly incorporated into the soil. A portion of these chemicals or their metabolites ends up in soil or water. In addition, pesticide spray equipment is washed in streams located closer to the farm. It is shown that much of the chlorpyrifos applied to foliage eventually reaches soil either as parent compound or metabolite (Racke, 1992).

Agricultural activities in the dry zone areas of Sri Lanka depend on irrigation water supplied from internal water reservoirs such as tanks. Due to the scarcity of water residence of these areas use tank water as the major source of water for all activities including drinking. Pesticides are extensively used in these areas for rice, chilli, onion and vegetables. Study conducted using water samples from irrigation tanks and drinking water sources in two areas of the dry zone to test the residue level of cholorpyrifos, dimethoate, propanil, captan and diazinon showed that only few samples were positive to three pesticide residues in very low levels. Out of 544 samples analyzed, 8 were positive for either chlorpyrifos (level ranged from 0.022-0.542µg/l) and/or diazinon (level ranged from 0.012-0.15µg/l) and one sample consisted of 0.014µg/l of dimethoate (Aponso *et al*., 2003). These findings suggest that the level of exposure to pesticide residues in the dry zone area is significantly lower than that of internationally accepted daily intake levels. The absence of residues in the water source in the dry zone of Sri Lanka may have been due to enhanced dissipation caused by hot weather conditions,

higher radiation, basic pH and organic carbon in water prevailing in the areas and unavailability of long persistent pesticides.

Agricultural activities in the upcountry areas of Sri Lanka depend on rain water, water falls and channels and also use as the major source for all activities including drinking. Pesticides extensively used in these areas for vegetables and there must be rain or down stream transport of water that would carry the chemical to an aquatic system. However, detail studies not have been conducted in up country areas to quantify pesticide residues in water and therefore situation is still unclear. Nilwala River is one the major rivers in Sri Lanka drain across the southern part of the country. Silva *et al*., 1991 investigated the organophosporous and volatile organochlorine compounds in different part of the river.

Positive and pragmatic approaches in policy decisions of regulation of pesticides in Sri Lanka may also have contributed to the some favorable situation observed in the present. None of the pesticides available in Sri Lanka are long persistent in the environment: therefore, bioaccumulation or biomagnification is unlikely. Further the banning of extremely and highly hazardous pesticides in Sri Lanka in mid nineties may have contributed to less incidence of severe acute exposure health effects in the farmers (Aponso *et al*., 2003).

## 13. Past experience and present status of the use of ipm, natural enemies (Predators and parasitoids) entomopathogenic microbes and fungi, insect sex pheromones, botanicals, bio pesticide, transgenic crops and indigenous knowledge in biological pest control

### 13.1 Past experience and present status of the use of IPM:

IPM is used from 1980's to manage the pest problem of major crops in Sri Lanka. It was first initiated for management of insect pests of rice in 1984 under the FAO inter country programme. The farmer field school (FFS) approach was used and it helped for both farmers and trainers to study the complex nature of the crop environment in real situations and understand the agro-eco system for the purpose of better decision making on pest related problems. Thus, it became easier to convince the farmers on the wrong use of insecticides and the adverse effects of such insecticide application. Before starting the programme, farmers in high potential rice growing areas in the dry zone used about 5-7 applications of insecticides per season while farmers in the wet zone where rice is grown mainly for subsistence used about three applications per season. However, after the training it was reduced by 81% resulting in saving of inputs and labour costs. Even agricultural extension officers who directly recommended insecticides for controlling the pests, changed their attitudes to look the problem in relation to the situation and advice farmers accordingly. This programme was continued up to 2002 and then carried over by some provincial councils by their own funding.

The Mahaweli authority of Sri Lanka (MASL) is an organization responsible for major irrigation settlement schemes in the country. Rice is the main crop of these areas and the MASL trained their extension staff to carry out the IPM programme. It has become an integral component in their programme and they continued it with their own funds.

Apart from rice, IPM was tested for chilli and vegetables. Chilli cultivation is highly affected by the leaf curl complex in the dry season and it was sprayed with insecticides heavily almost every week. It has proved that insecticide application could be saved 50% or more through the adoption of IPM.

Plant protection service of the department of agriculture conducted feasibility studies of IPM farmer school approach for vegetable crops like Beans, brinjal, tomato, sweet potato, cabbage, chilli and cucurbits. It was successful in reduction of pesticide use, but gathering farmers was a difficult task due to various reasons. The main reasons are:

- Most vegetable farmers are part time farmers
- Not the owners, labours are present in the field.
- Vegetable cultivation is labour intensive and they do not like to devote time for training

Horticultural Crop Research and Development Institute is also conducting field demonstration of IPM and IDM for vegetable crops such as cucurbits, bean etc. Department of Export Agriculture promotes IPM widely among farmers for management of coffee berry borer, cardamom stem and capsule borer and cinnamon wood borer. Therefore, insecticide used for coffee and cinnamon is very rare.

The Tea Research Institute of Sri Lanka (TRI) recommended package of practices including Integrated disease management (IDM), integrated pest management (IPM), integrated weed management (IWM), good agricultural practices (GAPs) and good manufacturing practices (GMPs) in relation to avoid or minimize crop damage by various pests and subsequent contamination to meet the internationally accepted guidelines in respect of pesticide handling and use. The commitment in adherence to TRI recommendations by Sri Lankan tea growers have resulted in both successful management of tea pests and achieving the description of Sri Lanka tea as "the cleanest in the world as far as pesticide residues are concerned" by the technical sub committee in the international market on tea of the international organization for standardization (ISO) repeatedly since 1997.

## 13.2 Natural enemies

It has been reported that many native parasites and predators of insect pest present in Sri Lanka (De Silva, 1961). Ten species of parasites and predators for Coleopteran pest species, 25 species of parasites and predators for 9 Dipteran species, 126 species of parasites and predators for 63 Hemipteran species, 234 species for Lepidopteran species and 3 species of parasites and predators for 2 Orthopteran species were recorded (De Silva, 1961). Natural enemies of the vegetable leaf miner *Liriomyza huidobrensis* in up country Sri Lanka were recorded by Nugaliyadda *et al*., (2001). The species composition of parasitoids includes two species of *Neochrysocharis* (Hymenoptera: Eulophidae), *Diglyphus isaea* (Hymenoptera: Eulophidae), *Hemitarsonemus varicornis* (Hymenoptera: Eulophidae) and *Closterocerus* sp. (Hymenoptera: Eulophidae) were identified as parasitoids of *liriomyza sativa* (Deptera: Agromyzidae) in the mid country of Sri Lanka (Mayadunnage *et al*., 2007). Hymenopteran parasitoids and hyper parasitoids of crop pests in the North Central Province of Sri Lanka were recorded by Ketipearchchi (2002). Parasitoids of *Liriomyza sativa* in the Batticaloa District (Eastern Province) were reported by Niranjana *et al*., (2002). Sixteen species of 13 genera belonging to sub-families Coccinellinae, Chilocorinae and Scymninae were identified as predatory Coccinellids of vegetable insect pest in mid country of Sri Lanka (Nagalingum et al., 2007). The species were, *Anegleis cardoni, Coccinella sexmaculata, Coccinella transversalis, Coccinella octomaculata, Illeis cincta, Micraspis discolor, propylea dissecta, Synonycha grandis, Brumodis suturalis, Chilocorus nigritus, Aspidimerus circumflexus, Axinoscymnus puttarudriahi, Cryptogonus orbiculus, Scymnus (Pullus) latemaculatus, Pseudaspidimerus trinotatus and Scymnus (Scymnus) nubilis*.

## 13.3 Entomopathogenic fungi

Information available on entomopathogenic fungi under local condition is very limited. Limited surveys have been conducted to identify pathogenic agents of insect pest and nematodes (Sivasubramanium and Kudagamage, 1997). Some of the promising bio-control agents were mass cultured using agro-industrial waste such as tea waste, paddy husk and molasses (Sivasubramanium and Kudagamage, 1997b, Nishantha *et al*. 2001). *Trichoderma konini* was found to be effective on *Meloidogyne* incognita (De Silva *et al*. 2001). Crude extract prepared from grinding dead disease larvae of cabbage semi-looper, *Chrysodecxis eriosoma* infected with fungus Metarhizium was found

to be effective in the field for cabbage caterpillars (Wickramathilake *et al*., 2000). *Paceilomyces fumosoroseus* an antagonistic fungus isolated from disease insects were successfully multiplied on boiled rice. In the laboratory it was found to cause nearly 100% mortality of *Plutella xylostella* when treated with spore concentration ranging from 1.8 x 10 9 (Kudagamage *et al*. 1996). The efficacies of isolated antagonistic organisms were evaluated in the laboratory and field experiments for the control of plant diseases.

## 13.4 Sex pheromones

Sex pheromones are used to control fruit fly, melon fly, and coconut beetle. Fruit fly is one of the most important pests of mango, guava, citrus and other fruits of Sri Lanka. Spraying chemicals is problematic due to the fresh use of these fruits. Therefore, methyl eugenol traps are commonly used to destroy male flies. Now locally produced protein bait are used to control female flies of both fruit and melon fly. Location wise eradication campaign was conducted in Central province during 2007-2009 of the country using pheromone traps, protein bait and some cultural methods to reduce the fruit fly population (Seasonal Reports, HORDI, Gannoruwa, Sri Lanka). Melon fly is also a severe problem of cultivation of cucurbit crops including pumpkin, cucumber, snake gourd and bitter gourd. Apart from spraying of chemicals pheromones traps and protein bait are used to control it. Controlling coconut beetle, which damage palm trees including coconut, oil palm are very difficult and only available method is traps with pheromone. Pheromone traps for tea tortrix is accepted by the tea plantation and it has a good seasonal demand with every outbreak (Dharmawardhana, 2003).

## 13.5 Botanicals

Since 1970's traditional knowledge on use of different part of plants to control pests were exploited by several workers. Among the various botanicals much attention is paid on neem tree (*Azadirachta indica*). Neem contains several anti-insect active ingredients. Most of these compounds are water soluble. Hence, crude extracts with water is effective for insects like cabbage caterpillars, rice leaf folders and brinjal shoot and fruit borers (Kudagamage, 1995). Apart from crude water extracts farmers use various commercial preparation of neem available in the market. A survey was carried out to study the feasibility of using crude neem water extract for pest control. Farmers claim that use of neem was less costly and not poisonous. However, they concerned about the difficulty of powdering the seeds and preparation of spray mixtures, blockage of spray nozzles, more labour requirement and unavailability of neem seeds when required.

Apart from neem various vegetable oils were found to be effective for storage pest control such as Bruchids (Rajapakse and Ven Emiden, 1997, Rajapakse and Sennanayake, 1997). Realization of the insecticide potential of biologically active compounds found in plants, has led to further studies. Studies to elucidate the chemical nature of the various active ingredients have been in progress since early 1980's (Bandara *et al*. 1990, Hewage *et al,* 1997, Bandara and Kumara, 2000). Most of the extracts are not stable under field condition. Hence, formulations of extracts into usable and more stable products are being investigated.

## 13.6 Bio pesticides

Bio pesticides are broadly categorized into two groups, biochemical pest control agents and microbial pest control agents. According to plant protection act in Sri Lanka, no foreign microorganisms are allowed to use in the country. At present microbial pesticide- *Bacillus thurigiensis* (Bt) is unavailable in the market. Liquid and powder formulations of some locally isolated *Trichoderma* species are available in the market for controlling soil-borne fungal pathogens (Kelaniyangoda *et al*., 2003, Rajapakse *et al*., 2006, Wijethilake 2003).

## 13.7 Indigenous knowledge on pest control

Indigenous knowledge on biological pest control are collected and compiled by Ministry of Environment and Natural resources of Sri Lanka. There are some traditional secret treatments, ritual and traps to control pests of rice. It included methods to rout rats, control paddy bugs and other insects. Some traditional methods are also available for control cucurbits and other vegetable pests and other cereal pests (Anon 2005 and 2006).

Selected traditional uses of plants for pest control are listed in Table

**Table 25: Traditional uses of plants for pest control**

| Plant | Pest | Method of use |
|---|---|---|
| *Alocasia macrorrhiza* | Termites | Planted between planting holes of coconut to prevent termite attack |
| *Azadirachata indica* | Brunched damage | Fresh leaves mixed with seeds of green gram in storage containers |
| *Toddalia asiatica* | Rice leaf folder | Whole plant pounded and kept near water inlet of paddy field to wash the active ingredient in to fields |
| *Croton aromatica* | Rice leaf folder | Whole plant pounded and kept near water inlet of paddy field to wash the active ingredient in to fields |
| *Cycas circinalis* | Fruit flies | Flowers of Cycas is cut into small pieces and spread in the field |
| *Dipterocarpus glandulosus* | Rice Pests | Ropes dip in water suspension of grounded leaves are pulled across the field by two individuals to repel pests |
| *Pomgomima pinta* | Paddy bug | Leaves are scattered in the field to repel paddy bugs. |
| *Derris* spp. | Rice leaf folder and paddy bug | Finely ground and kept in water inlets to get mixed with irrigation water in paddy fields/ |

# 14. Government initiative against pest outbreak, resistance, resurgence etc.

Government departments of the country responsible for agriculture development have taken various steps to reduce the pest outbreak, development of resistant spp and resurgence. Most important one is awareness of farmers on pest control methods, continuous field visit by extension officers, training of farmers on correct dosage and problems of continuous application of same chemical etc.

Development of resistant varieties is one of the most effective methods to manage pest outbreaks. The biggest success in this method has been achieved in rice. Several rice varieties resistant to gall midge (GM), brown plant hopper (BPH), bacterial blight (BB) and blast disease (BL) have been released.

**Table 26. Recommended crop varieties, resistant to pest and disease in Sri Lanka**

| Variety | Year of released | Yield potential t/ha | Resistance pest/diseases |
|---|---|---|---|
| **Rice:** | | | |
| Bg 407 | 1981 | 7.5 | Resistant to BB |
| Bg 400-1 | 1980 | 8.5 | Resistant to GM biotype 1 |
| Bg 379-2 | 1980 | 8.5 | Resistant to BPH and BB |
| Bg 380 | 1982 | 10.0 | Resistant to GM biotype 1 |
| Bg 450 | 1985 | 8.8 | Resistant to GM biotype 1 |
| Bg 403 | 1993 | 8.0 | Resistant to BB, BL, BPH |
| Bw100 | 1979 | 6.0 | Resistant to BL, bronzine |
| Bw 400 | 1987 | - | Resistant to BL |
| Bw 435 | 1992 | 7.0 | Moderately Resistant to BL, Resistant to GM biotype 1 |
| Bg 350 | 1986 | 6.0 | Resistant to GM biotype 1 |
| Bg 352 | 1992 | 8.5 | Resistant to BL, GM biotype 1 |
| Bg 357 | 1997 | 10.5 | Resistant to BL, BB, GM biotype 1 and 2 |
| | | | Moderately Resistant to BPH |
| Bg 359 | 1999 | 7.0 | Resistant to BL, BB, GM biotype 1 and 2 |
| | | | Moderately Resistant to BPH |
| Bg 360 | 1999 | 7.0 | Resistant to BL, BB, GM biotype 1 and 2 |
| | | | Moderately Resistant to BPH |
| Bw 267-3 | 1981 | 4.5 | Resistant to BL |
| Bw 351 | 1986 | 5.0 | Moderately Resistant to sheath blight |
| At 353 | 1992 | 6.5 | Moderately Resistant to BL, BB |
| Ld 355 | 1994 | 4.5 | Moderately Resistant to BL, BB |
| Bg 300 | 1987 | 8.0 | Resistant to BL, BB, GM biotype 1 and BPH |
| Bg 301 | 1987 | 6.0 | Resistant to BL, BB |
| Bg 304 | 1993 | 7.5 | Resistant to BL, BB, GM biotype 1 and 2, Moderately Resistant to BPH |
| Bg 305 | 1999 | 7.5 | Resistant to BL, BB, GM biotype 1 and 2, BPH |
| At 303 | 1990 | 5.0 | Resistant to BL |
| **Tomato** | | | |
| KWR, Thilena | | | Resistant to Bacteria wilt |
| **Potato** Hillstar | | | Moderately Resistant to Bacteria wilt |
| **Brinjal** | | | Resistant to blight |
| Padagoda | | | Moderately resistant to Bacteria wilt |

Source: Rice Research and Development Institute, Batalagoda, Sri Lanka

## 15. Suggestion and recommendations especially on possibilities on work sharing

Research on various aspects of pesticides and awareness programmes to minimize pesticide poisoning and environment pollution are carried out continuously in all SAARC countries. However, information gathered from these activities is not properly distributed among the scientists in the region. Exchange and sharing of scientific knowledge in all aspects of pesticides is important to effective and safe use of pesticides of all countries. Therefore, organizing an annual symposium/workshop for the scientists and policy makers in the region and publishing of proceeding is the most successful way to share the new knowledge, discuss constraints and develop workable plan of action to solve related problems.

Implementation of common legislation procedure for all SAARC countries is another important strategy to safe use of pesticides. Implementation of exchange programme of natural enemies, predators/ parasitoids among the countries and sharing of indigenous knowledge to develop IPM packages for major crops and testing them in all countries are also important.

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# Appendix A

# Pesticide Manual 2009

**Department of Agriculture, Peradeniya, Sri Lanka**
**2009**

# PREFACE

Since publication of the first pesticide recommendation manual in 1997, a set of new pesticides have been recommended during the last several years for a wide range of food crops. While some of these new pesticides belong to new classes of compounds, others are being either improved formulations or new derivatives with specific actions. Consequently, the choice of pesticides recommended for the control of various pests, diseases and weeds in all major crops has since been widened. Further, pesticides for specific cropping situations such as floriculture, vegetable production in net houses and weed control in non-crop situations have also been introduced for appropriate adoption. In order to disseminate the technical information of relevance to the beneficiaries concerned, the1997 pesticide recommendation manual has been duly updated, incorporating the latest information on new pesticides and this second edition of the Pesticide Manual 2009 has been prepared accordingly.

This pesticide manual is designed principally for the use of researchers, extension personnel, teachers on agriculture and technical staff engaged in related activities in the private sector in respect of their professional work. All pesticides indicated in this manual are registered compounds under the Pesticide Regulatory Authority as deemed by the Control of Pesticides Act No. 33 of 1980.

The edition contains information on 142 chemicals for which 43 new compounds have been introduced since the publication of the manual of 1997. These chemicals are formulated under three sections i.e. Insecticide, Fungicide and Herbicide recommendations. Under each section, pesticide recommendations for all major pests of agricultural importance are specified along with the rate of application as amount/ha basis. Further, considering the need or facilitate convenience of the end user in preparing the tank mixtures, amount of pesticide required for 10 liters of water is also indicated.

The publication of this manual would not have been possible if not for the coorporation of the researchers engaged in pesticide research at, respective crop research stations of the Department of Agriculture, spread throughout the country. I sincerely appreciate their valuable contributions made towards pesticide testing and evaluation. I also wish to acknowledge the painstaking efforts and dedication of Dr. A.A.L. Amarasinghe, Director, Field Crops Research & Development Institute, Mr. K.N. Mankotte Deputy Director (Communication) and Mr. Sumith Jayakody, Research Officer, attached to the office of the Registrar of Pesticides, in collecting, compiling and reviewing information on pesticides and at the end, in editing this Pesticide Recommendation Manual.

Dr. C. Kudagamage
Director General of Agriculture
Department of Agriculture
01.06.2009

## CONTRIBUTORS

| | | |
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***Form-RP-MU2***

# SPECIMEN APPLICATION FOR THE SUBMISSION OF INFORMATION ON MINOR USE PESTICIDES[1]

(TO BE FURNISHED BY THE EXPORTER OF THE TREATED COMMODITY)

**1.** ***GENERAL***

1.1 Name of the Exporter:

1.2 Address:

1.3 T/Phone Fax: E-mail:

2. COMMODITY DETAILS

2.1 Commodity category:

2.2 Intended user/market

2.2.1 for exclusive export: Yes: ☐ No: ☐

2.2.2 for export and domestic market:

2.3 Importing country (-ies) of the commodity:

2.4 Name and Address of the buyer(s):

2.5 Certified copy and the original document of the Export agreement, attached: Yes / No

3. PESTICIDE DETAILS

3.1 Intended crop(s) and pest(s):

3.2 Proposed rate of application

3.3 Frequency of application:

3.4 Pre Harvest Interval:

3.5 Specific reasons for selecting particular pesticide:

3.6 Alternative pesticides available in Sri Lanka: Yes: ☐ No: ☐

3.7 Alternative pesticides intended to be used instead of the proposed pesticide:

3.8 Status of the pesticide in the importing country of commodity

3.8.1 Recommended crop(s) and pest(s):

3.8.2 Recommended rates and frequency of application:

3.8.3 Registration status:

3.8.4 Any special use restrictions:

3.8.5 Maximum residue limit:

***Office of the Registrar of Pesticides, P.O. Box 49, Getambe, Peradeniya***

[1] Please refer to the note on the description of Minor Use Pesticides appearing at the end of the Application

***Form-RP-MU2***

I hereby solemnly declare and affirm that all information given by me is true and correct.

..... .....
Signature, Name & Designation Date:

***Note:**

***Pesticides for "Minor use" are considered only under very special circumstances. Some of the main aspects are listed below. For more details contact the office of the Registrar of Pesticides***

- ***The anual quantity of imports of the product should be relatively small***
- ***Usage is restricted for the agricultural/floricultural commodities intended for exclusive export market.***
- ***The proposed product should have been specifically required by the particular buyer of the commodity and should be registered in the country of import of the commodity***
- ***The proposed product should not have been regulated under the international conventions related to chemicals, human health or environment and prohibited or restricted under local regulations.***

*Form -RP-MU1*

# SPECIMEN APPLICATION FOR REGISTRATION OF MINOR USE PESTICIDES[1]

Control of Pesticides Act, No. 33 of 1980

**SRI LANKA**

**1.** ***GENERAL***

1.1 Name of the Registrant:

1.2 Name and designation of the authorized signatory:

1.3 Address (Office):

1.4 T/PhoneNo: Fax: E-mail:

**2.** ***PRODUCT DETAILS***

2.1 Trade Name:

2.2 Common name(s) of the active ingredient(s):

2.3 Strength of the formulation:

2.4 Type of the formulation:

2.5 Use category- INSECTICIDE/ FUNGICIDE/ WEEDICIDE/ OTHER:

2.6 Physical and chemical properties of the formulation:

2.7 Shelf life:

**3.** ***MANUFACTURER'S RECOMMENDATIONS***

| *Crop* | *Pest* | *Rate(s) of Application* | *Frequency of Application* | *Pre Harvest Interval* |
|---|---|---|---|---|
| | | | | |

**4.** ***REGISTRATION DATA*** **(authenticated documents should be submitted)**

4.1 Registration status of the pesticide in the country of origin:

4.2 Registration status of the pesticides in the importing country of the commodity:

4.3 Copy of approved label in the country of origin and/or country of importing of the Commodity:

4.4 Detailed Composition of the formulation:

4.5 Method of analysis

4.5.1 for the residues in crop:

4.5.2 for the formulation:

***Office of the Registrar of Pesticides, P.O. Box 49, Getambe, Peradeniya***

[1] Please refer to the note on the description of Minor Use Pesticides appearing at the end of the Application

*Form -RP-MU1*

4.6 Material Safety Data Sheet for the formulation:

*(This document should be the official MSDS of the manufacturer of the product. The content should include Acute Toxicology data, Environmental data, First Aid Measures & Disposal methods.)*

**5. *OTHER SUBMISSIONS***

5.1 Specimen label, in duplicate:

Yes: ☐ No: ☐

5.2 Non refundable payment, a sum of Rs.6500.00 as filing fee (Cheques must be drawn in favor of the Director General of Agriculture. Money-orders must be payable at the Post Office- Peradeniya).

Yes: ☐ No: ☐

5.3 ***Form -RP-MU2,*** duly completed by the exporter of the treated commodity.

Yes: ☐ No: ☐

I hereby solemnly declare and affirm that all information given by me is true and correct.

..... .....
Signature, Name & Designation Date:

***Note:**

***Pesticides for "Minor use" are considered only under very special circumstances. Some of the main aspects are listed below. For more details contact the office of the Registrar of Pesticides***

- ***The anual quantity of imports of the product should be relatively small***
- ***Usage is restricted for the agricultural/floricultural commodities intended for exclusive export market. -The proposed product should have been specifically required by the particular buyer of the commodity and should be registered in the country of import of the commodity***
- ***The proposed product should not have been regulated under the international conventions related to chemicals, human health or environment and prohibited or restricted under local regulations.***

## *Office use only*

Application No: Date received:

Registration No: Date registered:

Application accepted/returned:
Reasons for the return:

***Office of the Registrar of Pesticides, P.O. Box 49, Getambe, Peradeniya***

*FormNo:RP/03*

## APPLICATION FOR THIRD-PARTY REGISTRATION

**For Office** Use **Only**

Application #: Cheque # - Filing :

Reg./Code #: Reg. :

| | | |
|---|---|---|
| 1. | Name and Address of the Application | |
| 2. | Common Name | |
| 3. | Strength | |
| 4. | Type of Formulation | |
| 5. | Use Category | |
| 6. | Name and Address of the Original Registrant | |
| 7. | Registration Number Assigned for the Original Registration | |
| 8. | Date of Expiry of Original Registration | |
| 9. | Name and Address of The Manufacture of Active Ingredient | |
| 10. | Name and Address of The Formulator | |
| 11. | Name and Address of The Supplier | |

*FormNo:RP/03*

I hereby Certify That The Particulars given in the Above Items 2-11 are True and Correct. I authorize Issuing a Third Party Registration to the Above Applicant, on the strength of my registration, With Following Conditions (if any);

..... .....
Date: Signature of the Holder of Original Registration

12. Trade Name

13. Container Types & Sizes

14. Do You Already Hold a Valid Registration For the Proposed Formulation for Another Source: Yes/NO

If 'Yes'
Registration Number:

Following Items are also Submitted along with the Application;
(Please "X", Where Applicable)

Label in Duplicate

Specimen Containers

Application and Registration Fees

..... .....
Date: Signature of the Application

*Form No: RP/08*

# Application for Import of Pesticides

**(Please submit in triplicate)**

**FOR OFFICE USE ONLY** Ref. No. RP/VIII/B
Quantity approved :
Remarks

Date : ..... Registrar of Pesticides

1. Importer
2. Address
3. Pesticide Registration Particulars
   - 3.1. Registration Number
   - 3.2. Expiry Date
   - 3.3. Name under which the material is imported :
   - 3.4. Common Name & Strength :
4. Name and Address of
   - 4.1 Manufacturer/Formulator*
   - 4.2. Supplier
5. Quantity :
   - Stock at hand
   - Now Applied for :

Import Approval to be issued to the Ministry of Industries, Science & Technology or Controller of Imports (Please delete the irrelevant Section)

..... .....
Date Importer's Signature

**Important**:

- The Application will be returned if required information is not provided on any of the above items or found to be incorrect or satisfactory QC is not submitted for the last consignment imported.
- No person shall import any consignment manufactured/forwarded prior to 3 months that of the date of shipment
- Indicate the Manufacturer in the case of import of Technical Grade Material and Formulator in the case of import of formulated products.

*Form-RP-02A*

## SPECIMEN APPLICATION FOR EXPERIMENTAL USE OF PESTICIDES

1. Name and Address of the applicant:
2. Name under which test product is imported:
3. Name and Address of the manufacturer:
4. Name of importer (where applicable):
5. Countries where the product is registered:
6. Pests and crops recommended by the manufacturer:
   (i) *Pests:*
   (ii) *Crops:*
   (iii) *Rate of application:*
7. Mode of Action:
8. Benefits in brief using the product in Sri Lanka:

***(Note: Consideration of the application will be heavily dependent on the information provided in this section)***

   **(i)** *Beneficial species identified as not affected by this pesticide:*
   (ii) *Comparative description of economics in relation to already recommended chemicals (e.g. input cost):*
   (iii) *(a) Existing products that could possibly be replaced with this pesticide:*
   *(b) Brief technical and economic analysis and possible strategy of phasing out:*
   (iv) *Any other product specific advantages:*

9. Proposed Institutes where the trials are to be carried out:
10. Active Ingredient Information:
    (i) *Common name:*
    (ii) *Chemical class:*
    (iii) *Chemical name:*
    (iv) *Product category:*
    (v) *Vapour pressure:*
    (vi) *Partition coefficient (octanol/water):*

***Office of the Registrar of Pesticides, P.O.Box.49, Getambe, Peradeniya***

*Form-RP-02A*

**11. Formulation information:**

(i) *Formulation type and strength:*

(ii) *Composition:*

**12. Toxicological Information:**

(i) *Technical LD50:*

*Oral:*

*Dermal:*

*Inhalation:*

(ii) *Formulation LD50:*

*Oral:*

*Dermal:*

*Inhalation:*

(iii) *Brief summary of sub-acute/ long-term toxicity (potential adverse effects):*

(iv) *Adverse effects on the environment (e.g. fish toxicity, persistence in plants, soil& water etc.)*

**13. Additional Documents to be submitted:**

(i) *Material Safety Data Sheet*

(ii) *Approved labels of other countries*

*Form-RP-02B*

## APPLICATION FOR EXPERIMENTAL USE OF PESTICIDES
(TO BE FURNISHED BY THE RESEARCHER)

1. Common name:
2. Strength:
3. Formulation type:
4. Name of the importer:
5. a. Crop(s), pest(s) for which the product is to be tested:

   b. Pesticides recommended by the DOA for the proposed crop/ pest situation:

   c. Any observed or reported draw backs with the above chemical pest control options:

   d. Could any of the above pesticides be replaced with the proposed pesticide, on technical ground: Yes: ☐ No: ☐

      (i) If 'Yes' please indicate the chemical, and your technical justification for the replacement, if any. (Please use a separate paper if necessary).

*Form-RP-02B*

(ii) If 'No; please provide, in brief, any advantage or benefits of using the proposed pesticide. (Please use a separate paper if necessary).

6. Possible adverse effects of using the proposed pesticide, under local conditions:

1. Resistance: Yes: ☐ No: ☐ .....
2. Effect on beneficial organisms: Yes: ☐ No: ☐ .....
3. Handling and application difficulties: Yes: ☐ No: ☐ .....
4. Any other: .....

5.a. Method of application, please specify whether as :

1. Baits .....2. Seed treatment ..... . Plant dip .....4. Foliar spray .....
5. Soil drench .....6. Soil incorporation ..... 7. Soil broadcast .....

b. Proposed rates of Application: 1 .....

2 .....

3 .....

6. Amount required for trial:

7. Name of the Research Institution:

8. Name & Signature of Researcher:

9. Signature of DDR / Supervising Officer:

***Office of the Registrar of Pesticides, P.O.Box. 49. Getambe, Peradeniya***

*FORM No RP/01*

## Application for Registration

Application for Registration of pesticides
Control of Pesticides Act, No.33 of 1980
Sri Lanka
*Please refer the Guideline before compilation of the application.*

**1.** ***GENERAL***
*(Details pertaining to this section should be furnished in the spaces given against the respective Items)*

1.1 Name of the registrant:

1.2 Name and designation of the authorised signatory:

1.3 Address:

1.3.1 Office:

1.3.2 Warehouse/ Factory:

1.4 T/PhoneNo: Fax No: E-mail:

**2.** ***PRODUCT DETAILS***
*(Details pertaining to this section should be furnished in the spaces given against the respective Items)*

2.1 Trade name:

2.2 Use category: INSECTICIDE/FUNGICIDE/WEEDICIDE/OTHER
(delete the sections not relevant)

2.2.1 If other, please specify:

2.3 Intended user/market:

2.4 Use classification: AGRICULTURAL/DOMESTIC/INDUSTRIAL/PUBLIC HEALTH/ VERINARY/WAREHOUSE/FORMULATION PURPOSES//OTHER
(delete the sections not relevant)

2.4.1 If other, please specify:

2.5 Common name(s) of active ingredient(s):

2.6 Strength of formulation:

2.7 Type of formulation:

2.8 Type of containers:

2.9 Size of containers:

2.10 Registration in other countries:

2.10.1 Registration in the country of origin (copies of registration certificates should be authenticated as per the Guideline):

2.11.2 Other countries where registered (copies of registration certificate should be authenticated as per the Guideline):

2.11 Do you already hold a valid registration for the proposed formulation or applied for registration from an alternate source. YES/NO

If "YES": Application No: Registration No:

**3. *SOURCE***

*(Details pertaining to this section should be furnished in the spaces given against the respective Items)*

| | Item 3 .1 | Item 3.2 | Item 3.3 |
|---|---|---|---|
| | Manufacturer | Formulator | Supplier |
| Company Name | | | |
| Contact Name | | | |
| Contact Title | | | |
| Address | | | |
| City | | | |
| Postal Code | | | |
| State/Province | | | |
| Country | | | |
| T/Phone Number | | | |
| Fax Number | | | |
| E-mail Address | | | |

3.1 Declaration of the manufacturer of the technical material is attached: YES / NO

3.4 Declaration of the formulator of the pesticide is attached: YES / NO

**4. *ACTIVE INGREDIENT***

(Details pertaining to this section should be furnished in separate documents. Indicate respective number(s) of the annexed documents against relevant Items below. Please see section 'D' in the Guideline)

4.1 Summary of chemical and physical properties

4.2 Data on environmental behavior

4.3 Bio-toxicological effects

4.4 Source(s) of reference

**5 *TECHNICAL MATERIAL***

(Details pertaining to this section should be furnished in separate documents. Indicate respective number(s) of the annexed documents against relevant Items below. Please see section 'D' in the Guideline)

5.1 Summary of chemical and physical properties:

5.2 Detailed composition

5.3 Method of analysis

5.4 Shelf-life

5.5 Toxicological data

5.6 Summary of residue data

5.7 Method of residue analysis

6 *FORMULATION*

(Details pertaining to this section should be furnished in separate documents. Indicate respective number(s) of the annexed documents against relevant Items below. Please see section 'D' in the Guideline)

6.1 Summary of chemical and physical properties

6.2 Specific detailed composition

6.3 Method of analysis

6.4 Shelf-life

6.5 Toxicological data

6.6 Summary of bio-efficacy data

7 *ADDITIONAL SUBMISSIONS*

7.1 Specimen labels prepared in accordance with the Section 8 of the Act, in duplicate

7.2 Specimen containers

7.3 Specimen samples of

7.3.1 Reference standard (active ingredient(s) and any toxic impurities/isomers, if present (1 g or 1 ml)

7.3.2 Technical grade material (from the source declared above) (50 g or 50 ml)

7.3.3 Formulation (from the source declared above) (100 g or 100 ml)

7.3.3.1 Aerosols (2X100 ml or more)

7.3.3.2 Mosquito Coils (5X10 pieces)

7.3.3.3 Mosquito Mats (3X30 pieces)

7.3.3.4 Others (Refer to Pesticide Registration Authority)

7.4 Non refundable payment a sum of Rs. 6,500.00 as filing fee (Cheques must be drawn in favour of the Director General of Agriculture. Money-orders must be payable at the Post Office-Peradeniya.)

l hereby solemnly declare and affirm that all information given by me is true and correct.

Signature, Date
Name & Designation

*Notes:*

1. *Applications will not be accepted if sections 1,2,3 and 7 are incomplete. Authority may waive details of certain technical data requirements of the Sections 4,5 and 6 or accept applications lack any of those details for evaluation on the basis that it may not increase any potential adverse effect on human health and the environment.*
2. *The decision of registration of the pesticide is based on the submission of document along with the registration application on the assumption that they are final and accurate declarations for that purpose. Therefore, administrative or other legal actions would not be reviewed on the grounds that those declarations contained incorrect information by an oversight or typing mistake unless the reports pertaining to such claims are verified at the expense of the applicant through independent sources decided by the Registration Authority. However, the Registrant may propose amendments or alterations to their submissions if they find the claims need to be updated based on subsequent field observations, published reports with proof or proprietary data by the patent holder.*
3. *Upon acceptance of the application for registration, a sum ofRs.4, 000.00 (A cheque drawn in favour of the Director General of Agriculture or a Money-order payable at Post Office-Peradeniya shall be submitted as registration fee*

***Office use only***

Application No: Date received:

Registration No: Date Registered

Application accepted/returned:

Reasons for the return:

. Incomplete application. (Items: .....)
. Technical documents are not numbered
. Relevant references are not indicated in the application
. Technical documents are not in duplicate

*Form No: RP/07*

## Application for Re-registration of Pesticides

1. Name and address of the Registrant

2. Trade name:

3. Common name:

4. Strength:

5. Type of formulation:

6. Use category: Insecticide/Fungicide/Weedicide /Biocide/Acaricide /Others

7. Use classification: Agro/General/Restricted/House hold/Vet/Warehouse/Others

8. Source information:
   a. Manufacturer
   b. Formulator:
   c. Supplier:

9. Registration information:
   a. Registration/ Code No.
   b. Date of expiry of current registration:

10. Container sizes approved:

    Additional requests:

11. Container type approved:

    Additional requests (Please provide specific details and specimen)

*Form No: RP/07*

12. Additional technical information attached Yes ☐ No. ☐

13. Cheque No ☐ Date ☐ Value ☐

..... .....
Signature Date

Note:

1. All items listed above shall be duly completed. The application will be returned if not complete
2. Copies of printed labels must be enclosed
3. If the previous registration is lapsed for more than three months a fresh application for registration should be submitted with necessary fees.
4. When this form is reproduced, please do not alter any parameter of the format.

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**FOR OFFICE USE ONLY**

Cheque CREDIT/ RETURN /HOLD

Reason .....

Fresh/revalidated cheque received ☐ Date ☐ Cheque ☐

Registration Status: License/ Provisional permit from ☐

1. Import of/Local purchase of/ technical material/ formulation, formulate/ pack/ repack/label at own/authorised facility, and sale/offer to authorized users/institutions/CRI/TRI, own use / indenting purpose only.
2. Product is restricted for; Not applicable/ .....
3. Label is approved with amendments of .....

   - Non/Third party registration of (Regd.no .....) M/s .....
   - Date of expiry of the original registration .....

Remarks on printed label

## Registered Pesticides

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| A27 | 2,4-D Amine | 2,4-D (acid equivalent) | 720 | g/1 | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 14 | Hedonal D 55 | 2,4-D (acid equivalent) | 550 | g/1 | Weedicide | Hayleys Agro Products Limited |
| H05 | Mig 18 | abamectin | 18 | g/1 | Insecticide | Opex Holding (Pvt.) Limited |
| G19 | Mightee | abamectin | 18 | g/1 | Insecticide/Miticide | M-Chems (Pvt.) Limited |
| F35 | Vertimacl.8%EC | abamectin | 18 | g/1 | Insecticide | Lankem Ceylon Limited |
| G09 | Zoro | abamectin | 18 | g/1 | Insecticide/Miticide | Harrisons Chemical (Pvt.) Limited |
| G47 | Acitole | acephate | 75 | % | Insecticide | SunAgro LifeScience Limited |
| G18 | Action-R | acephate | 75 | % | Insecticide | M-Chems (Pvt.) Limited |
| G81 | AgStar Acephate | acephate | 75 | % | Insecticide | AgStar Chemicals (Pvt.) Limited |
| A75 | Apollo | acephate | 75 | % | Insecticide | Mackwoods Limited |
| G97 | CIC Acephate | acephate | 75 | % | Insecticide | Chemical Industries (Colombo) Limited |
| 114400 | Harthene | acephate | 75 | % | Insecticide | Harrisons Chemical (Pvt.) Limited |
| A45 | Lancer | acephate | 75 | % | Insecticide | DTW International (Pvt.) Limited |
| F32 | O-Phate | acephate | 75 | % | Insecticide | Oasis Marketing Company (Pvt.) Limited |
| E01 | Orthene | acephate | 75 | % | Insecticide | BASF Finlay (Pvt.) Limited |
| F92 | Superthene | acephate | 75 | % | Insecticide | Opex Holding (Pvt.) Limited |
| G27 | Surrender | acephate | 75 | % | Insecticide | Agro Technica Limited |
| C02 | Mospilan | acetamiprid | 20 | % | Insecticide | J.L. Morison Son & Jones (Ceylon) Limited |
| 170 | Alachlor | alachlor | 480 | g/1 | Weedicide | Zagro Singapore (Pvt.) Limited |
| F91 | Alachlor | alachlor | 480 | g/1 | Weedicide | A. Baur & Company Limited |
| 93132 | Answer | alachlor | 480 | g/1 | Weedicide | Harrisons Chemical (Pvt.) Limited |
| H50 | CG Laxsso | alachlor | 480 | g/1 | Weedicide | CIC Crop Guard (Pvt.) Limited |
| C52 | HaychlorEC48% | alachlor | 480 | g/1 | Weedicide | Hayleys Agro Products Limited |
| 52 | Lasso | alachlor | 480 | g/1 | Weedicide | Lankem Ceylon Limited |
| A59 | Lasso | alachlor | 480 | g/1 | Weedicide | Monsanto India Company (Pvt.) Limited |
| 00G3132 | Layer | alachlor | 480 | g/1 | Weedicide | Agro Technica Limited |
| G31 | Layer | alachlor | 480 | g/1 | Weedicide | Agro Technica Limited |
| 872 | Mackchlor | alachlor | 480 | g/1 | Weedicide | Mackwoods Limited |
| 931 | Regal | alachlor | 480 | g/1 | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 778 | Citowett | alkyl aryl polyglycol ether | 990 | g/1 | Others | BASF Finlay (Pvt.) Limited |
| E31 | Multiplex Multineem | azadirachtin | 0.03 | % | Insecticide | Multiplex Fertilizers Lanka (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 947 | NeemAzal-F | azadirachtin | 50 | g/1 | Insecticide | Islandwide Marketing Services (Pvt.) Limited |
| F0B6200 | Neemazal-T/S | azadirachtin | 10 | g/1 | Insecticide | Islandwide Marketing Services (Pvt.) Limited |
| F14 | Sindax 10 WP | uciisuiiuiuii-iiicuiyi t iiicLsuiiuioi]-methyl | 8.25+1 | % | Weedicide | Lankem Ceylon Limited |
| B20 | Nominee 100 SC | bispyribac-sodium | 100 | g/1 | Weedicide | Lankem Ceylon Limited |
| E90 | Baycor EC 300 | bitertanol | 300 | g/1 | Fungicide | Hayleys Agro Products Limited |
| 601 | Applaud 10 WP | buprofezin | 10 | % | Insect Growth Regul | Chemical Industries (Colombo) Limited |
| G73 | Applaud 10 WP | buprofezin | 10 | % | Insecticide | CIC Crop Guard (Pvt.) Limited |
| A70 | Captaf50WP | captan | 50 | % | Fungicide | Harrisons Chemical (Pvt.) Limited |
| 26306 | Captan | captan | 50 | % | Fungicide | A. Baur & Company Limited |
| 126300 | Captan | captan | 50 | % | Fungicide | A. Baur & Company Limited |
| D32 | Captan 50 WP | captan | 50 | % | Fungicide | Lankem Ceylon Limited |
| 9205 | Ceypetco Carbaryl 85% WP | carbaryl | 85 | % | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 57505 | Mackwin | carbaryl | 85 | % | Insecticide | Mackwoods Limited |
| F19 | Oawin | carbaryl | 85 | % | Insecticide | Oasis Marketing Company (Pvt.) Limited |
| E08 | Savin 85 WP | carbaryl | 85 | % | Insecticide | Asiatic Agricultural (Colombo) Office |
| A44 | Sevin 85 S | carbaryl | 85 | % | Insecticide | Bayer Thai Company Limited |
| 575 | Sevin 85% WP | carbaryl | 85 | % | Insecticide | Mackwoods Limited |
| E79 | Sevin 85% WP | carbaryl | 85 | % | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 516 | Sevin XLR | carbaryl | 480 | g/1 | Insecticide | Chemical Industries (Colombo) Limited |
| E41 | Venus | carbaryl | 85 | % | Insecticide | Novela (Pvt.) Limited |
| 925 | Bavistin FL | carbendazim | 500 | g/1 | Fungicide | BASF Finlay (Pvt.) Limited |
| G26 | Benzor | carbendazim | 50 | % | Fungicide | Harrisons Chemical (Pvt.) Limited |
| F54 | Billet | carbendazim | 50 | % | Fungicide | Farmchemie (Pvt.) Limited |
| E44 | Blast | carbendazim | 50 | % | Fungicide | Sabaragamuwa Fertilizers (Pvt.) Limited |
| 00B9232 | Bullet 50 | carbendazim | 50 | % | Fungicide | Agro Technica Limited |
| B92 | Bullet 50 | carbendazim | 50 | % | Fungicide | Agro Technica Limited |
| E96 | Canon | carbendazim | 50 | % | Fungicide | Oasis Marketing Company (Pvt.) Limited |
| F063700 | Carbendazim 50 WP | carbendazim | 50 | % | Fungicide | Zagro Singapore (Pvt.) Limited |
| F75 | Carbin | carbendazim | 50 | % | Fungicide | Opex Holding (Pvt.) Limited |
| F072600 | Cekudazim 50% WP | carbendazim | 50 | % | Fungicide | Nukemi NN (Ceylon) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| FF72600 | Cekudazim 50% WP | carbendazim | 50 | % | Fungicide | Nukemi NN (Ceylon) Limited |
| G94 | Downey | carbendazim | 50 | % | Fungicide | SunAgro LifeScience Limited |
| G75 | Ho-Guard | carbendazim | 50 | % | Fungicide | CIC Crop Guard (Pvt.) Limited |
| 11332 | Shoot | carbendazim | 50 | % | Fungicide | Mackwoods Limited |
| 111308 | Shoot | carbendazim | 50 | % | Fungicide | Mackwoods Limited |
| 89505 | Baur's Carbofuran 3G | carbofuran | 3 | % | Insecticide/Nematici | A. Baur & Company Limited |
| 89532 | Baur's Carbofuran 3G | carbofuran | 3 | % | Insecticide/Nematoc | A. Baur & Company Limited |
| F089528 | Baur's Carbofuran 3G | carbofuran | 3 | % | Insecticide/Nematoc | A. Baur & Company Limited |
| E03 | Bowncer | carbofuran | 3 | % | Insecticide/Nematoc | Sabaragamuwa Fertilizers (Pvt.) Limited |
| D91 | Cabufudan 3G | carbofuran | 3 | % | Insecticide | Asiatic Agricultural (Colombo) Office |
| E02 | Carbofudan 3G | carbofuran | 3 | % | Insecticide/Nematoc | Chemical Industries (Colombo) Limited |
| 209400 | Carbofuran | carbofuran | 3 | % | Insecticide/Nematici | Ceylon Petroleum Corporation (Chemical Division) |
| 00G6305 | CG Carbofuran | carbofuran | 3 | % | Insecticide | CIC Crop Guard (Pvt.) Limited |
| G63 | CG Carbofuran | carbofuran | 3 | % | Insecticide | CIC Crop Guard (Pvt.) Limited |
| A69 | Chinufur | carbofuran | 3 | % | Insecticide/Nematoc | Amcrop (Pvt.) Limited |
| 1635 | Curaterr 3 G | carbofuran | 3 | % | Insecticide | Hayleys Agro Products Limited |
| 1604 | Curaterr 3% G | carbofuran | 3 | % | Insecticide/Nematoc | Hayleys Agro Products Limited |
| 00A3505 | Finchem Carbofuran | carbofuran | 3 | % | Insecticide/Nematici | BASF Finlay (Pvt.) Limited |
| 00A3523 | Finchem Carbofuran | carbofuran | 3 | % | Insecticide/Nematoci | BASF Finlay (Pvt.) Limited |
| 00A3532 | Finchem Carbofuran | carbofuran | 3 | % | Insecticide/Nematici | BASF Finlay (Pvt.) Limited |
| 01A3506 | Finchem Carbofuran | carbofuran | 3 | % | Insecticide/Nematoci | BASF Finlay (Pvt.) Limited |
| E38 | Furacarb 3G | carbofuran | 3 | % | Insecticide/Nematici | No vela (Pvt.) Limited |
| 350 | Furadan 3 G | carbofuran | 3 | % | Insecticide/Nematoc | Innovative Pesticide Marketing (Pvt.) Limited |
| 69005 | Harfurdan | carbofuran | 3 | % | Insecticide/Nematici | Harrisons Chemical (Pvt.) Limited |
| 69032 | Harfurdan | carbofuran | 3 | % | Insecticide/Nematici | Harrisons Chemical (Pvt.) Limited |
| 169000 | Harfurdan | carbofuran | 3 | % | Insecticide/Nematoc | Harrisons Chemical (Pvt.) Limited |
| G25 | Kicker | carbofuran | 3 | % | Insecticide/Nematici | M-Chems (Pvt.) Limited |
| F52 | Kilater | carbofuran | 3 | % | Insecticide/Nematici | Farmchemie (Pvt.) Limited |
| 00F6805 | Licocarb | carbofuran | 3 | % | Insecticide | Opex Holding (Pvt.) Limited |
| F68 | Licocarb | carbofuran | 3 | % | Insecticide/Nematici | Opex Holding (Pvt.) Limited |
| 684 | Mackwoods Carbofuran | carbofuran | 3 | % | Insecticide/Nematoc | Mackwoods Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 68405 | Mackwoods Carbofuran | carbofuran | 3 | % | Insecticide/Nematici | Mackwoods Limited |
| 68407 | Mackwoods Carbofuran | carbofuran | 3 | % | Insecticide/Nematici | Mackwoods Limited |
| 68423 | Mackwoods Carbofuran | carbofuran | 3 | % | Insecticide/Nematoc | Mackwoods Limited |
| 68432 | Mackwoods Carbofuran | carbofuran | 3 | % | Insecticide | Mackwoods Limited |
| C77 | Poloran | carbofuran | 3 | % | Insecticide | TeckAgro Fertilizer (Pvt.) Limited |
| 00F2432 | Polydan 3% G | carbofuran | 3 | % | Insecticide/Nematici | Lankem Ceylon Limited |
| F24 | Polydan 3% G | carbofuran | 3 | % | Insecticide/Nematici | Lankem Ceylon Limited |
| E29 | Terminator 3% G | carbofuran | 3 | % | Insecticide/Nematici | Oasis Marketing Company (Pvt.) Limited |
| 00C4505 | Ureka | carbofuran | 3 | % | Insecticide/Nematici | Unipower (Pvt.) Limited |
| 00C4532 | Ureka | carbofuran | 3 | % | Insecticide/Nematici | Unipower (Pvt.) Limited |
| C45 | Ureka | carbofuran | 3 | % | Insecticide/Nematoc | Unipower (Pvt.) Limited |
| D65 | Victor 300 | carbofuran | 3 | % | Insecticide/Nematici | Zagro Singapore (Pvt.) Limited |
| C06 | Marshal 20 SC | carbosulfan | 200 | g/1 | Insecticide | Innovative Pesticide Marketing (Pvt.) Limited |
| 513 | Atabron 5 EC | chlorfluazuron | 50 | g/1 | Insect Growth Regul | Chemical Industries (Colombo) Limited |
| A91 | Daconil SC | chlorothalonil | 500 | g/1 | Fungicide | J.L. Morison Son & Jones (Ceylon) Limited |
| H29 | Ronil | chlorothalonil | 500 | g/1 | Fungicide | Opex Holding (Pvt.) Limited |
| 192105 | Agrocare Commando 400 | chlorpyrifos | 400 | g/1 | Insecticide | Agro Technica Limited |
| A60 | Amichlor | chlorpyrifos | 400 | g/1 | Insecticide | Amcrop (Pvt.) Limited |
| 55824 | Ceypetco Ceyphos | chlorpyrifos | 400 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 55828 | Ceyphos 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 55832 | Ceyphos 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 155805 | Ceyphos 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 155809 | Ceyphos 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 01G6805 | CG Rider | chlorpyrifos | 400 | g/1 | Insecticide | CIC Crop Guard (Pvt.) Limited |
| G68 | CG Rider | chlorpyrifos | 400 | g/1 | Insecticide | CIC Crop Guard (Pvt.) Limited |
| 00F7305 | Chikara | chlorpyrifos | 400 | g/1 | Insecticide | Opex Holding (Pvt.) Limited |
| F73 | Chikara | chlorpyrifos | 400 | g/1 | Insecticide | Opex Holding (Pvt.) Limited |
| F0A0700 | Chlorban | chlorpyrifos | 200 | g/1 | Insecticide | DTW International (Pvt.) Limited |
| 924 | Chlorban Plus | chlorpyrifos | 400 | g/1 | Insecticide | DTW International (Pvt.) Limited |
| 01G8505 | Chlorifos 400 | chlorpyrifos | 400 | g/1 | Insecticide | AgStar Chemicals (Pvt.) Limited |
| G85 | Chlorifos 400 | chlorpyrifos | 400 | g/1 | Insecticide | AgStar Chemicals (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 967 | Chlorpyrifos | chlorpyrifos | 400 | g/1 | Insecticide | Asiatic Agricultural (Colombo) Office |
| 192100 | Commando | chlorpyrifos | 40 | % | Insecticide | Agro Technica Limited |
| 921 | Commando 400 | chlorpyrifos | 400 | g/1 | Insecticide | Agro Technica Limited |
| 92125 | Commando 400 | chlorpyrifos | 400 | g/1 | Insecticide | Agro Technica Limited |
| A88 | Cyren 20 | chlorpyrifos | 200 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| 00A8705 | Cyren 40 | chlorpyrifos | 400 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| A87 | Cyren 40 | chlorpyrifos | 400 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| F55 | Dadas | chlorpyrifos | 400 | g/1 | Insecticide | Farmchemie (Pvt.) Limited |
| 01G4605 | Dragon | chlorpyrifos | 400 | g/1 | Insecticide | SunAgro LifeScience Limited |
| G46 | Dragon | chlorpyrifos | 400 | g/1 | Insecticide | SunAgro LifeScience Limited |
| E86 | Emphos 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | M-Chems (Pvt.) Limited |
| 00A8725 | Finfos 40 | chlorpyrifos | 400 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| D71 | Inciban | chlorpyrifos | 400 | g/1 | Insecticide | Kemtek (Pvt.) Limited |
| 64832 | Judo 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Lankem Ceylon Limited |
| 164800 | Judo 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Lankem Ceylon Limited |
| 00C9325 | Leedorban | chlorpyrifos | 400 | g/1 | Insecticide | Shankem (Pvt.) Limited |
| 00C9332 | Leedorban | chlorpyrifos | 400 | g/1 | Insecticide | Shankem (Pvt.) Limited |
| C93 | Leedorban | chlorpyrifos | 400 | g/1 | Insecticide | Shankem (Pvt.) Limited |
| D16 | Lorsban 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Hayleys Agro Products Limited |
| 112 | Mackfos | chlorpyrifos | 200 | g/1 | Insecticide | Mackwoods Limited |
| 73809 | Morifos 40 | chlorpyrifos | 400 | g/1 | Insecticide | J.L. Morison Son & Jones (Ceylon) Limited |
| 73823 | Morifos 40 | chlorpyrifos | 400 | g/1 | Insecticide | J.L. Morison Son & Jones (Ceylon) Limited |
| 73825 | Morifos 40 | chlorpyrifos | 400 | g/1 | Insecticide | J.L. Morison Son & Jones (Ceylon) Limited |
| C70 | Nokia | chlorpyrifos | 400 | g/1 | Insecticide | Leek Agro Fertilizer (Pvt.) Limited |
| E34 | Oruga-400 | chlorpyrifos | 400 | g/1 | Insecticide | Novela (Pvt.) Limited |
| 63205 | Pattaas | chlorpyrifos | 400 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 63220 | Pattaas | chlorpyrifos | 400 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 63232 | Pattaas | chlorpyrifos | 400 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 163205 | Pattaas 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| E51 | Pestban Super | chlorpyrifos | 400 | g/1 | Insecticide | Zagro Singapore (Pvt.) Limited |
| 00A3205 | Pyriban | chlorpyrifos | 400 | g/1 | Insecticide | Oasis Marketing Company (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 00A3232 | Pyriban | chlorpyrifos | 400 | g/1 | Insecticide | Oasis Marketing Company (Pvt.) Limited |
| F0A3200 | Pyriban | chlorpyrifos | 400 | g/1 | Insecticide | Oasis Marketing Company (Pvt.) Limited |
| 570 | Pyrimack | chlorpyrifos | 400 | g/1 | Insecticide | Mackwoods Limited |
| 57005 | Pyrimack | chlorpyrifos | 400 | g/1 | Insecticide | Mackwoods Limited |
| 57008 | Pyrimack | chlorpyrifos | 400 | g/1 | Insecticide | Mackwoods Limited |
| 57023 | Pyrimack | chlorpyrifos | 400 | g/1 | Insecticide | Mackwoods Limited |
| F047000 | Pyrinex 20 EC | chlorpyrifos | 200 | g/1 | Insecticide | A. Baur & Company Limited |
| 607 | Pyrinex 400 | chlorpyrifos | 400 | g/1 | Insecticide | A. Baur & Company Limited |
| 57032 | Rambo | chlorpyrifos | 400 | g/1 | Insecticide | Mackwoods Limited |
| 157005 | Rambo | chlorpyrifos | 400 | g/1 | Insecticide | Mackwoods Limited |
| F057025 | Rambo | chlorpyrifos | 400 | g/1 | Insecticide | Mackwoods Limited |
| F05 | Sando | chlorpyrifos | 400 | g/1 | Insecticide | Sabaragamuwa Fertilizers (Pvt.) Limited |
| 198605 | Tiger 400 | chlorpyrifos | 400 | g/1 | Insecticide | Unipower (Pvt.) Limited |
| 98605 | Unifos 400 | chlorpyrifos | 400 | g/1 | Insecticide | Unipower (Pvt.) Limited |
| 98628 | Unifos 400 | chlorpyrifos | 400 | g/1 | Insecticide | Unipower (Pvt.) Limited |
| 98632 | Unifos 400 | chlorpyrifos | 400 | g/1 | Insecticide | Unipower (Pvt.) Limited |
| 198609 | Unifos 400 | chlorpyrifos | 400 | g/1 | Insecticide | Unipower (Pvt.) Limited |
| 919 | Vitashield 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Chemical Industries (Colombo) Limited |
| 196700 | Vitashield 40 EC | chlorpyrifos | 400 | g/1 | Insecticide | Asiatic Agricultural (Colombo) Office |
| F57 | Matric 5% SC | chromafenozide | 50 | g/1 | Insect Growth Regul | Arysta LifeScience Corporation |
| F93 | Matric 5% SC | chromafenozide | 50 | g/1 | Insect Growth Regul | Lankem Ceylon Limited |
| D13 | ComPro 60 EC | clomazone + propanil | 200+400 | g/1 | Weedicide | Innovative Pesticide Marketing (Pvt.) Limited |
| B26 | Blue Diamond | copper (as copper oxychloride) | 50 | % | Fungicide | Farm & Chemical Products (Pvt.) Limited |
| B69 | Blue Diamond | copper (as copper oxychloride) | 50 | % | Fungicide | Unipower (Pvt.) Limited |
| 215900 | Coblite | copper (as copper oxychloride) | 50 | % | Fungicide | Harrisons Chemical (Pvt.) Limited |
| 597 | Cobox | copper (as copper oxychloride) | 50 | % | Fungicide | BASF Finlay (Pvt.) Limited |
| 210106 | COC 50% WP | copper (as copper oxychloride) | 50 | % | Fungicide | Ceylon Petroleum Corporation (Chemical Division) |
| 87120 | Copperdoz 50% WP | copper (as copper oxychloride) | 50 | % | Fungicide | A. Baur & Company Limited |
| 713 | Helmoxy WP 50% | copper (as copper oxychloride) | 50 | % | Fungicide | Hayleys Agro Products Limited |
| D08 | Protek | copper (as copper oxychloride) | 50 | % | Fungicide | Polychemex (Pvt.) Limited |
| 02B0706 | Punch | copper (as copper oxychloride) | 50 | % | Fungicide | Lankem Ceylon Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| E15 | Rusta | copper (as copper oxychloride) | 50 | % | Fungicide | Agro Technica Limited |
| D15 | RustaWP50% | copper (as copper oxychloride) | 50 | % | Fungicide | Hayleys Agro Products Limited |
| 643 | Champion | copper (as cupric hydroxide) | 50 | % | Weedicide | Mackwoods Limited |
| 402 | Kocide 101 | copper (as cupric hydroxide) | 50 | % | Fungicide | Lankem Ceylon Limited |
| 137 | Perenox | copper (as cuprous oxide) | 50 | % | Fungicide | Chemical Industries (Colombo) |
| D83 | Invest | cyclosulfamuron | 10 | % | Weedicide | Limited BASF Finlay (Pvt.) Limited |
| F0B6000 | Clincher 10 EC | cyhalofop-butyl | 100 | g/1 | Weedicide | Chemical Industries (Colombo) Limited |
| B72 | Trigard 75 WP | cyromazine | 75 | % | Insect Growth Regul | Lankem Ceylon Limited |
| 146 | Basudin 5 G | diazinon | 5 | % | Insecticide | Lankem Ceylon Limited |
| 160 | Basudin 50 EC | diazinon | 500 | g/1 | Insecticide | Lankem Ceylon Limited |
| 116006 | Basudin 50 EC | diazinon | 500 | g/1 | Insecticide | Lankem Ceylon Limited |
| G39 | Commet 50 EC | diazinon | 50 | g/1 | Insecticide | M-Chems (Pvt.) Limited |
| F84 | Dazino | diazinon | 500 | g/1 | Insecticide | Opex Holding (Pvt.) Limited |
| 62905 | Diaz in | diazinon | 500 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| F081200 | Diazinon 50 EC | diazinon | 500 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| C72 | Diazol | diazinon | 500 | g/1 | Insecticide | A. Baur & Company Limited |
| E93 | Dinoser 5% G | diazinon | 5 | % | Insecticide | Agro Technica Limited |
| 01A9300 | Diodin 50 EC | diazinon | 500 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| A93 | Diodin 50 EC | diazinon | 500 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| OOF1005 | Diodin 5G | diazinon | 5 | % | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 01F1000 | Diodin 5G | diazinon | 5 | % | Insecticide | Harrisons Chemical (Pvt.) Limited |
| F10 | Diodin 5G | diazinon | 5 | % | Insecticide | Harrisons Chemical (Pvt.) Limited |
| G92 | Gallent | diazinon | 500 | g/1 | Insecticide | SunAgro LifeScience Limited |
| G93 | Gallent 5%G | diazinon | 5 | % | Insecticide | SunAgro LifeScience Limited |
| F20 | Oasinon | diazinon | 500 | g/1 | Insecticide | Oasis Marketing Company (Pvt.) Limited |
| 00A4606 | Surya 5% G | diazinon | 5 | % | Insecticide | Mackwoods Limited |
| A46 | Surya 5% G | diazinon | 5 | % | Insecticide | Mackwoods Limited |
| 00A7405 | Surya 50% EC | diazinon | 500 | g/1 | Insecticide | Mackwoods Limited |
| A74 | Surya 50% EC | diazinon | 500 | g/1 | Insecticide | Mackwoods Limited |
| E04 | Vitanon 50 EC | diazinon | 500 | g/1 | Insecticide | Asiatic Agricultural (Colombo) Office |
| C19 | Baraki Pellets | difethialone | 0.0025 | % | Rodenticide | Nukemi NN (Ceylon) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| C18 | Baraki Wax Blocks | difethialone | 0.0025 | % | Rodenticide | Nukemi NN (Ceylon) Limited |
| 90605 | Agromet EC 40% | dimethoate | 400 | g/1 | Insecticide | Agro Technica Limited |
| 190605 | Agromet EC 40% | dimethoate | 400 | g/1 | Insecticide | Agro Technica Limited |
| 951 | Baur's Dimethoate | dimethoate | 400 | g/1 | Insecticide | A. Baur & Company Limited |
| 195105 | Baur's Dimethoate | dimethoate | 400 | g/1 | Insecticide | A. Baur & Company Limited |
| 01E1305 | Boxer | dimethoate | 400 | g/1 | Insecticide | Kemtek (Pvt.) Limited |
| E13 | Boxer 40 | dimethoate | 400 | g/1 | Insecticide | Kemtek (Pvt.) Limited |
| E82 | Dem-2 | dimethoate | 400 | g/1 | Insecticide | M-Chems (Pvt.) Limited |
| 01G8005 | Dimethoate | dimethoate | 400 | g/1 | Insecticide | CIC Crop Guard (Pvt.) Limited |
| F124200 | Dimethoate | dimethoate | 400 | g/1 | Insecticide | Zagro Singapore (Pvt.) Limited |
| G80 | Dimethoate | dimethoate | 400 | g/1 | Insecticide | CIC Crop Guard (Pvt.) Limited |
| 5905 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Lankem Ceylon Limited |
| 9106 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 9132 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 13405 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Chemical Industries (Colombo) Limited |
| 95105 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | A. Baur & Company Limited |
| 105905 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Lankem Ceylon Limited |
| 105932 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Lankem Ceylon Limited |
| 109105 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 113432 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Chemical Industries (Colombo) Limited |
| F009105 | Dimethoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| D80 | Dimezyl 40 EC | dimethoate | 400 | g/1 | Insecticide | Farm & Chemical Products (Pvt.) Limited |
| F51 | Direkter | dimethoate | 400 | g/1 | Insecticide | Farmchemie (Pvt.) Limited |
| 01F7032 | Disu | dimethoate | 400 | g/1 | Insecticide | Opex Holding (Pvt.) Limited |
| F70 | Disu | dimethoate | 400 | g/1 | Insecticide | Opex Holding (Pvt.) Limited |
| C92 | Dora 40 | dimethoate | 400 | g/1 | Insecticide | Shankem (Pvt.) Limited |
| F1C9232 | Dora 40 | dimethoate | 400 | g/1 | Insecticide | Shankem (Pvt.) Limited |
| F09 | Fezmet 40 | dimethoate | 400 | g/1 | Insecticide | Zagro Singapore (Pvt.) Limited |
| 148 | Harcros Demro | dimethoate | 400 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 14805 | Harcros Demro | dimethoate | 400 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 114805 | Harcros Demro | dimethoate | 400 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 114832 | Harcros Demro | dimethoate | 400 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 01D8105 | Jivron | dimethoate | 400 | g/1 | Insecticide | Sabaragamuwa Fertilizers (Pvt.) Limited |
| D81 | Jivron | dimethoate | 400 | g/1 | Insecticide | Sabaragamuwa Fertilizers (Pvt.) Limited |
| G44 | Lara | dimethoate | 400 | g/1 | Insecticide | SunAgro LifeScience Limited |
| 62005 | Mackthoate | dimethoate | 400 | g/1 | Insecticide | Mackwoods Limited |
| 62032 | Mackthoate | dimethoate | 400 | g/1 | Insecticide | Mackwoods Limited |
| 162005 | Mackthoate | dimethoate | 400 | g/1 | Insecticide | Mackwoods Limited |
| 162032 | Mackthoate | dimethoate | 400 | g/1 | Insecticide | Mackwoods Limited |
| D77 | Oasis Dimethoate 40% | dimethoate | 400 | g/1 | Insecticide | Oasis Marketing Company (Pvt.) Limited |
| 01D0505 | Perfekt | dimethoate | 400 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| 01D0532 | Perfekt | dimethoate | 400 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| D05 | Perfekt | dimethoate | 400 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| E39 | Protect 40 | dimethoate | 400 | g/1 | Insecticide | Novela (Pvt.) Limited |
| 855 | Rogrow | dimethoate | 400 | g/1 | Insecticide | JL. Morison Son & Jones (Ceylon) Limited |
| 85506 | Rogrow | dimethoate | 400 | g/1 | Insecticide | JL. Morison Son & Jones (Ceylon) Limited |
| 85532 | Rogrow | dimethoate | 400 | g/1 | Insecticide | JL. Morison Son & Jones (Ceylon) Limited |
| 185505 | Rogrow | dimethoate | 400 | g/1 | Insecticide | JL. Morison Son & Jones (Ceylon) Limited |
| 01B7105 | Turbo 40 EC | dimethoate | 400 | g/1 | Insecticide | Unipower (Pvt.) Limited |
| B71 | Turbo 40 EC | dimethoate | 400 | g/1 | Insecticide | Unipower (Pvt.) Limited |
| 966 | Vitoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Asiatic Agricultural (Colombo) Office |
| 196600 | Vitoate 40 EC | dimethoate | 400 | g/1 | Insecticide | Asiatic Agricultural (Colombo) Office |
| G86 | Agrocare Diuron | diuron | 80 | % | Weedicide | Agro Technica Limited |
| G61 | AgStar Diuron 80% | diuron | 80 | % | Weedicide | AgStar Chemicals (Pvt.) Limited |
| 13025 | CIC Diuron | diuron | 80 | % | Weedicide | Chemical Industries (Colombo) Limited |
| 313006 | CIC Diuron | diuron | 80 | % | Weedicide | Chemical Industries (Colombo) Limited |
| 109810 | Diuron 80 %WP | diuron | 80 | % | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |
| 130 | Diuron 80 WP | diuron | 80 | % | Weedicide | Chemical Industries (Colombo) Limited |
| 954 | Diuron 80 WP | diuron | 80 | % | Weedicide | DTW International (Pvt.) Limited |
| C49 | Diuron 80 WP | diuron | 80 | % | Weedicide | A. Baur & Company Limited |
| F009825 | Diuron 80% WP | diuron | 80 | % | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |
| F109810 | Diuron 80% WP | diuron | 80 | % | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 14702 | Ducron | diuron | 80 | % | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 14725 | Ducron | diuron | 80 | % | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 314700 | Ducron | diuron | 80 | % | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 853 | Mackwoods Diuron | diuron | 80 | % | Weedicide | Mackwoods Limited |
| 185300 | Mackwoods Diuron | diuron | 80 | % | Weedicide | Mackwoods Limited |
| G17 | O-Uron | diuron | 80 | % | Weedicide | Oasis Marketing Company (Pvt.) Limited |
| H49 | Cow Brand | d-trans allethrin | 0.12 | % | Insecticide | Mosfly Lanka Trading (Pvt.) Limited |
| C38 | Hinosan EC 30% | edifenphos | 300 | g/1 | Fungicide | Bayer Thai Company Limited |
| F46 | Hinosan EC 30% | edifenphos | 300 | g/1 | Fungicide | Hayleys Agro Products Limited |
| 240 | Harcros Ethrel | ethephon | 52 | g/1 | Plant Growth Regula | Harrisons Chemical (Pvt.) Limited |
| E07 | Sunrice | ethoxysulfuron | 15 | % | Weedicide | ayer Thai Company Limited |
| E57 | Sunrice | ethoxysulfuron | 15 | % | Weedicide | Hayleys Agro Products Limited |
| 701 | Trebon 10 EC | etofenprox | 100 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| E70 | Nemacur 5% G | fenamiphos | 5 | % | Insecticide | Hayleys Agro Products Limited |
| 01E1105 | Agrocare BPMC | fenobucarb | 500 | g/1 | Insecticide | Agro Technica Limited |
| Ell | Agrocare BPMC | fenobucarb | 500 | g/1 | Insecticide | Agro Technica Limited |
| 5605 | Bassa 50 | fenobucarb | 500 | g/1 | Insecticide | Lankem Ceylon Limited |
| 5632 | Bassa 50 | fenobucarb | 500 | g/1 | Insecticide | Lankem Ceylon Limited |
| F005600 | Bassa 50 | fenobucarb | 500 | g/1 | Insecticide | Lankem Ceylon Limited |
| C54 | Baur's BPMC | fenobucarb | 500 | g/1 | Insecticide | A. Baur & Company Limited |
| 10 | Baycarb EC 50% | fenobucarb | 500 | g/1 | Insecticide | Bayer Thai Company Limited |
| E68 | Baycarb EC 50% | fenobucarb | 500 | g/1 | Insecticide | Hayleys Agro Products Limited |
| 01G4205 | BPMC | fenobucarb | 500 | g/1 | Insecticide | SunAgro LifeScience Limited |
| G42 | BPMC | fenobucarb | 500 | g/1 | Insecticide | SunAgro LifeScience Limited |
| 169 | BPMC 50 EC | fenobucarb | 500 | g/1 | Insecticide | Zagro Singapore (Pvt.) Limited |
| 28805 | BPMC 50 EC | fenobucarb | 500 | g/1 | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 50105 | BPMC 50 EC | fenobucarb | 500 | g/1 | Insecticide | Chemical Industries (Colombo) Limited |
| F050100 | BPMC 50 EC | fenobucarb | 500 | g/1 | Insecticide | Chemical Industries (Colombo) Limited |
| G99 | BPMC 50 EC | fenobucarb | 500 | g/1 | Insecticide | CIC Crop Guard (Pvt.) Limited |
| 15805 | Dozen 50 EC | fenobucarb | 500 | g/1 | Insecticide | Hanisons Chemical (Pvt.) Limited |
| 114800 | Dozen 50 EC | fenobucarb | 500 | g/1 | Insecticide | Hanisons Chemical (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 63605 | Finchem BPMC | fenobucarb | 500 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| 90705 | Hayleys Agrocare BPMC EC 50% | fenobucarb | 500 | g/1 | Insecticide | Agro Technica Limited |
| E14 | Keedawa | fenobucarb | 500 | g/1 | Insecticide | Sabaragamuwa Fertilizers (Pvt.) Limited |
| F37 | Kricket | fenobucarb | 500 | g/1 | Insecticide | Novela (Pvt.) Limited |
| 44804 | Mackarb | fenobucarb | 500 | g/1 | Insecticide | Mackwoods Limited |
| 44805 | Mackarb | fenobucarb | 500 | g/1 | Insecticide | Mackwoods Limited |
| 00C1204 | Moricarb | fenobucarb | 500 | g/1 | Insecticide | JL. Morison Son & Jones (Ceylon) Limited |
| C12 | Moricarb | fenobucarb | 500 | g/1 | Insecticide | JL. Morison Son & Jones (Ceylon) Limited |
| E95 | Oasis BPMC 50% | fenobucarb | 500 | g/1 | Insecticide | Oasis Marketing Company (Pvt.) Limited |
| E43 | Unipower BPMC 50% | fenobucarb | 500 | g/1 | Insecticide | Unipower (Pvt.) Limited |
| 01A7700 | Vitagro 50 EC | fenobucarb | 500 | g/1 | Insecticide | Asiatic Agricultural (Colombo) Office |
| A77 | Vitagro 50 EC | fenobucarb | 500 | g/1 | Insecticide | Asiatic Agricultural (Colombo) Office |
| 762 | Whip Super 7.5 EW | fenoxaprop-p-ethyl | 75 | g/1 | Weedicide | Bayer Thai Company Limited |
| 815 | Whip Super 7.5 EW | fenoxaprop-p-ethyl iciiuAapiup-p -cuiyi T | 75 | g/1 | Weedicide | Harrisons Chemical (Pvt.) Limited |
| F26 | TillerGold | ethoxysulfuron iciiuAapiup-p-cuiyi T | 20+69 | g/1 | Weedicide | Bayer Thai Company Limited |
| F27 | TillerGold | ethoxysulfuron | 69+20 | g/1 | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 17 | Lebaycid EC 50% | fenthion | 500 | g/1 | Insecticide | Bayer Thai Company Limited |
| E72 | Lebaycid EC 50% | fenthion | 500 | g/1 | Insecticide | Hayleys Agro Products Limited |
| C84 | Lecspro WP 44% | fentrazamide + propanil | 6.75+37.4 | % | Weedicide | Bayer Thai Company Limited |
| E61 | Lecspro WP 44% | fentrazamide + propanil | 6.75+37.4 | % | Weedicide | Hayleys Agro Products Limited |
| A66 | Prince GR | fipronil | 0.3 | % | Insecticide | BASF Finlay (Pvt.) Limited |
| 998 | Regent 50 SC | fipronil | 50 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| A65 | Regent GR | fipronil | 0.3 | % | Insecticide | Nukemi NN (Ceylon) Limited |
| E88 | Cascade | flufenoxuron | 100 | g/1 | Insect Growth Regul | BASF Finlay (Pvt.) Limited |
| G74 | Moncut | flutolanil | 50 | % | Fungicide | CIC Crop Guard (Pvt.) Limited |
| 948 | Moncut 50 WP | flutolanil | 50 | % | Fungicide | Chemical Industries (Colombo) Limited |
| C76 | FolpetWP50% | folpet | 50 | % | Fungicide | A. Baur & Company Limited |
| 257 | Anthio 33 | formothion | 330 | g/1 | Insecticide | A. Baur & Company Limited |
| 877 | Basta | glufosinate ammonium | 150 | g/1 | Weedicide | Bayer Thai Company Limited |
| E59 | Basta | glufosinate ammonium | 150 | g/1 | Weedicide | Hayleys Agro Products Limited |
| G60 | AgStar Glysate 36 | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | AgStar Chemicals (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 74405 | Baursate 36 | glyphosate (acid equivalent) | 360 | g/l | Weedicide | A. Baur & Company Limited |
| 74428 | Baursate 36 | glyphosate (acid equivalent) | 360 | g/l | Weedicide | A. Baur & Company Limited |
| 74432 | Baursate 36 | glyphosate (acid equivalent) | 360 | g/l | Weedicide | A. Baur & Company Limited |
| A85 | Blaster | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Polychemex (Pvt.) Limited |
| F038332 | Ceypecto Glyphosate | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |
| 38305 | Ceypetco Glyphosate | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |
| 38332 | Ceypetco Glyphosate | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |
| E27 | Clean Out | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Crystal Green (Pvt.) Limited |
| 00F2532 | Come-On | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 01F2500 | Come-On | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| F25 | Come-On | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| G05 | Count Up | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Farmchemie (Pvt.) Limited |
| G06 | Counter | glyphosate (acid equivalent) | 360 | g/l | Weedicide | International Crop Sciences Private Limited |
| 00F7732 | D-Dash | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Chemical Industries (Colombo) Limited |
| 00G7905 | D-Dash | glyphosate (acid equivalent) | 360 | g/l | Weedicide | CIC Crop Guard (Pvt.) Limited |
| 00G7949 | D-Dash | glyphosate (acid equivalent) | 360 | g/l | Weedicide | CIC Crop Guard (Pvt.) Limited |
| F77 | D-Dash | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Chemical Industries (Colombo) Limited |
| G79 | D-Dash | glyphosate (acid equivalent) | 360 | g/l | Weedicide | CIC Crop Guard (Pvt.) Limited |
| 67605 | Destroy | glyphosate (acid equivalent) | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 67632 | Destroy | glyphosate (acid equivalent) | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 167600 | Destroy | glyphosate (acid equivalent) | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 167605 | Destroy | glyphosate (acid equivalent) | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 167623 | Destroy | glyphosate (acid equivalent) | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 267600 | Destroy | glyphosate (acid equivalent) | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| F53 | Farmer's Glyphosate | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Farmchemie (Pvt.) Limited |
| 01D7306 | G2 | glyphosate (acid equivalent) | 360 | g/l | Weedicide | M-Chems (Pvt.) Limited |
| D73 | G2 | glyphosate (acid equivalent) | 360 | g/l | Weedicide | M-Chems (Pvt.) Limited |
| 00F6932 | Glychi | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Opex Holding (Pvt.) Limited |
| F69 | Glychi | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Opex Holding (Pvt.) Limited |
| E48 | Glypass | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Halchem Agro Services (Pvt.) Limited |
| 00C7905 | Glytoll | glyphosate (acid equivalent) | 360 | g/l | Weedicide | Oasis Marketing Company (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 00C7932 | Glytoll | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Oasis Marketing Company (Pvt.) Limited |
| C79 | Glytoll | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Oasis Marketing Company (Pvt.) Limited |
| H09 | Glyweed | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Access Engineering Services |
| A01 | Harass | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Amcrop (Pvt.) Limited |
| 00B5305 | Hatrik | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Unipower (Pvt.) Limited |
| 00B5307 | Hatrik | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Unipower (Pvt.) Limited |
| 00B5332 | Hatrrk | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Unipower (Pvt.) Limited |
| 01B5305 | Hatrrk | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Unipower (Pvt.) Limited |
| B53 | Hatrrk | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Unipower (Pvt.) Limited |
| 01C9600 | Major | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Cropbeat (Pvt.) Limited |
| F098400 | Mamba | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | General Distribution Systems (Pvt.) Limited |
| 00C3732 | Morison's Glyphosate | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | J.L. Morison Son & Jones (Ceylon) Limited |
| C37 | Morison's Glyphosate | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | JL. Morison Son & Jones (Ceylon) Limited |
| 996 | Powermet 36% | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Agro Technica Limited |
| 99607 | Powermet 36% | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Agro Technica Limited |
| C74 | Powermet 36% | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Hayleys Agro Products Limited |
| D27 | Ridweed 360 | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Asiatic Agricultural (Colombo) Office |
| E24 | Rounder | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Novela (Pvt.) Limited |
| 00A2330 | Roundup | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Lankem Ceylon Limited |
| A63 | Roundup | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Monsanto India Company (Pvt.) Limited |
| A86 | Spark | glyphosate (acid equivalent) | 120 | g/1 | Weedicide | Monsanto India Company (Pvt.) Limited |
| 00G3505 | Sunpower | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | SunAgro LifeScience Limited |
| G35 | Sunpower | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | SunAgro LifeScience Limited |
| 805 | Surpass | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Hayleys Agro Products Limited |
| D68 | T-36 | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Sabaragamuwa Fertilizers (Pvt.) Limited |
| 999 | Touchdown | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Chemical Industries (Colombo) Limited |
| G21 | Vanish | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | General Distribution Systems (Pvt.) Limited |
| F28 | Weed Killer | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Farm Land Agro Chemicals (Pvt.) Limited |
| 81828 | Weedol | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Mackwoods Limited |
| 181805 | Weedol | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Mackwoods Limited |
| 281800 | Weedol | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Mackwoods Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| O181800 | Weedol | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Mackwoods Limited |
| C68 | Weep Pack | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Teck Agro Fertilizer (Pvt.) Limited |
| C97 | Wipe-out | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Zagro Singapore (Pvt.) Limited |
| E19 | Wiper | glyphosate (acid equivalent) | 360 | g/1 | Weedicide | Kemtek (Pvt.) Limited |
| FOB9800 | Contaf5EC | hexaconazole | 5 | g/1 | Fungicide | Watawala Plantations Limited |
| B98 | Contaf5E | hexaconazole | 50 | g/1 | Fungicide | Watawala Plantations Limited |
| D50 | Eraser | hexaconazole | 50 | g/1 | Fungicide | Harrisons Chemical (Pvt.) Limited |
| F02 | Galan 5 EC | hexaconazole | 50 | g/1 | Fungicide | Asiatic Agricultural (Colombo) Office |
| G29 | Lazer | hexaconazole | 50 | g/1 | Fungicide | Opex Holding (Pvt.) Limited |
| F12 | Shakthi | hexaconazole | 50 | g/1 | Fungicide | BASF Finlay (Pvt.) Limited |
| C28 | NissorunlOWP | hexythiazox | 10 | % | Miticide | J.L. Morison Son & Jones (Ceylon) Limited |
| 808 | Admire SL 200 | imidacloprid | 200 | g/1 | Insecticide | Bayer Thai Company Limited |
| E64 | Admire SL 200 | imidacloprid | 200 | g/1 | Insecticide | Hayleys Agro Products Limited |
| A34 | Gaucho 70 WS | imidacloprid | 70 | % | Insecticide | Bayer Thai Company Limited |
| E74 | Gaucho 70 WS | imidacloprid | 70 | % | Insecticide | Hayleys Agro Products Limited |
| 01G1200 | Kohinor | imidacloprid | 200 | g/1 | Insecticide | A. Baur & Company Limited |
| G12 | Kohinor | imidacloprid | 200 | g/1 | Insecticide | A. Baur & Company Limited |
| G33 | Talent SL 200 | imidacloprid | 200 | g/1 | Insecticide | Agro Technica Limited |
| F088000 | Fuji-one | isoprothiolane | 400 | g/1 | Fungicide | Chemical Industries (Colombo) Limited |
| 100 | Kasumin 2 WSC | kasugamycin | 20 | g/1 | Fungicide | Ceylon Petroleum Corporation (Chemical Division) |
| B35 | Match 50 EC | lufenuron | 50 | g/1 | Insect Growth Regul | Lankem Ceylon Limited |
| D44 | Agrithane M 45 | mancozeb | 80 | % | Fungicide | Asiatic Agricultural (Colombo) Office |
| 00G6549 | AgStar Mancozeb | mancozeb | 80 | % | Fungicide | AgStar Chemicals (Pvt.) Limited |
| A67 | Amicozeb | mancozeb | 80 | % | Fungicide | Amcrop (Pvt.) Limited |
| 138 | Dithane M 45 | mancozeb | 80 | % | Fungicide | Chemical Industries (Colombo) Limited |
| H27 | Dithane M 45 | mancozeb | 80 | % | Fungicide | CIC Crop Guard (Pvt.) Limited |
| 00A3114 | Dynamic 80 | mancozeb | 80 | % | Fungicide | Oasis Marketing Company (Pvt.) Limited |
| F0A3100 | Dynamic 80 | mancozeb | 80 | % | Fungicide | Oasis Marketing Company (Pvt.) Limited |
| G08 | Farmers Mancozeb | mancozeb | 80 | % | Fungicide | Farmchemie (Pvt.) Limited |
| 01D9600 | Finchem Mancozeb | mancozeb | 80 | % | Fungicide | BASF Finlay (Pvt.) Limited |
| D96 | Finchem Mancozeb | mancozeb | 80 | % | Fungicide | BASF Finlay (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| H60 | Hayleys Agro Mancozeb 80% WP | mancozeb | 80 | % | Fungicide | Hayleys Agro Products Limited |
| 86825 | Hayleys Agrocare Mancozeb WP 80 | mancozeb | 80 | % | Fungicide | Agro Technica Limited |
| 859 | Mackzeb Indofil M 45 | mancozeb | 80 | % | Fungicide | Mackwoods Limited |
| D06 | Mancol | mancozeb | 80 | % | Fungicide | Shankem (Pvt.) Limited |
| 48310 | Mancozeb 80 WP | mancozeb | 80 | % | Fungicide | Harrisons Chemical (Pvt.) Limited |
| 10625 | Mancozeb 80% | mancozeb | 80 | % | Fungicide | Ceylon Petroleum Corporation (Chemical Division) |
| F010625 | Mancozeb 80% | mancozeb | 80 | % | Fungicide | Ceylon Petroleum Corporation (Chemical Division) |
| 48325 | Mancozeb 80% WP | mancozeb | 80 | % | Fungicide | Harrisons Chemical (Pvt.) Limited |
| 00F6749 | Mansumi | mancozeb | 80 | % | Fungicide | Opex Holding (Pvt.) Limited |
| F67 | Mansumi | mancozeb | 80 | % | Fungicide | Opex Holding (Pvt.) Limited |
| 4510 | Manzate | mancozeb | 80 | % | Fungicide | Lankem Ceylon Limited |
| H34 | Morizeb WP 80% | mancozeb | 80 | % | Fungicide | JL. Morison Son & Jones (Ceylon) Limited |
| 00C8625 | Polyzate | mancozeb | 80 | % | Fungicide | Lankem Ceylon Limited |
| C86 | Polyzate | mancozeb | 80 | % | Fungicide | Lankem Ceylon Limited |
| G04 | Right | mancozeb | 80 | % | Fungicide | M-Chems (Pvt.) Limited |
| G16 | Sabero-M 45 | mancozeb | 80 | % | Fungicide | Access Engineering Services |
| E23 | Shield | mancozeb | 80 | % | Fungicide | Novela (Pvt.) Limited |
| H28 | Speed | mancozeb | 80 | % | Fungicide | Innovative Pesticide Marketing (Pvt.) Limited |
| 00G4849 | Suncozeb | mancozeb | 80 | % | Fungicide | SunAgro LifeScience Limited |
| G48 | Suncozeb | mancozeb | 80 | % | Fungicide | SunAgro LifeScience Limited |
| 00A7228 | Unithane | mancozeb | 80 | % | Fungicide | Unipower (Pvt.) Limited |
| 994 | Uthane | mancozeb | 80 | % | Fungicide | DTW International (Pvt.) Limited |
| 00A7205 | Uthane | mancozeb | 80 | % | Fungicide | Unipower (Pvt.) Limited |
| 00A7225 | Uthane | mancozeb | 80 | % | Fungicide | Unipower (Pvt.) Limited |
| 265 | Vondozeb | mancozeb | 80 | % | Fungicide | A. Baur & Company Limited |
| 255 | Tri Miltox Forte | mancozeb + | 20+21 | % | Fungicide | A. Baur & Company Limited |
| Gil | Agrocil | mancozeb + metalaxyl | 64 + 8 | % | Fungicide | Agro Technica Limited |
| H02 | AgStar Rainguard 72 | mancozeb + metalaxyl | 8+64 | % | Fungicide | AgStar Chemicals (Pvt.) Limited |
| H44 | Mancolax | mancozeb + metalaxyl | 64 + 8 | % | Fungicide | BASF Finlay (Pvt.) Limited |
| D72 | Metalax | mancozeb + metalaxyl | 64+8 | % | Fungicide | Mackwoods Limited |
| HOI | Metaxil | mancozeb + metalaxyl | 64+8 | % | Fungicide | SunAgro LifeScience Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| G98 | Relax | mancozeb + metalaxyl | 64+8 | % | Fungicide | Chemical Industries (Colombo) Limited |
| E42 | Rid-All | mancozeb + metalaxyl | 64+8 | % | Fungicide | Oasis Marketing Company (Pvt.) Limited |
| 00B5725 | Ridoaxyl | mancozeb + metalaxyl | 64+8 | % | Fungicide | Harrisons Chemical (Pvt.) Limited |
| FOB57000 | Ridoaxyl | mancozeb + metalaxyl | 64+8 | % | Fungicide | Harrisons Chemical (Pvt.) Limited |
| F015100 | Ridomil MZ 72 WP | mancozeb + metalaxyl | 64+8 | % | Fungicide | Lankem Ceylon Limited |
| F96 | Sunlax | mancozeb + metalaxyl | 64 + 8 | % | Fungicide | Opex Holding (Pvt.) Limited |
| C75 | Unilax | mancozeb + metalaxyl | 64+8 | % | Fungicide | DTW International (Pvt.) Limited |
| 850 | Maneb 80 WP | maneb | 80 | % | Fungicide | Nukemi NN (Ceylon) Limited |
| G66 | Maneram | maneb | 80 | % | Fungicide | Mackwoods Limited |
| 598 | Polyram M | maneb | 80 | % | Fungicide | BASF Finlay (Pvt.) Limited |
| 00B9620 | Saneb WP 80% | maneb | 80 | % | Fungicide | Agro Technica Limited |
| D47 | Paribadra | Margosa Seed Powder | 35 | g/1 | Insecticide | Ratna Laboratory |
| 873 | Agrocare MCPA 40% | MCPA | 400 | g/1 | Weedicide | Agro Technica Limited |
| 87307 | Agrocare MCPA 40% | MCPA | 400 | g/1 | Weedicide | Agro Technica Limited |
| 866 | Agrocare MCPA 60% | MCPA | 600 | g/1 | Weedicide | Agro Technica Limited |
| A76 | Agroxone | MCPA | 400 | g/1 | Weedicide | Chemical Industries (Colombo) Limited |
| G91 | Agroxone | MCPA | 400 | g/1 | Weedicide | CIC Crop Guard (Pvt.) Limited |
| 47413 | Baurmat 60 | MCPA | 600 | g/1 | Weedicide | A. Baur & Company Limited |
| A16 | Fezone 4K | MCPA | 400 | g/l | Weedicide | Zagro Singapore (Pvt.) Limited |
| 589 | Finchem M 40 | MCPA | 400 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 258908 | Finchem M 40 | MCPA | 400 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 590 | Finchem M 60 | MCPA | 600 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 159006 | Finchem M 60 | MCPA | 600 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 259008 | Finchem M 60 | MCPA | 600 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 6 | Hedonal M 40 | MCPA | 400 | g/l | Weedicide | Hayleys Agro Products Limited |
| 100600 | Hedonal M 40 | MCPA | 400 | g/l | Weedicide | Hayleys Agro Products Limited |
| F000608 | Hedonal M 40 | MCPA | 400 | g/l | Weedicide | Hayleys Agro Products Limited |
| 7 | Hedonal M 60 | MCPA | 600 | g/l | Weedicide | Hayleys Agro Products Limited |
| 33713 | Herbinol-2 | MCPA | 400 | g/l | Weedicide | A. Baur & Company Limited |
| 01E3320 | Herbox 60 | MCPA | 600 | g/l | Weedicide | Novela (Pvt.) Limited |
| E33 | Herbox 60 | MCPA | 600 | g/l | Weedicide | Novela (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| E58 | Herbox M-Plus | MCPA | 400 | g/l | Weedicide | Novela (Pvt.) Limited |
| F005800 | Lankem M-50 | MCPA | 400 | g/l | Weedicide | Lankem Ceylon Limited |
| F105800 | Lankem M-50 | MCPA | 400 | g/l | Weedicide | Lankem Ceylon Limited |
| F205800 | Lankem M-50 | MCPA | 400 | g/l | Weedicide | Lankem Ceylon Limited |
| 64708 | Lankem MCPA 60 | MCPA | 600 | g/l | Weedicide | Lankem Ceylon Limited |
| 305800 | M50 | MCPA | 400 | g/l | Weedicide | Lankem Ceylon Limited |
| 249 | M60 | MCPA | 600 | g/l | Weedicide | Mackwoods Limited |
| 24902 | M60 | MCPA | 600 | g/l | Weedicide | Mackwoods Limited |
| 24907 | M60 | MCPA | 600 | g/l | Weedicide | Mackwoods Limited |
| 24908 | M60 | MCPA | 600 | g/l | Weedicide | Mackwoods Limited |
| F064700 | Magic 60 | MCPA | 600 | g/l | Weedicide | Lankem Ceylon Limited |
| F064708 | Magic 60 | MCPA | 600 | g/l | Weedicide | Lankem Ceylon Limited |
| 664 | MCPA | MCPA | 600 | g/l | Weedicide | Nukemi NN (Ceylon) Limited |
| 665 | MCPA | MCPA | 400 | g/l | Weedicide | Nukemi NN (Ceylon) Limited |
| 61208 | MCPA 60 | MCPA | 600 | g/l | Weedicide | Chemical Industries (Colombo) Limited |
| G77 | MCPA 60 | MCPA | 600 | g/l | Weedicide | CIC Crop Guard (Pvt.) Limited |
| F069400 | MCPA 60% | MCPA | 600 | g/l | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |
| 225 | Morice 40 | MCPA | 400 | g/l | Weedicide | JL. Morison Son & Jones (Ceylon) Limited |
| 248 | M-Power | MCPA | 400 | g/l | Weedicide | Mackwoods Limited |
| D99 | M-Super | MCPA | 400 | g/l | Weedicide | Sabaragamuwa Fertilizers (Pvt.) Limited |
| G38 | Sun M-40 | MCPA | 400 | g/l | Weedicide | SunAgro LifeScience Limited |
| G41 | Sun M-60 | MCPA | 600 | g/l | Weedicide | SunAgro LifeScience Limited |
| 150 | Super 40 | MCPA | 400 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 15041 | Super 40 | MCPA | 400 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 115000 | Super 40 | MCPA | 400 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 204 | Super 60 | MCPA | 600 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 120400 | Super 60 | MCPA | 600 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| E30 | Unipower M-40 | MCPA | 400 | g/l | Weedicide | Unipower (Pvt.) Limited |
| 481 | Bi-Hedonal SL 70% | MCPA + 2,4-D | 600+100 | g/l | Weedicide | Hayleys Agro Products Limited |
| D14 | Cascade Condor Super Snail Bait | metaldehyde | 3 | % | Molluscicide | Cascade Lanka Insecticide Manufacturers |
| C34 | Meta Ready-for-Use | metaldehyde | 6.7 | % | Molluscicide | A. Baur & Company Limited |
| E54 | Snail Bait | metaldehyde | 4 | % | Molluscicide | Agro Technica Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 987 | Snail-X | metaldehyde | 4 | % | Molluscicide | Agro Chem Services (Pvt.) Limited |
| D34 | Metham | metam | 423 | g/1 | Fumigant | Hayleys Agro Products Limited |
| F088900 | Lannate 40% SP | methomyl | 40 | % | Insecticide | Lankem Ceylon Limited |
| G20 | Runner SC 240 | methoxyfenozide | 240 | g/1 | Insecticide | Hayleys Agro Products Limited |
| 15 | SencorWP70% | metribuzin | 70 | % | Weedicide | Bayer Thai Company Limited |
| E81 | SencorWP70% | metribuzin | 70 | % | Weedicide | Hayleys Agro Products Limited |
| E37 | RimonlOEC | novaluron | 100 | g/1 | Insect Growth Regul | A. Baur & Company Limited |
| F60 | Ronstar PL | oxadiazon + propanil | 80 + 24C | > g/1 | Weedicide | Bayer Thai Company Limited |
| F72 | Ronstar PL | oxadiazon + propanil | 80+230 | g/1 | Weedicide | Hayleys Agro Products Limited |
| 29 | Metasystox R 250 EC | oxydemeton-methyl | 250 | g/1 | Insecticide | Bayer Thai Company Limited |
| E63 | Metasystox R 250 EC | oxydemeton-methyl | 250 | g/1 | Insecticide | Hayleys Agro Products Limited |
| C29 | Control 240 | oxyfluorfen | 240 | g/1 | Weedicide | Mackwoods Limited |
| B05 | Galigan | oxyfluorfen | 240 | g/1 | Weedicide | A. Baur & Company Limited |
| 131 | Goal 2E | oxyfluorfen | 240 | g/1 | Weedicide | Chemical Industries (Colombo) Limited |
| D21 | Goal 2XL | oxyfluorfen | 240 | g/1 | Insecticide | Chemical Industries (Colombo) Limited |
| H26 | Goal 2XL | oxyfluorfen | 240 | g/1 | Weedicide | CIC Crop Guard (Pvt.) Limited |
| C99 | Baur's Paraquat | paraquat (ion) | 200 | g/1 | Weedicide | A. Baur & Company Limited |
| 136 | Gramoxone | paraquat (ion) | 200 | g/1 | Weedicide | Chemical Industries (Colombo) Limited |
| 113600 | Gramoxone | paraquat (ion) | 200 | g/1 | Weedicide | Chemical Industries (Colombo) Limited |
| G71 | Gramoxone Inteon | paraquat (ion) | 200 | g/1 | Weedicide | Chemical Industries (Colombo) Limited |
| 1E+304 | Oneshot | paraquat (ion) | 200 | g/1 | Weedicide | Lankem Ceylon Limited |
| D03 | Oneshot | paraquat (ion) | 200 | g/1 | Weedicide | Lankem Ceylon Limited |
| G89 | Oneshot Plus Inteon | paraquat (ion) | 200 | g/1 | Weedicide | Lankem Ceylon Limited |
| E76 | X-Press | paraquat (ion) | 200 | g/1 | Weedicide | Polychemex (Pvt.) Limited |
| 536 | Monceren WP 25% | pencycuron | 25 | % | Fungicide | Bayer Thai Company Limited |
| F04 | Monceren WP 25% | pencycuron | 25 | % | Fungicide | Hayleys Agro Products Limited |
| D58 | Stomp | pendimethalin | 300 | g/1 | Weedicide | BASF Finlay (Pvt.) Limited |
| B78 | Chase | pendimethalin + | 123+212 | :g/i | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 213 | Cidial | phenthoate | 500 | g/i | Insecticide | J.L. Morison Son & Jones (Ceylon) Limited |
| 21309 | Cidial | phenthoate | 500 | g/i | Insecticide | J.L. Morison Son & Jones (Ceylon) Limited |
| 520 | Elsan 5% Dust | phenthoate | 5 | % | Insecticide | Lankem Ceylon Limited |
| 55 | Elsan 50 | phenthoate | 500 | g/i | Insecticide | Lankem Ceylon Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| A98 | Kemidol 500 | phenthoate | 500 | g/i | Insecticide | A. Baur & Company Limited |
| G53 | Kemsan 50 | phenthoate | 500 | g/i | Insecticide | SunAgro LifeScience Limited |
| G54 | Kemsan DP | phenthoate | 5 | % | Insecticide | SunAgro LifeScience Limited |
| 00A3805 | Leader | phenthoate | 500 | g/i | Insecticide | Harrisons Chemical (Pvt.) Limited |
| A38 | Leader | phenthoate | 500 | g/i | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 854 | Mackso | phenthoate | 500 | g/i | Insecticide | Mackwoods Limited |
| 85405 | Mackso | phenthoate | 500 | g/i | Insecticide | Mackwoods Limited |
| 85420 | Mackso | phenthoate | 500 | g/i | Insecticide | Mackwoods Limited |
| 946 | Mackso 5% Dust | phenthoate | 5 | % | Insecticide | Mackwoods Limited |
| 00A5209 | Pensan 50 EC | phenthoate | 500 | g/i | Insecticide | Agro Technica Limited |
| A52 | Pensan 50 EC | phenthoate | 500 | g/i | Insecticide | Agro Technica Limited |
| B99 | Pensan Dust | phenthoate | 5 | % | Insecticide | Agro Technica Limited |
| F71 | Penta | phenthoate | 500 | g/i | Insecticide | Opex Holding (Pvt.) Limited |
| G13 | Penta 5% Dust | phenthoate | 5 | % | Insecticide | Opex Holding (Pvt.) Limited |
| 00B5805 | Phenthoate 50 EC | phenthoate | 500 | g/i | Insecticide | Ceylon Petroleum Corporation (Chemical Division) |
| 997 | Visan 50 EC | phenthoate | 500 | g/l | Insecticide | BASF Finlay (Pvt.) Limited |
| 99705 | Visan 50 EC | phenthoate | 500 | g/l | Insecticide | BASF Finlay (Pvt.) Limited |
| E09 | Visan 50 EC | phenthoate | 500 | g/l | Insecticide | Asiatic Agricultural (Colombo) Office |
| 791 | Safer's Natural Insecticide | potassium salts of fatty acids | 505 | g/l | Insecticide | Agriworld (Pvt.) Limited |
| D17 | Soft 30 EC | pretilachlor | 300 | g/l | Weedicide | Chemical Industries (Colombo) Limited |
| FII | Baurcron | profenofos | 500 | g/l | Insecticide | A. Baur & Company Limited |
| 00A4005 | Calcron 50 EC | profenofos | 500 | g/l | Insecticide | Harrisons Chemical (Pvt.) Limited |
| A40 | Calcron 50 EC | profenofos | 500 | g/l | Insecticide | Harrisons Chemical (Pvt.) Limited |
| G69 | C-Cron | profenofos | 500 | g/l | Insecticide | CIC Crop Guard (Pvt.) Limited |
| G51 | Crown | profenofos | 500 | g/l | Insecticide | M-Chems (Pvt.) Limited |
| E52 | Flint | profenofos | 500 | g/l | Insecticide | Novela (Pvt.) Limited |
| 01E7700 | Gemini | profenofos | 500 | g/l | Insecticide | Mackwoods Limited |
| E77 | Gemini | profenofos | 500 | g/l | Insecticide | Mackwoods Limited |
| F76 | Peron | profenofos | 500 | g/l | Insecticide | Opex Holding (Pvt.) Limited |
| 01G5210 | Polycrone | profenofos | 500 | g/l | Insecticide | SunAgro LifeScience Limited |
| G52 | Polycrone | profenofos | 500 | g/l | Insecticide | SunAgro LifeScience Limited |
| 152 | Selecron 50 EC | profenofos | 500 | g/l | Insecticide | Lankem Ceylon Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| F22 | Supercron | profenofos | 500 | g/l | Insecticide | Agro Technica Limited |
| E10 | Venofos 50 EC | profenofos | 500 | g/l | Insecticide | Asiatic Agricultural (Colombo) Office |
| 863 | Previcur 607 SL | propamocarb | 607 | g/l | Fungicide | Bayer Thai Company Limited |
| E73 | Previcur 607 SL | propamocarb | 607 | g/l | Fungicide | Hayleys Agro Products Limited |
| E16 | 3,4-DPA | propanil | 360 | g/l | Weedicide | Sabaragamuwa Fertilizers (Pvt.) Limited |
| 9723 | 3,4-DPA 36% | propanil | 360 | g/l | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |
| 109707 | 3,4-DPA 36% | propanr | 360 | g/l | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |
| G62 | AgStar 3,4-DPA 36% | propanr | 360 | g/l | Weedicide | AgStar Chemicals (Pvt.) Limited |
| 33805 | Baur's 3,4-DPA | propanr | 360 | g/l | Weedicide | A. Baur & Company Limited |
| 33807 | Baur's 3,4-DPA | propanr | 360 | g/l | Weedicide | A. Baur & Company Limited |
| 33808 | Baur's 3,4-DPA | propanr | 360 | g/l | Weedicide | A. Baur & Company Limited |
| 33823 | Baur's 3,4-DPA | propanr | 360 | g/l | Weedicide | A. Baur & Company Limited |
| 33832 | Baur's 3,4-DPA | propanr | 360 | g/l | Weedicide | A. Baur & Company Limited |
| 133805 | Baur's 3,4-DPA | propanr | 360 | g/l | Weedicide | A. Baur & Company Limited |
| 109705 | Ceypetco 3,4-DPA | propanr | 360 | g/l | Fungicide | Ceylon Petroleum Corporation (Chemical Division) |
| F109707 | Ceypetco 3,4-DPA | propanr | 360 | g/l | Weedicide | Ceylon Petroleum Corporation (Chemical Division) |
| E45 | Down | propanr | 360 | g/l | Weedicide | Sabaragamuwa Fertilizers (Pvt.) Limited |
| G45 | Garentee 36 | propanr | 360 | g/l | Weedicide | SunAgro LifeScience Limited |
| 15428 | Harcros Supereon | propanr | 360 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 115408 | Harcros Supereon | propanr | 360 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| A73 | Lexusnil | propanr | 360 | g/l | Weedicide | Amcrop (Pvt.) Limited |
| 00B6105 | Marathon 36 | propanr | 360 | g/l | Weedicide | Unipower (Pvt.) Limited |
| 00B6107 | Marathon 36 | propanr | 360 | g/l | Weedicide | Unipower (Pvt.) Limited |
| B61 | Marathon 36 | propanr | 360 | g/l | Weedicide | Unipower (Pvt.) Limited |
| 28705 | Marunil 36 | propanr | 360 | g/l | Weedicide | Mackwoods Limited |
| 28707 | Marunil 36 | propanr | 360 | g/l | Weedicide | Mackwoods Limited |
| 28723 | Marunil 36 | propanr | 360 | g/l | Weedicide | Mackwoods Limited |
| 128700 | Marunil 36 | propanr | 360 | g/l | Weedicide | Mackwoods Limited |
| 128705 | Marunil 36 | propanr | 360 | g/l | Weedicide | Mackwoods Limited |
| 128708 | Marunil 36 | propanr | 360 | g/l | Weedicide | Mackwoods Limited |
| 21428 | Morison's Propanil | propanr | 360 | g/l | Weedicide | J.L. Morison Son & Jones (Ceylon) Limited |
| G43 | Neat | propanr | 360 | g/l | Weedicide | M-Chems (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| E35 | O-Nil | propanr | 360 | g/l | Weedicide | Oasis Marketing Company (Pvt.) Limited |
| E28 | Panil 36 EC | propanr | 360 | g/l | Weedicide | Zagro Singapore (Pvt.) Limited |
| 108100 | Propanil | propanr | 360 | g/l | Weedicide | Nukemi NN (Ceylon) Limited |
| 316700 | Propanil | propanr | 360 | g/l | Weedicide | Zagro Singapore (Pvt.) Limited |
| 01D9000 | Propanil | propanr | 360 | g/l | Weedicide | Asiatic Agricultural (Colombo) Office |
| D90 | Propanil | propanr | 360 | g/l | Weedicide | Asiatic Agricultural (Colombo) Office |
| 875 | Propanil EC 36% | propanr | 360 | g/l | Weedicide | Agro Technica Limited |
| C59 | Score | propanr | 360 | g/l | Weedicide | Teck Agro Fertilizer (Pvt.) Limited |
| B95 | Stam F 34 | propanr | 360 | g/l | Weedicide | Chemical Industries (Colombo) Limited |
| H57 | Stam F 34 | propanr | 360 | g/l | Weedicide | CIC Crop Guard (Pvt.) Limited |
| 115405 | Supereon | propanr | 360 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 415409 | Supereon | propanr | 360 | g/l | Weedicide | Harrisons Chemical (Pvt.) Limited |
| 894 | Surcopur 36% | propanr | 360 | g/l | Weedicide | Hayleys Agro Products Limited |
| 100300 | Surcopur 36% | propanr | 360 | g/l | Weedicide | Hayleys Agro Products Limited |
| 60505 | Sure | propanr | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 60523 | Sure | propanr | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 160505 | Sure | propanr | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 160508 | Sure | propanr | 360 | g/l | Weedicide | BASF Finlay (Pvt.) Limited |
| 6205 | Top | propanr | 360 | g/l | Weedicide | Lankem Ceylon Limited |
| 106205 | Top | propanr | 360 | g/l | Weedicide | Lankem Ceylon Limited |
| 106241 | Top | propanil | 360 | g/1 | Weedicide | Lankem Ceylon Limited |
| G02 | Vatt 36% | propanil | 360 | g/1 | Weedicide | Opex Holding (Pvt.) Limited |
| 01E2505 | Winner | propanil | 360 | g/1 | Weedicide | Novela (Pvt.) Limited |
| E25 | Winner | propanil | 360 | g/1 | Weedicide | Novela (Pvt.) Limited |
| C61 | Bumper | propiconazole | 250 | g/1 | Fungicide | Mackwoods Limited |
| 929 | Tilt | propiconazole | 250 | g/1 | Fungicide | Lankem Ceylon Limited |
| 20 | Antracol 70% WP | propineb | 70 | % | Fungicide | Bayer Thai Company Limited |
| E80 | Antracol 70% WP | propineb | 70 | % | Fungicide | Hayleys Agro Products Limited |
| 399 | FruvitWP66% | propineb + oxadixyl | 56+10 | % | Fungicide | Hayleys Agro Products Limited |
| 4 | Undenl%Dust | propoxur | 1 | % | Insecticide | Hayleys Agro Products Limited |
| 12 | Unden EC 20% | propoxur | 200 | g/1 | Insecticide | Bayer Thai Company Limited |
| F49 | Unden EC 20% | propoxur | 200 | g/1 | Insecticide | Hayleys Agro Products Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 13 | Tokuthion EC 50% | prothiophos | 500 | g/1 | Insecticide | Arysta LifeScience Corporation |
| E67 | Tokuthion EC 50% | prothiophos | 500 | g/1 | Insecticide | Hayleys Agro Products Limited |
| F31 | Pyanchor | pyribenzoxim | 50 | g/1 | Weedicide | M-Chems (Pvt.) Limited |
| 936 | Bayrusil EC 25% | quinalphos | 250 | g/1 | Insecticide | Bayer Thai Company Limited |
| E62 | Bayrusil EC 25% | quinalphos | 250 | g/1 | Insecticide | Hayleys Agro Products Limited |
| 176 | Ekalux25EC | quinalphos | 250 | g/1 | Insecticide | A. Baur & Company Limited |
| E94 | Flytox | quinalphos | 250 | g/1 | Insecticide | Oasis Marketing Company (Pvt.) Limited |
| E12 | Hero | quinalphos | 250 | g/1 | Insecticide | Agro Technica Limited |
| F74 | Keufo | quinalphos | 250 | g/1 | Insecticide | Opex Holding (Pvt.) Limited |
| D18 | Kuinal 25 EC | quinalphos | 250 | g/1 | Insecticide | Asiatic Agricultural (Colombo) Office |
| D75 | Quick | quinalphos | 250 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| 95805 | Quintox | quinalphos | 250 | g/1 | Insecticide | Mackwoods Limited |
| 95807 | Quintox | quinalphos | 250 | g/1 | Insecticide | Mackwoods Limited |
| 695 | Facet SC | quinclorac | 250 | g/1 | Weedicide | BASF Finlay (Pvt.) Limited |
| 813 | NabuS | sethoxydim | 125 | g/1 | Weedicide | J.L. Morison Son & Jones (Ceylon) Limited |
| H03 | Success | spinosad | 25 | g/1 | Insecticide | Hayleys Agro Products Limited |
| G78 | CG Sulphur | sulphur | 80 | % | Fungicide | CIC Crop Guard (Pvt.) Limited |
| D04 | Exsul | sulphur | 80 | % | Fungicide/Miticide | Unipower (Pvt.) Limited |
| 102300 | Haymite WG 80% | sulphur | 80 | % | Fungicide/Miticide | Hayleys Agro Products Limited |
| F102300 | Haymite WG 80% | sulphur | 80 | % | Fungicide | Hayleys Agro Products Limited |
| 594 | Kumulus DF | sulphur | 80 | % | Fungicide/Miticide | BASF Finlay (Pvt.) Limited |
| 703 | Macksul Microthiol Special | sulphur | 80 | % | Fungicide/Mticide | Mackwoods Limited |
| 170307 | Macksul Microthiol Special | sulphur | 80 | % | Fungicide/Mticide | Mackwoods Limited |
| 121907 | Morisal | sulphur | 80 | % | Fungicide | J.L. Morison Son & Jones (Ceylon) Limited |
| H08 | Sulfex | sulphur | 80 | % | Fungicide | Oasis Marketing Company (Pvt.) Limited |
| F010301 | Sulphur 80 WP | sulphur | 80 | % | Fungicide/Mticide | Ceylon Petroleum Corporation (Chemical Division) |
| 985 | Sulphur 80% | sulphur | 80 | % | Fungicide/Mticide | Nukemi NN (Ceylon) Limited |
| F97 | Sulphur 80% | sulphur | 80 | % | Fungicide/Mticide | Zagro Singapore (Pvt.) Limited |
| 874 | Suvisal DF 80% | sulphur | 80 | % | Fungicide/Mticide | Agro Technica Limited |
| 187400 | Suvisul | sulphur | 80 | % | Fungicide | Agro Technica Limited |
| H42 | Thiolux | sulphur | 80 | % | Fungicide | Chemical Industries (Colombo) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 886 | Thiosan | sulphur | 80 | % | Fungicide/Mticide | Harrisons Chemical (Pvt.) Limited |
| 256 | Thiovit Jet | sulphur | 80 | % | Fungicide/Mticide | A. Baur & Company Limited |
| 937 | Folicur250EW | tebuconazole | 250 | g/1 | Fungicide | Bayer Thai Company Limited |
| E65 | Folicur250EW | tebuconazole | 250 | g/1 | Fungicide | Hayleys Agro Products Limited |
| D10 | Orius 25 EW | tebuconazole | 250 | g/1 | Fungicide | A. Baur & Company Limited |
| 903 | Mimic 20 F | tebufenozide | 200 | g/1 | Insect Growth Regul | Hayleys Agro Products Limited |
| H37 | Tetramethrin | tetramethrin | 92 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| E50 | Calypso SC 240 | thiacloprid | 240 | g/1 | Insecticide | Bayer Thai Company Limited |
| G10 | Calypso SC 240 | thiacloprid | 240 | g/1 | Insecticide | Hayleys Agro Products Limited |
| F15 | Actara 25 WG | thiamethoxam | 25 | % | Insecticide | Chemical Industries (Colombo) Limited |
| F29 | Cruiser 70 WS | thiamethoxam | 70 | % | Insecticide | Chemical Industries (Colombo) Limited |
| F054100 | Satunil 60 | thiobencarb + propanil | 400+20C | g/1 | Weedicide | Lankem Ceylon Limited |
| 276 | Larvin 375 F | thiodicarb | 375 | g/1 | Insecticide | Bayer Thai Company Limited |
| A15 | Larvin 375 F | thiodicarb | 375 | g/1 | Insecticide | BASF Finlay (Pvt.) Limited |
| E78 | Larvin 375 F | thiodicarb | 375 | g/1 | Insecticide | Harrisons Chemical (Pvt.) Limited |
| B79 | Thiophen M 70 | thiophanate-methyl | 70 | % | Fungicide | Mackwoods Limited |
| 220 | Topsin M 70 | thiophanate-methyl | 70 | % | Fungicide | J.L. Morison Son & Jones (Ceylon) Limited |
| 221 | Homai | thiophanate-methyl + thiram | 50+30 | % | Fungicide | J.L. Morison Son & Jones (Ceylon) Limited |
| G24 | Ceypetco Thiram | thiram | 80 | % | Fungicide | Ceylon Petroleum Corporation (Chemical Division) |
| E84 | Finchem Thiram | thiram | 80 | % | Fungicide | BASF Finlay (Pvt.) Limited |
| G22 | Opex Thiram | thiram | 80 | % | Fungicide | Opex Holding (Pvt.) Limited |
| 22 | Pomarsol Forte WP 80% | thiram | 80 | % | Fungicide | Bayer Thai Company Limited |
| E66 | Pomarsol Forte WP 80% | thiram | 80 | % | Fungicide | Hayleys Agro Products Limited |
| C88 | Scope | thiram | 80 | % | Fungicide | Mackwoods Limited |
| F83 | Scope | thiram | 80 | % | Fungicide | Asiatic Agricultural (Colombo) Office |
| 284 | Sangral | thiram + 1-naphthyl acetic acid | 0.2+0.3 | % | Others | Unikem |
| 189 | RootoneF | thiram+1-naphthyl acetic acid+ 4-indol-3-ylbutyric acid | 4+0.116+ | % | Others | Nukemi NN (Ceylon) Limited |
| 1 | Dipterex LC 50% | trichlorfon | 500 | g/1 | Insecticide | Bayer Thai Company Limited |
| E60 | Dipterex LC 50% | trichlorfon | 500 | g/1 | Insecticide | Hayleys Agro Products Limited |
| G90 | Guru | tricyclazole | 75 | % | Fungicide | Mackwoods Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| A89 | Maduthala Ayurveda Manjusa Dupa | Anacardium occidentale + Azadirachta indica + Cymbopogon nardus + Ocimum sanctum + Santalum album + Cinnamomum zeylanicum | 20 | % | Mosquito Repellent | Maduthala (Pvt.) Limited |
| F0A9900 | Snip RB 1 | azamethiphos | 1 | % | Insecticide | Harrisons Chemical (Pvt.) Limited |
| F011800 | Klerat Pellets | brodifacoum | 0.005 | % | Rodenticide | Chemical Industries (Colombo) Limited |
| 117 | Klerat Wax Blocks | brodifacoum | 0.005 | % | Rodenticide | Chemical Industries (Colombo) Limited |
| D02 | Mortein Rat Kill | bromadiolone | 0.005 | % | Rodenticide | Reckitt Benckiser (Lanka) Limited |
| 236 | Racumin Ready Bait | coumatetralyl | 0.037 | % | Rodenticide | Hayleys Consumer Products Limited |
| 231 | Racumin Tracking Powder | coumatetralyl | 0.75 | % | Rodenticide | Hayleys Consumer Products Limited |
| C60 | Golden Hammer | cypermethrin + borax | 1+4 | % | Insecticide | Lawson Pestcontrol Limited |
| D61 | ARS Mite | cypermethrin + dichlorvos | 0.12+0.5 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| E71 | ARS Jet Pro | cypermethrin + imiprothrin | 0.2+0.1 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| 19942 | ARS Mosquito Coil | d-allethrin | 0.2 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| F019900 | ARS Mosquito Coil | d-allethrin | 0.2 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| 228 | Baygon Mosquito Coil | d-allethrin | 0.2 | % | Insecticide | Hayleys Consumer Products Limited |
| 653 | Baygon Mosquito Mat | d-allethrin | 50 | mg/mat | Insecticide | Hayleys Consumer Products Limited |
| 740 | Bigtox | d-allethrin | 0.2 | % | Insecticide | Ismail Company Limited |
| D60 | Good Knight Action | d-allethrin | 0.2 | % | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| FOB0100 | Good Knight Wasi | d-allethrin | 0.2 | % | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| B02 | Jet Mat | d-allethrin | 40 | mg/mat | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| 477200 | Lion | d-allethrin | 0.2 | % | Insecticide | International Cosmetics Limited |
| F377200 | Lion | d-allethrin | 0.2 | % | Insecticide | International Cosmetics Limited |
| B90 | Lion King | d-allethrin | 0.2 | % | Insecticide | International Cosmetics Limited |
| D26 | Lion King | d-allethrin | 0.2 | % | Insecticide | International Cosmetics Limited |
| F08 | Mistox Ten | d-allethrin | 0.2 | % | Insecticide | Lankem Ceylon Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| C67 | Mortein Electric Mosquito Repellent | d-allethrin | 3.6 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 493 | Mortein Mosquito Mats | d-allethrin | 40 | mg/mat | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 149300 | Mortein Mosquito Mats | d-allethrin | 40 | mg/mat | Insecticide | Reckitt Benckiser (Lanka) Limited |
| B59 | Mostly | d-allethrin | 0.2 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| E20 | Mostly DA10 | d-allethrin | 0.2 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| F82 | MoskitXtra Power 10 | d-allethrin | 0.25 | % | Insecticide | Fame International (Pvt.) Limited Fame |
| F81 | Moskit Xtra Power 8 | d-allethrin | 0.25 | % | Insecticide | International (Pvt.) Limited |
| C48 | Pynamin Forte | d-allethrin | 90 | % | Insecticide | International Cosmetics Limited |
| D55 | Super Mostly | d-allethrin | 0.3 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| E21 | Super Mostly DA8 | d-allethrin | 0.3 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| C15 | Vape Mosquito Coil | d-allethrin | 0.2 | % | Insecticide | Delmege Forsyth & Company Limited |
| F36 | ARS Water Based | d-allethrin + d-tetramethrin + permethrin | 0.06+0.06+0.18 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| G01 | ARS Mat | d-allethrin + piperonil butoxide | 48+12 | Mg/Mat | Insecticide | West Coast Lanka (Pvt.) Limited |
| A41 | Red Earth Aqua Fumigator | d-cyphenothrin | 7.2 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| G32 | Ninja Strike | d-cyphenothrin + imiprothrin | 0.15+0.1 | % | Insecticide | Darley Butler & Company Limited |
| B52 | Mistox Super | d-cyphenothrin + tetramethrin + dichlorvos | 0.15+0.1+0.3 | % | Insecticide | Lankem Ceylon Limited |
| D09 | Hitline Chalk | delta methrin | 0.5 | % | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| A49 | ARS Liquid 360 | d-prallethrin | 0.67 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| E06 | ARS Liquid 720 | d-prallethrin | 1.33 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| A25 | Bigtox Jumbo | d-trans allethrin | 0.1 | % | Insecticide | Ismail Company Limited |
| G67 | Dream | d-trans allethrin | 0.1 | % | Mosquito Coil | Golden Key Consumer Products Limited |
| 01D6900 | Esbiothrin | d-trans allethrin | 0.12 | % | Insecticide | E.B.Creasy and Company Limited |
| D69 | Esbiothrin | d-trans allethrin | 0.12 | % | Insecticide | E.B.Creasy and Company Limited |
| F61 | Extra Mostly DT10 | d-trans allethrin | 0.12 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| G57 | Extra Mostly DT12 | d-trans allethrin | 0.12 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| F63 | Extra Mosfly DT8 | d-trans allethrin | 0.12 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| D01 | Good Knight Mega | d-trans allethrin | 0.1 | % | Insecticide | J.L. Morison Son & Jones (Ceylon) Limited |
| C71 | Jet Jumbo | d-trans allethrin | 0.1 | % | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| H04 | Lion | d-trans allethrin | 0.12 | % | Insecticide | International Cosmetics Limited |
| D89 | Mistox | d-trans allethrin | 0.1 | % | Insecticide | Lankem Ceylon Limited |
| D88 | Mistox Jumbo | d-trans allethrin | 0.1 | % | Insecticide | Lankem Ceylon Limited |
| 490 | Mortein Coils | d-trans allethrin | 0.1 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 249000 | Mortein Coils | d-trans allethrin | 0.1 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 349000 | Mortein Coils | d-trans allethrin | 0.1 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 449000 | Mortein Coils | d-trans allethrin | 0.1 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 549000 | Mortein Coils | d-trans allethrin | 0.1 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 649000 | Mortein Coils | d-trans allethrin | 0.1 | % | Insect Repellent | Reckitt Benckiser (Lanka) Limited |
| 749000 | Mortein Coils | d-trans allethrin | 0.1 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 01D6600 | Mortein King Xtra Power 12 | d-trans allethrin | 0.12 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 02D6600 | Mortein King Xtra Power 12 | d-trans allethrin | 0.12 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| D66 | Mortein King Xtra Power 12 | d-trans allethrin | 0.12 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| G14 | Mortein Power Booster 12 | d-trans allethrin | 0.13 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| H43 | Mortein Power Green 10 Hrs | d-trans allethrin | 0.12 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 03B5600 | Mortein Xtra Power 10 | d-trans allethrin | 0.12 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 04B5600 | Mortein Xtra Power 10 | d-trans allethrin | 0.12 | % | Insect Repellent | Reckitt Benckiser (Lanka) Limited |
| B56 | Mortein Xtra Power 10 | d-trans allethrin | 0.12 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| B89 | Mortien Lo-Smoke | d-trans allethrin | 0.1 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| F62 | Mosfly DT10 | d-trans allethrin | 0.1 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| G58 | Mosfly DT12 | d-trans allethrin | 0.1 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| F65 | Mosfly DT8 | d-trans allethrin | 0.1 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| 00A6439 | Ninja | d-trans allethrin | 0.1 | % | Insecticide | Darley Butler & Company Limited |
| 01A6439 | Ninja | d-trans allethrin | 0.1 | % | Insecticide | Darley Butler & Company Limited |
| A64 | Ninja | d-trans allethrin | 0.1 | % | Insecticide | Darley Butler & Company Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| F45 | Ninja 12 Hour Max | d-trans allethrin | 0.12 | % | Insecticide | Darley Butler & Company Limited |
| F99 | Ninja Extra Power | d-trans allethrin | 0.12 | % | Insecticide | Darley Butler & Company Limited |
| F56 | Ninja Max | d-trans allethrin | 0.12 | % | Insecticide | E.B.Creasy and Company Limited |
| F17 | Raja Veeraya | d-trans allethrin | 0.12 | % | Insecticide | Precious Industrial (Pvt.) Limited |
| F66 | Super Mosfly DT10 | d-trans allethrin | 0.15 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| F64 | Super Mosfly DT8 | d-trans allethrin | 0.15 | % | Insecticide | Mos Lanka Manufacturing (Pvt.) Limited |
| F07 | Storm | flocoumafen | 0.005 | % | Rodenticide | BASF Finlay (Pvt.) Limited |
| F42 | Storm | flocoumafen | 0.005 | % | Rodenticide | Crystal Green (Pvt.) Limited |
| C89 | ARS Ant Killer | hydra me thylnon | 0.9 | % | Insecticide | West Coast Lanka (Pvt.) Limited |
| F41 | Seige | hydra me thylnon | 2 | % | Insecticide | Crystal Green (Pvt.) Limited |
| C64 | Mortien Fast Kill | imiprothrin + cyphenothrin | 0.07+l | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| H07 | Ninja Extra Power 10 | metofluthrin | 0.005 | % | Insecticide | Darley Butler & Company Limited |
| G64 | Ninja Extra Power 12 | metofluthrin | 0.005 | % | Insecticide | Darley Butler & Company Limited |
| F58 | Odomos | N,N-diethyl benzamide | 12 | % | Repellent | Millers Limited |
| 918 | Autan Lotion | N, N-diethyl-m-toluamide | 12.5 | % | Mosquito Re pellent | Hayleys Consumer Products Limited |
| C22 | DEET | N, N-diethyl-m-toluamide | 14.6 | % | Mosquito Re pellent | Nukemi NN (Ceylon) Limited |
| D23 | Good Knight Lotion | N, N-diethyl-m-toluamide | 15 | % | Mosquito Re pellent | Godrej Sara Lee Lanka (Pvt.) Limited |
| F0A6100 | Mospel | N, N-diethyl-m-toluamide | 300 | g/l | Repellent | Lanka Medical (Imports) Limited |
| F01 | Soffell | N, N-diethyl-m-toluamide | 13 | % | Insect Repellent | Rattan Merchant |
| D20 | Protech | N,N-diethyl-m-toluamide + dimethyl phthalate | 12+7 | % | Mosquito Repellent | Mackwoods Limited |
| D51 | Mosguard | N,N-diethyl-m-toluamide + dimethyl phthalate + ethyl hexanediol | 35.5+43.5+21 | g/l | Mosquito Repellent | Hemas Manufacturing (Pvt.) Limited |
| C83 | Olyset Net | permethrin | 2 | % | Insecticide | Sumitomo Corporation |
| G07 | Mortien Flying Insect Killer | permethrin + imiprothrin | 0.075 + 0.04 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| 232 | Baythion Dust | phoxim | 3 | % | Insecticide | Hayleys Consumer Products Limited |
| E36 | Good Knight Fighter | prallethrin | 0.05 | % | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| E46 | Good Knight Jumbo | prallethrin | 0.05 | % | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| D22 | Good Knight Liquidator Refill | prallethrin | 1.26 | % | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| E53 | Good Knight Super | prallethrin | 0.05 | % | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| C33 | Good Knight Super Mat | prallethrin | 12 | mg/mat | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| C98 | Good Knight Super Mat | prallethrin | 12 | mg/mat | Insecticide | J.L. Morison Son & Jones (Ceylon) Limited |
| H20 | Mortein deep Reach Action 30 Nights | prallethrin | 1.24 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| G37 | Mortein deep Reach Action 45 Nights | prallethrin | 1.6 | % | Repellent | Reckitt Benckiser (Lanka) Limited |
| G23 | Mortein Deep Reach Action 60 Nights | prallethrin | 1.24 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| A33 | Mortein King Mat | prallethrin | 10 | mg/mat | Insecticide | Reckitt Benckiser (Lanka) Limited |
| H14 | Ninja Veporizer | prallethrin | 1 | % | Insecticide | E.B.Creasy and Company Limited |
| C73 | Punchi Veeraya | prallethrin | 0.05 | % | Insecticide | Precious Industrial (Pvt.) Limited |
| D62 | Sathosa | prallethrin | 0.05 | % | Insecticide | Precious Industrial (Pvt.) Limited |
| D63 | Triple Sathosa | prallethrin | 0.05 | % | Insecticide | Precious Industrial (Pvt.) Limited |
| D40 | Triple Veeraya | prallethrin | 0.05 | % | Insecticide | Precious Industrial (Pvt.) Limited |
| B93 | Veeraya | prallethrin | 0.05 | % | Insecticide | Precious Industrial (Pvt.) Limited |
| 227 | Baygon Cockroach Bait | propoxur | 2 | % | Insecticide | Hayleys Consumer Products Limited |
| 229 | Baygon EC 20 | propoxur | 200 | g/i | Insecticide | Hayleys Agro Products Limited |
| 233 | Baygon Fly Bait | propoxur | 1 | % | Insecticide | Hayleys Consumer Products Limited |
| 551 | Bolfo Powder | propoxur | 1 | % | Acaricide | Hayleys Agro Products Limited |
| 235 | Baygon Oil Spray | propoxur + dichlorvos | 1+0.5 | % | Insecticide | Hayleys Consumer Products Limited |
| A71 | Baygon Aerosol Spray | propoxur + transfluthrin | 1+0.04 | % | Insecticide | Hayleys Consumer Products Limited |
| B44 | Patriot | pyrethrins + piperonyl butoxide | 0.2+1 | % | Insecticide | Unical (Ceylon) Limited |
| 957 | Mortein Multi Insect Killer | tetramethrin + deltamethrin | 2.38+0.15 | % | Insecticide | Reckitt Benckiser (Lanka) Limited |
| D24 | Coil | transfluthrin | 0.03 | % | Insecticide | Hayleys Consumer Products Limited |
| D25 | Baygon Ten | transfluthrin | 0.03 | % | Insecticide | Hayleys Consumer Products Limited |
| C09 | ARS Rat Killer | warfarin | 0.05 | % | Rodenticide | West Coast Lanka (Pvt.) Limited |
| F0C0900 | ARS Rat Killer | warfarin | 0 | | Rodenticide | West Coast Lanka (Pvt.) Limited |
| D48 | No Rat | zinc phosphide | 32 | % | Rodenticide | Lanka Chemical Industries |
| FOD4800 | No rat | zinc phosphide | 32 | % | Rodenticide | Lanka Chemical Industries |
| F099125 | Run Rat | zinc phosphide | 32 | % | Rodenticide | Abdulla Industries & Paper Bags Manufacture |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 521 | Fentrol | difenacoum | 0.005 | % | | Finlay Rentokil (Ceylon) Limited |
| A58 | Agenda | fipronil | 25 | g/i | | Nukemi NN (Ceylon) Limited |
| B17 | Baktop MC | fenobucarb | 150 | g/i | | Sumitomo Corporation |
| B32 | Biflex 10 TC | bifenthrin | 100 | g/i | | Lankem Ceylon Limited |
| B45 | Kordon 250 TC | deltamethrin | 250 | g/i | | Nukemi NN (Ceylon) Limited |
| C51 | X-Termite | fenobucarb | 150 | g/i | | Mackwoods Limited |
| G03 | Baktop MC | fenobucarb | 150 | g/i | | Nukemi NN (Ceylon) Limited |
| F88 | Microbac Forte | alkylbenzyldimethyldimmonium chloride + dodecylbispropylene triamine | 20+5 | % | Fungicide | Mamro Private Limited |
| F50 | Fendona | alpha-cypermethrin | 15 | g/1 | Insecticide | ChemCey (Pvt.) Limited |
| F90 | Fendona | alpha-cypermethrin | 15 | g/1 | Insecticide | Nukemi NN (Ceylon) Limited |
| D57 | Vectobac 12 AS | Bacillus thuringiensis subspecies israelensis, serotype H-14 | 1.2 | % | Insecticide | Nukemi NN (Ceylon) Limited |
| D56 | Vectobac G | Bacillus thuringiensis subspecies israelensis, serotype H-14 | 0.2 | % | Insecticide | Nukemi NN (Ceylon) Limited |
| F0D3907 | Solfac WP 10 | beta-cyfluthrin | 10 | % | Insecticide | Anti Malaria Campaign |
| H77 | Bis tar | bifenthrin | 10 | % | Insecticide | Innovative Pesticide Marketing (Pvt.) Limited |
| 583 | Solfac EW 050 | cyfluthrin | 50 | g/1 | Insecticide | Hayleys Consumer Products Limited |
| D39 | Solfac WP 10 | cyfluthrin | 10 | % | Insecticide | Anti Malaria Campaign |
| F0B7500 | Pesguard PS 102 | d-allethrin + d-phenothrin | 50+50 | g/1 | Insecticide | Sumitomo Corporation |
| 794 | Cislin EC | deltamethrin | 25 | g/1 | Insecticide | Nukemi NN (Ceylon) Limited |
| 793 | Cislin WP | deltamethrin | 2.5 | % | Insecticide | Nukemi NN (Ceylon) Limited |
| D49 | Deltamethrin 5% WP | deltamethrin | 5 | % | Insecticide | H & S Group of Companies |
| A14 | K-Othrine 50 WP | deltamethrin | 5 | % | Insecticide | Nukemi NN (Ceylon) Limited |
| D46 | K-Othrine 50 WP | deltamethrin | 5 | % | Insecticide | Anti Malaria Campaign |
| F0A5300 | ResidexD2.5EC | deltamethrin | 25 | g/1 | Insecticide | Unical (Ceylon) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| C55 | ResidexD2.5 WP | deltamethrin | 2.5 | % | Insecticide | Unical (Ceylon) Limited |
| D82 | Smash | deltamethrin | 5 | % | Insecticide | Access International (Pvt.) Limited |
| 796 | Deltacide | deltamethrin + s-bioallethrin + piperonyl butoxide | 5+7.1+89 | g/1 | Insecticide | Nukemi NN (Ceylon) Limited |
| F86 | Bacillo-Floor | didecyldimethyl ammonium chloride | 7 | % | Fungicide | Mamro Private Limited |
| F78 | Sokrena | didecyldimethyl ammonium chloride | 7 | % | Disinfectant | Mamro Private Limited |
| F87 | Korsolex Plus | dodecylbispropylene triamine +didecyldimethyl ammonium chloride | 9.2+13 | % | Fungicide | Mamro Private Limited |
| A94 | PesguardFG 161 | d-tetramethrin+cyphenothein | 40+120 | g/l | Insecticide | Sumitomo Corporation |
| B06 | Pesguard Alpha 5 FL | esfenvalerate | 50 | g/l | Insecticide | Sumitomo Corporation |
| C01 | Vectron | etofenprox | 20 | % | Insecticide | Jegameesans Limited |
| D45 | Vectron | etofenprox | 20 | % | Insecticide | Anti Malaria Campaign |
| F084800 | Sumithion 40 WP | fenitrothion | 40 | % | Insecticide | Sumitomo Corporation |
| H65 | Sumithion 40 WP | fenitrothion | 40 | % | Insecticide | Anti Malaria Campaign |
| G36 | Wazary 10 FL | fenvalerate | 10.5 | % | Termiticide | Sumitomo Corporation |
| E32 | Cidex | glutaraldehyde | 2.45 | % | Disinfectant | State Pharmaceuticals Corporation of Sri Lanka |
| F47 | Cidex | glutaraldehyde | 2.45 | % | Disinfectant | Lanka Medical (Imports) Limited |
| H41 | Cidex | glutaraldehyde | 2.45 | % | Disinfectant | State Pharmaceuticals Corporation of Sri Lanka |
| F79 | Bacillocid Special | glutaraldehyde + l,6-dihydroxy-2,5-dioxahexane + alkylbenzyldimethyl ammonium chloride+ alkyl urea derivatives | 5+11.2+5+3 % | % | Disinfectant | Mamro Private Limited |
| F85 | Korsolex | glutaraldehyde + 1,6-dihydroxy-2,5- dioxahexane + polymethyl urea derivatives | 7+ 8.2+17.6% | | Disinfectant | Mamro Private Limited |
| 865 | Icon | lambda-cyhalothrin | 10 | % | Insecticide | Chemical Industries (Colombo) Limited |
| C62 | Lambda Cyhalothrin | lambda-cyhalothrin | 10 | % | Insecticide | E.B.Creasy and Company Limited |
| G30 | Lambda Cyhalothrin | lambda-cyhalothrin | 10 | % | Insecticide | Harrisons Chemical (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| H53 | Lambda Cyhalothrin | lambda-cyhalothrin | 10 | % | Insecticide | Premium International (Pvt.) Limited |
| 915 | Malathion 50 WDP | malathion | 50 | % | Insecticide | DTW International (Pvt.) Limited |
| G40 | Ridsect | metofluthrin | 93 | % | Insecticide | Godrej Sara Lee Lanka (Pvt.) Limited |
| C13 | Cannon Plus | permethrin | 5 | % | Insecticide | DTW International (Pvt.) Limited |
| 792 | Coopex 25% WP | permethrin | 25 | % | Insecticide | Nukemi NN (Ceylon) Limited |
| 824 | Peripel | permethrin | 100 | g/1 | Insecticide | Nukemi NN (Ceylon) Limited Unical |
| 757 | ResidexP25 WP | permethrin | 25 | % | Insecticide | (Ceylon) Limited |
| D74 | Resigen Fog RTU | permethrin + s-bioallethrin + piperonyl butoxide | 0.28+0.04+0 | % | Insecticide | Nukemi NN (Ceylon) Limited |
| 795 | Pybuthrin 33 | pyrethrins + piperonyl butoxide | 3+30 | g/l | Insecticide | Nukemi NN (Ceylon) Limited |
| B34 | Pycon 33 | pyrethrins + piperonyl butoxide | 3+30 | g/l | Insecticide | Unical (Ceylon) Limited |
| B97 | Sumilarv | pyriproxyfen | 0.5 | % | Insect Growth Regulator | Sumitomo Corporation |
| F89 | Sumilarv | pyriproxyfen | 0.5 | % | Insect Growth Regulator | Nukemi NN (Ceylon) Limited |
| F0B9700 | Sumilarv 0.5G | pyriproxyfen | 0.5 | % | Insecticide | Sumitomo Corporation |
| E40 | Sumilarv 0.5G | pyriproxyfen | 0.5 | % | Insecticide | ChemCey (Pvt.) Limited |
| D84 | TH4+ | quaternary ammoniums + gluteraldehyde | 12.5 + 6.25 | % | Microbiocide | Unical (Ceylon) Limited |
| E22 | Perasafe | sodium perborate | 50 | % | Disinfectant | Mediquipment (Pte.) Limited |
| 963 | Abate 50% EC | temephos | 500 | g/i | Insecticide | BASF Finlay (Pvt.) Limited |
| F0C5700 | Abate 50% EC | temephos | 500 | g/i | Insecticide | Nukemi NN (Ceylon) Limited |
| H19 | Larbait50%EC | temephos | 500 | g/i | Insecticide | Suren Cooke Agencies (Pvt.) Limited |
| D92 | Spar 1% G | temephos | 1 | % | Larvicide | Asiatic Agricultural (Colombo) Office |
| F13 | Spar 1% G | temephos | 1 | % | Larvicide | Harrisons Chemical (Pvt.) Limited |

| Reg No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| 141 | Actellic 50 EC | pirimiphos-methyl | 500 | g/l | Insecticide | Chemical Industries (Colombo) Limited |
| 184 | Baur's Methyl Bromide | methyl bromide | 98 | % | Fumigant | A. Baur & Company Limited |
| 550 | Asuntol 50% | coumaphos | 50 | % | Acaricide | Hayleys Agro Products Limited |
| 623 | Bayticol Pour On | flumethrin | 1 | % | Acaricide | Hayleys Agro Products Limited |
| 659 | Bayticol EC | flumethrin | 6 | % | Acaricide | Hayleys Agro Products Limited |
| B39 | Bayopet Tick Rinse | flumethrin | 2 | % | Acaricide | Hayleys Agro Products Limited |
| C07 | Notix Carbaryl Dust | carbaryl | 5 | % | Acaricide | CIC Vetcare (Pvt.) Limited |
| C16 | Ridd | amitraz | 125 | g/l | Weedicide | CIC Vetcare (Pvt.) Limited |
| C21 | Asuntol | coumaphos | 1 | % | Acaricide | Hayleys Agro Products Limited |
| C27 | Notix Scrub Liquid | carbaryl | 100 | g/l | Acaricide | CIC Vetcare (Pvt.) Limited |
| C78 | Frontline Spray | fipronil | 0.25 | % | Acaricide | CIC Vetcare (Pvt.) Limited |
| D29 | Frontline Spot-On | fipronil | 10 | % | Acaricide | CIC Vetcare (Pvt.) Limited |
| D35 | Notix CP | cypermethrin | 100 | g/l | Acaricide | CIC Vetcare (Pvt.) Limited |
| D67 | Clinafarm Smoke | enilconazole | 16 | % | Fungicide | Department of National Zoological Gardens |
| E18 | Virocid | quaternary ammoniums + gluteraldehyde | 24+10 | % | Disinfectant | Hayleys Agro Products Limited |
| E55 | CID20 | quaternary ammoniums + formaldehyde + gluteraldehyde + isopropanol + glyoxal | 60+84+58+40+20 | g/l | Disinfectant | Hayleys Agro Products Limited |
| E69 | Omnicide Double Concentrate | glutaraldehyde + cocobenzyldimethyl ammonium chloride | 15+10 | % | Disinfectant | Chemanex Limited |
| E87 | CID 2000 | hydrogen peroxide + acetic acid + peracetii acid | 20+10+5 | % | Disinfectant | Hayleys Agro Products Limited |
| F0B6600 | Degesch Phostoxin | aluminium phosphide | 56 | % | Fumigant | Prima Ceylon Limited |
| F0C1000 | Clinafarm Smoke | enilconazole | 16 | % | Fumigant | Ceylon Grain Elevators Limited |
| F95 | No Mos | eucalyptus citriodora oil | 9.9 | % | Mosquito Repellent | Sisara Medicare (Pvt.). Limited |
| G49 | Ultraxide | gluteraldehyde + alkyl benzyl dimethyl ammonium chloride | 15+ 10 | % | Disinfectant | Zagro Singapore (Pvt.) Limited |
| G55 | Ultraxide | gluteraldehyde + alkyl benzyl dimethyl ammonium chloride | 15+ 10 | % | Disinfectant | Brown & Company Limited |
| H52 | Degesch Plates | magnesium phosphide | 56 | % | Fumigant | Prima Ceylon Limited |

| Reg. No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| D95 | Troysan 198 | [[[(2-dihydro-5-methyl-3(2H)-oxazolyl)-1-methylethoxy]methoxy]methoxy]methanol | 50 | % | Microbiocide | Islandwide Marketing Services (Pvt.) Limited |
| G88 | Crinipan AD | 1-(4-chlorophynoxy)-1(1H--imidozol-!-yl)-3,3-dimethyl-2-butanone | 98 | % | Disinfectant | Unilever Sri Lanka Private Limited |
| C46 | Nipacide BIT 20 | 1,2-benzisothiazolin-3-one | 20 | % | Microbiocide | Islandwide Marketing Services (Pvt.) Limited |
| D42 | Nipacide BIT 205 | 1,2-benzisothiazolin-3-one | 20 | % | Microbiocide | Multiform Chemicals Limited |
| 681 | Proxel GXL | 1,2-benzisothiazolin-3-one | 20 | % | Microbiocide | Chemical Industries (Colombo) Limited |
| C47 | Acticide DW | 2-(N-octyl)-4-isothiazolin-3-one | 16 | % | Microbiocide | Asian Paints (Lanka) Limited |
| B87 | Acticide DW | 2-(N-octyl)-4-isothiazolin-3-one | 16 | % | Microbiocide | De Soysa & Company Limited |
| C31 | Acticide DW | 2-(N-octyl)-4-isothiazolin-3-one | 16 | % | Microbiocide | Silicone Coatings (Pvt.) Limited |
| C44 | Letharin MK | 2-(thiocyanomethylthio) benzothiazole | 30 | % | Microbiocide | Multiform Chemicals Limited |
| D37 | Nipacide TC | 2-(thiocyanomethylthio) benzothiazole | 300 | g/l | Microbiocide | S.A. Perera & Company |
| 841 | Tolcide 2230 | 2-(thiocyanomethylthio) benzothiazole | 30 | % | Microbiocide | Ceylon Leather Products Limited |
| B77 | Aquacid DSB | 2,2-dibromo-3-nitrilopropionamide | 30 | % | Microbiocide | Engineering Services Limited |
| F40 | GE BETZ Spectrus NX1100 | 2-bromo-2-nitropropane-1,3-diol + 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 5.3+1.9+0.68 | % | Microbiocide | Puritas Limited |
| F59 | Preventol P 840 N | 2-bromo-2-nitropropane-1,3-diol + 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 6+1.15+0.45 | % | Microbiocide | Union Chemicals Lanka Limited |
| E97 | Spectrus NX1100 Troysan | 2-bromo-2-nitropropane-1,3-diol + 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 5.3 +1.9 + 0.68 | % | Microbiocide | Ceylon Petroleum Corporation (Refinery Division) |
| G15 | Polyphase AF3 | 3-iodo-2-propynylbutylcarbamate | 30 | % | Fungicide | Islandwide Marketing Services (Pvt.) Limited |
| F33 | Polyphase 710S | 3-iodo-2-propynylbutylcarbamate + terbutryn | 14 + 8 | % | Microbiocide | Paints & General Industries Limited |
| C39 | Acticide BX-H | 5-chloro-2-methyl-4-isothiazolin-3-one + 2 methyl-4-isothiazolin-3-one | 1.15 + 0.45 | % | Microbiocide | Asian Paints (Lanka) Limited |

| Reg. No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| B88 | Acticide BX-H | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 1.15+0.45 | % | Microbiocide | De Soysa & Company Limited |
| C95 | Acticide BX-H | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 16 | g/l | Microbiocide | Macksons Paint Industries |
| D11 | Acticide BX-H | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 16 | g/l | Microbiocide | Masons Mixture Limited |
| C24 | Acticide BX-H | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 1.15+0.45 | % | Microbiocide | Paints & General Industries Limited |
| C32 | Acticide BX-H | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 1.15 + 0.45 | % | Microbiocide | Silicone Coatings (Pvt.) Limited |
| D53 | Algaecide LF 2 | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 5.81 | % | Microbiocide | Ansell Lanka (Pvt.) Limited |
| B82 | B82 Biocide LF 2 | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 4.35 + 1.45 | % | Microbiocide | Enviro Water System (Pvt.) Limited |
| F38 | GE BETZ Spectrus NX1106 | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 1.9+0.68 | % | Microbiocide | Puritas Limited |
| C14 | Nalco 7330 | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 1.15+0.45 | % | Microbiocide | Ceylon Petroleum Corporation (Chemical Division |
| F0B2900 | Nalco 7330 | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 1.15+0.45 | % | Microbiocide | Chemical Industries (Colombo) Limited |
| C82 | Nalco 7330 | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 16 | g/l | Microbiocide | Tech Waters (Pvt.) Limited |
| E98 | Spectrus NX1106 | 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 1.9+ 0.68 | % | Microbiocide | Ceylon Petroleum Corporation (Refinery Division) |
| D52 | Tandex CW-N | alkylamines | 10 | % | Microbiocide | Ansell Lanka (Pvt.) Limited |
| F39 | GE BETZ Spectrus | alkylbenzyldimethyl ammonium chloride + dodecylguanidine hydrochloride | 5-10+1-7 | % | Microbiocide | Puritas Limited |
| F097800 | Celbore SP | borax deca + boric acid | 54+36 | % | Microbiocide | Finlay Rentokil (Ceylon) Limited |

| Reg. No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| | | chloro-N-(hydroxymethyl)-acetamide + 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4- | | | | |
| B41 | Parmetol A 23 | isothiazolin-3-one | 5 + 0.38+0.13 | % | Microbiocide | Chemical Industries (Colombo) Limited |
| F098100 | ASCU Paste | copper sulphate + sodium dichromate + arsenic pentoxide | 37.5+50+12.5 | % | Others | C.W. Mackie & Company Limited |
| 170400 | Celcure A | copper sulphate + sodium dichromate + arsenic pentoxide | 31.5+39+24.5 | % | Microbiocide | Finlay Rentokil (Ceylon) Limited |
| F139243 | Celcure A (P) | copper sulphate + sodium dichromate + arsenic pentoxide | 31.5+39.0+24.5 | % | Fungicide | State Timber Corporation |
| F80 | Linotox | didecyldimethyl ammonium chloride | 5 | % | Disinfectant | Mamro Private Limited |
| 787 | Acticide THP | diethylene glycol methylol + chloracetamide | 800+100 | g/l | Microbiocide | Lankem Ceylon Limited |
| C56 | Acticide THP | diethylene glycol methylol + chloracetamide | 800+100 | g/l | Microbiocide | Masons Mixture Limited |
| F34 | Densil P | dithio-2, 2'-bis (benzmethylamide) | 24 | % | Microbiocide | Chemical Industries (Colombo) Limited |
| F075600 | Acticide EP Paste | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20 + 9 + 3 | % | Microbiocide | De Soysa & Company Limited |
| F077100 | Acticide EP Paste | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+10+3 | % | Microbiocide | Lankem Ceylon Limited |
| F078300 | Acticide EP Paste | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+10+3 | % | Microbiocide | Silicone Coatings (Pvt.) Limited |
| C42 | Acticide EPW | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+9+2.5 | g/l | Microbiocide | Asian Paints (Lanka) Limited |
| B86 | Acticide EPW | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+9+2.5 | % | Microbiocide | De Soysa & Company Limited |
| C66 | Acticide EPW | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+9+2.5 | % | Microbiocide | Lankem Ceylon Limited |
| C94 | Acticide EPW | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+9+2.5 | % | Microbiocide | Macksons Paint Industries |
| D43 | Acticide EPW | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+9+2.5 | % | Microbiocide | Masons Mixture Limited |

| Reg. No | Product Name | Common Name | Strength | Unit | Product Description | Company Name |
|---|---|---|---|---|---|---|
| C23 | Acticide EPW | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+9+2.5 | % | Microbiocide | Paints & General Industries Limited |
| C30 | Acticide EPW | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+9+2.5 | % | Microbiocide | Silicone Coatings (Pvt.) Limited |
| E17 | Mergal S89 | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 30+10+2.25 | % | Microbiocide | Islandwide Marketing Services (Pvt.) Limited |
| A03 | Nipacide DFX | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 20+10+3 | % | Microbiocide | Islandwide Marketing Services (Pvt.) Limited |
| D41 | Nipacide DFX 5 | diuron + carbendazim + 2-(N-octyl)-4-isothiazolin-3-one | 25+15+5 | % | Microbiocide | Multiform Chemicals Limited |
| F44 | GE BETZ Spectrus NX1103 | dodecylguanidine hydrochloride + methylenebis(thiocyanate) | 10+3-7 | % | Microbiocide | Puritas Limited |
| C58 | Acticide BX-H | formaldehyde + 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 11.5+11.5+4.5 | g/l | Microbiocide | Lankem Ceylon Limited |
| D93 | Acticide HF | formaldehyde + 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 3+0.8+0.3 | % | Microbiocide | De Soysa & Company Limited |
| F18 | Acticide HF | formaldehyde + 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 3+0.8+0.3 | % | Microbiocide | Macksons Paint Industries |
| F30 | Acticide HF | formaldehyde + 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one | 3+0.8+0.3 | % | Microbiocide | Paints & General Industries Limited |
| D86 | Acticide F1 | formaldehyde + 5-chloro-2-methyl-4-isothiazolin-3-one + 2-methyl-4-isothiazolin-3-one + bronopol | 8+0.7+0.28+0.1 | % | Microbiocide | De Soysa & Company Limited |
| F16 | Nalco 7338 | glutaraldehyde | 70 | % | Microbiocide | Ceylon Petroleum Corporation (Refinery Division) |
| F0B2800 | Nalco 7338 | glutaraldehyde | 70 | % | Microbiocide | Chemical Industries (Colombo) Limited |
| C81 | Nalco 7338 | glutaraldehyde | 400 | g/l | Microbiocide | Tech Waters (Pvt.) Limited |
| D54 | Algaecide S | potassium N-methyldithiocarbamate + disodium cyano-dithioimidocarbonate | 17 | % | Microbiocide | Ansell Lanka (Pvt.) Limited |
| B84 | Biocide S | potassium N-methyldithiocarbamate + disodium cyano-dithioimidocarbonate | 17 | % | Microbiocide | Enviro Water System (Pvt.) Limited |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Stage 1 | Rate of application (Product/ha) Stage 2 | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|
| **01.** | **CROP : RICE** | | | | | | |
| | **Thrips** | | | | | | |
| | *Stenchaetothrips biformis* | **For seed treatment:** | | | | | |
| | | Thiamethoxam 70% WS | .... | | 20 g/500 ml water/ 100 kg seed | | In endemic areas and in late planted crops **it is strongly advisable** to treat the soaked seeds with Imidacloprid or Thiamethoxam powder diluted in water before incubation. Wear gloves during handling chemicals and broadcasting seeds. |
| | | Imidacloprid 70% WS | ..... | | 20 g/500 ml water/ 100 kg seed | | |
| | | **For foliar application:** | | | | | |
| | | Imidacloprid 200 g/l SL | 5 ml | | 160-200 ml | | |
| | | Imidacloprid 70% WG | 1.5 g | | 48-60 g | | |
| | | Imidacloprid 200 g/l OD | 5 ml | | 160-200 ml | | Apply foliar sprays when 50% of leaves/hill show damage symptoms. |
| | | Thiacloprid 240 g/l SC | 3 ml | | 96-120 ml | | |
| | | Fipronil 50 g/l SC | 5 ml | | 160-200 ml | | |
| | | Carbosulfan 200 g/l SC | 20 ml | | 480-600 ml 480- | | |
| | | Dimethoate 400 g/l EC | 15 ml | | 600 ml | | |
| | | Fenthion 500 g/l EC | 15 ml | | 480-600 ml | | |
| | | Diazinon 500 g/l EW/EC | 15 ml | | 480-600 g | | |
| | | Carbaryl 85% WP | 15 g | | 800-1000 ml | | |
| | | Carbaryl 480 g/l SC | 25 ml | | 480-600 ml | | |
| | | Quinalphos 250 g/l EC | 15 ml | | 320-400 ml | | |
| | | Ethiprole 100 g/l SC | 10 ml | | | | |
| **02.** | **Rice gall midge** | Fipronil 0.3% GR | - | | 12 kg | | When damage symptoms appear it is too late for effective control. In endemic areas, as a regular practice treat nurseries 5 days after seeding at 15-20 g/10 $m^2$. |
| | *Orseolia oryzae* | Carbofuran 3% GR | - | | 22 kg | | |
| | | Diazinon 5% GR | - | | 22 kg | | |
| | | Benfuracarb 3% GR | - | | 22 kg | | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage 1 | Rate of application (Product/ha) Stage 2 | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|
| | | | | | | | Broadcast granules on wet mud or into 1 cm of standing water 1-2 weeks after transplanting or 1-3 weeks after broadcasting (ETL-5% Galls) |
| **03.** | **Rice leaf folder** *Cnaphalocrocis medinalis Marasmia* spp. | Fipronil 50 g/l SC | 12 ml | | 384-480 ml | | Apply insecticides when 25% of the leaves show more than 50% leaf damage or 10 live larvae (in rolled leaves) in 10 randomly selected hills. |
| | | Tebufenozide 200 g/l SC | 20 ml | | 640-800 ml | | |
| | | Methoxyfenozide 240 g /l SC | 10 ml | | 320-400 ml | | |
| | | Chlorfluazuron 50 g/l EC | 8 ml | | 256-320 ml | | |
| | | Azadirachtin 10 g/l EC | 50 ml | | 1600-2000 ml | | |
| | | Chromafenozide 50 g/1 SC | 10 ml | | 320-400 ml | | |
| | | Novaluron 100 g/1 EC | 10 ml | | 320-400 ml | | |
| | | Chlorpyriphos 200 g/l EC | 40 ml | | 1280-1600 ml | | |
| | | Chlorpyriphos 400 g/l EC | 20 ml | | 640-800 ml | | |
| | | Fenthion 500 g/l EC | 50 ml | | 1600-2000 ml | | |
| | | Acephate 75% SP | 10 g | | 320-400 g | | |
| **04.** | **Rice stem borer** *Scirpophaga incertulas* | Fipronil 0.3% GR | - | | 12 kg | | Apply insecticides only when damage exceeds 10% dead hearts or 5% white heads. |
| | | Carbofuran 3% GR | - | | 22 kg | | |
| | | Carbosulfan 200 g/l SC | 30 ml | | 960-1200 ml | | |
| | | Diazinon 5% GR | - | | 22 kg | | |
| | | Chlorpyriphos 400 g/l EC | 25 ml | | 800-1000 ml | | |
| | | Chlorpyriphos 200 g/l EC | 50 ml | | 1600-2000 ml | | |
| | | Phenthoate 500 g/l EC | 20 ml | | 640-800 ml | | |
| | | Quinalphos 250 g/l EC | 30 ml | | 960-1200 ml | | |
| **05.** | **Rice brown plant hopper** *Nilaparvata lugens* **White-backed plant hopper** *Sogatella furcifera* | Buprofezin 10% WP | 6 g | | 192-240 g | | Apply insecticides only when number of BPH (nymphs + adults) exceeds 5-8/hill at tillering and 8-10/hill at maturity. Before granules are applied drain water completely and apply to moist soil. When |
| | | Novaluron 100 g/l EC | 10 ml | | 320-400 ml | | |
| | | Imidacloprid 200 g/l SL | 5 ml | | 160-200 ml | | |
| | | Fipronil 50 g/l SC | 15 ml | | 480-600 ml | | |
| | | Acetamiprid 20% SP | 10 g | | 320-400 g | | |
| | | Thiamethoxam 25% WG | 3 g | | 96-120 g | | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage 1 Stage 2 | PHI Days | Remarks |
|---|---|---|---|---|---|---|
| | | Imidacloprid 70% WG | 1.5 g | 50-60 g | | sprays are used apply to base of the plant. |
| | | Imidacloprid 200 g/l OD | 5 ml | 160-200 ml | | |
| | | Ethiprole 100 g/l SC | 15 ml | 480-600 ml | | |
| | | Thiocyclam (hydrogen oxalate) 4% GR | - | 25 kg | | |
| | | Thiocyclam (hydrogen oxalate) 50% SP | 25 g | 800-1000 g | | |
| | | Etofenprox 100 g/l EC | 15 ml | 480-600 ml | | |
| | | Carbosulfan 200 g/l SC | 25 ml | 800-1000 ml | | |
| | | Carbofuran 3% GR | - | 22 kg | | |
| | | Fenobucarb 500 g/l EC | 35 ml | 1120-1400 ml | | |
| 06. | **Paddy bug** *Leptocorisa oratorius* | Thiocyclam (hydrogen oxalate) 50% SP | 25 g | 800-1000 g | | Apply dust early in the morning. Apply pesticides when the bug density is 1 per 10 hills. Follow the same recommendation for **pentatomid** bug. |
| | | Carbosulfan 200 g/l SC | 40 ml | 1280-1600 ml | | |
| | | Phenthoate 5% DP | - | 15 kg | | |
| | | Quinalphos 250 g/l EC | 50 ml | 1600-2000 ml | | |
| | | Diazinon 500 g/l | 30 ml | 960-1200 ml | | |
| | | EC/EW Fenthion 500 g/l | 50 m | 1600-2000 ml | | |
| | | EC Phenthoate 500 g/l EC | 1 50 ml | 1600-2000 ml | | |
| 07. | **Case worm (CW)** *Nymphula depunctalis* **Rice swarming caterpillars (RSC) & cutworms** *Melanitis* spp. *Spodoptera* spp. *Mythimna separata* | Chlorpyriphos 200 g/l EC | 40 ml | 1280-1600 ml | | CW damage appears in patches. Spot application may suffice. Drain the field at the first appearance of the damage. Spray late in the evening for effective control of RSC. |
| | | Chlorpyriphos 400 g/l EC | 20 ml | 640-800 ml | | |
| | | Fenthion 500 g/l EC | 50 ml | 1600-2000 ml | | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage 1 | Rate of application (Product/ha) Stage 2 | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|
| 08. | **Mole cricket** *Gryllotalpa orientalis* | Fenthion 500 g/l EC | Apply as a bait by mixing 14ml of the product/ 1 kg of rice bran. | | | | Impound water to the field and maintain a water level of 1-2 inches, specially near bunds. Place bait on bunds when damaged plants are found. |
| 10. | **Rice field crab** *Paratelphusa ceylonensis* | Quinalphos 250 g/l EC Diazinon 500 g/l EC/EW Fenobucarb 500 g/l EC | Mix 3 ml of insecticide in 1 lt of water | | | | Squirt insecticide solution into crab burrows after removing the swirl plate from the nozzle. |
| 11. | **Rattus** *Ratus* spp. *Bandicoota* spp. | Difenacoum 0.005% RB<br>Coumatetralyl 0.0375% RB<br>Brodifacoum 0.005% RB<br>Difethialone 0.0025% RB<br>Flocoumafen 0.005% RB | | | | | Start baiting soon after transplanting and continue upto grain maturity. Place the bait inside a piece of bamboo about 1 foot long. (40 baiting stations/ha). |
| | **CROPS : BEANS, YARD LONG BEANS & PULSES (Cowpea, Mung bean, Pigeon pea, Blackgram)** | | | | | | |
| 12. | **Bean fly** *Ophiomyia phaseoli* | Thiamethoxam 70% WS | 1.5 g/kg seed | | | | Mix 1.5g of Thiamethoxam in 8-10 ml of water and mix with the seeds, and keep for about 1 hour before planting. Wear gloves when handling chemicals and planting treated seeds. |
| | | Carbosulfan 200 g/l SC | 30 ml | 960-1200ml | 1500-1800ml | 14 | Apply at 7 days after planting or when first pair of leaves appear and repeat after 2 weeks if necessary. Repeat application at flowering if infestation is severe, specially for crops planted *in Yala* and late *Maha*. Diazinon is incompatible with copper containing compounds. |
| | | Oxydemeton-methyl 250 g/l EC | 30 ml | 960-1200ml | 1500-1800ml | 21 | |
| | | Formothion 330 g/l EC | 30 ml | 960-1200ml | 1500-1800ml | 14 | |
| | | Diazinon 500 g/l EC/EW | 40 ml | 1280-1600ml | 2000-2400ml | 14 | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage 1 | Stage 2 | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|
| 13. | **Legume pod borers** *Maruca vitrata* *Helicoverpa armigera* *Lampides boeticus* | Novaluron 100 g/l EC | 10 ml | 320-400 ml | 500-600 ml | 14 | Start spraying at flowering and repeat at 10-14 day intervals, if necessary. Three sprayings may be necessary for pulses. |
| | | Chlorfluazuron 50 g/l EC | 10 ml | 320-400 ml | 500-600 ml | 10 | |
| | | Thiodicarb 375 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | 14 | |
| | | Etofenprox 100 g/l EC | 15 ml | 480-600 ml | 750-900 ml | 07 | |
| | | Chlorpyriphos 200 g/l EC | 60 ml | 1920-2400 ml | 3000-3600 ml | 14 | |
| | | Chlorpyriphos 400 g/l EC | 30 ml | 960-1200 ml | 1500-1800 ml | 14 | |
| | **Thrips, Aphids, Whiteflies, Leaf hoppers, Cutworm & Mites - Pl. refer general pests** | | | | | | |
| | **CROPS: CABBAGE, RADISH, KNOLKHOL & CAULIFLOWER** | | | | | | |
| 14. | **Leaf eating Caterpillars** *Spodoptera litura* *Hellula undalis* *Chrysodeixis eriosoma (Plusia eriosoma)* *Crocidolomia binotalis* *Plutella xylostella* (DBM) | Neem seed water extract | 400 g | 12-16 kg | 20-24 kg | 07 | Use 20 g/l of water for fresh neem seeds or 40 g/l of water if seeds are 6 months or more old. Add water just to submerge 200-400 g of crushed neem seeds and mix well. Keep the mixture for more than 4 hrs and squeez through a cloth several times adding water to make 10 l of the mixture. Add 5 ml of a detergent (Teepol (R)) to 10 l of mixture before spraying. Application interval 7-10 days. Apply in the evening. |
| | | Tebufenozide 200 g/l SC | 15 ml | 480-600 ml | 750-900ml | 10 | Apply insecticides, at the first sign of damage and repeat at 2 week intervals, if necessary. Count catapillars weekly in 12 plants at random and spray if the count exceeds 8 DBM or 4 larvae of other |
| | | Chlorfluazuron 50 g/l EC | 10 ml | 320-400 ml | 500-600 ml | 10 | |
| | | Azadirachtin 50 g/l SL | 20 ml | 640-800 ml | 1000-1200 ml | 07 | |
| | | Etofenprox 100 g/l EC | 15 ml | 480-600 ml | 750-900 ml | 07 | |
| | | Profenophos 500 g/l EC | 20 ml | 640-800 ml | 1000-1200 ml | 14 | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage 1 | Stage 2 | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|
| | | Lufenuron 50 g/l EC | 10 ml | 320-400 ml | 500-600 ml | 14 | caterpillar species. Spot application at early stage of detection is more economical for *S.litura* and *C.binotalis*. |
| | | Chromafenozide 50 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | 10 | |
| | | Emamectin benzoate 5% SG | 4 g | 160-200 g | 250-300 g | 07 | |
| | | Indoxacarb 150 g/l EC | 4 ml | 160-200 ml | 250-300 ml | 14 | |
| | | Spinosad 25 g/l SC | 10 ml | 320-400 ml | 500-600 ml | 07 | |
| | **Aphids, cutworms, snails & slugs - Pl. refer general pests.** | | | | | | |
| | **CROP : POTATO** | | | | | | |
| **15.** | **Potato tuber moth** | | | | | | |
| | *Phthorimaea* | Infestation in stores | 10 ml | | | | Clean all stores well in advance of harvesting potatoes. Walls, floors and storage trays should be cleaned and given a residual spray and air-dried before storing tubers. |
| | *operculella* | Prothiophos 500 g/l EC | 10 g | | | | |
| | | Acetamiprid 20% SP | 10 ml | | | | |
| | | Novaluron 100 g/l EC | 40 ml | | | | |
| | | Pirimiphos-methyl 500 g/l EC | | | | | |
| | | **Field infestation** | | | | | When first signs of damage are seen, direct spray to underside of the foliage close to the stem and branches. |
| | | Carbaryl 85% WP | 40 g | 1200-1600 kg | 640-800 ml | 07 | |
| | | Carbaryl 480 g/l SC | 20 ml | 2000-2400 kg | 1000-1200 ml | 07 | |
| | | **Treatment for seed potatoes:** | | | | | Inspect stores on a fortnghtly basis. If there is any sign of insect damage, |
| | | Thiocyclam (hydrogen oxalate) 50% SP | 40-50 g/100 kg seed potato | | | | |
| **16.** | **Green peach aphid** | Dinotefuran 20% WP | 9 g | 300-360 g | 450-540 g | 14 | |
| | *Myzus persicae* | Imidacloprid 200 g/l SL | 5 ml | 160-200 ml | 250-300 ml | 14 | |
| | | Carbaryl 480 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | 14 | |
| | | Thiamethoxam 25% WG | 3 g | 96-120 g | 150-180 g | 14 | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage 1 | Rate of application (Product/ha) Stage 2 | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|
| | | Thiacloprid 240 g/l SC | 2.5 ml | 80-100 ml | 125-150 ml | 14 | |
| | | Imidacloprid 70% WG | 1.25 g | 40-50 g | 60-75 g | 14 | |
| | | Ethiprole 100 g/l SC | 12.5 ml | 400-500 ml | 600-750 ml | 14 | |
| | | Thiocyclam (hydrogen oxalate) 50% SP | 25 g | 800-1000 g | 1200-1500 g | 14 | |
| | | Dimethoate 400 g/l EC | 30 ml | 960-1200 ml | 1500-1800 ml | 14 | |
| | | Carbosulfan 200 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | 14 | |
| | | Quinalphos 250 g/l EC | 20 ml | 640-800 ml | 1000-1200 ml | 14 | |
| **17.** | **Thrips** *Thrips palmi and other Thrips* spp. | Dinotefuran 20% WP | 9 g | 200-360 g | 450-540 g | 14 | |
| | | Imidacloprid 200 g/l SL | 5 ml | 160-200 ml | 250-300 ml | 14 | |
| | | Fipronil 50 g/l SC | 10 ml | 320-400 ml | 500-600 ml | 14 | |
| | | Carbosulfan 200 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | 14 | |
| | | Thiacloprid 240 g/l SC | 2.5 ml | 80-100 ml | 125-150 ml | 14 | |
| | | Imidacloprid 70% WG | 1.25 g | 40-50 g | 60-75 g | 14 | |
| | | Ethiprole 100 g/l SC | 12.5 ml | 400-500 ml | 600-750 ml | 14 | |
| | | Thiocyclam (hydrogen oxalate) 50% SP | 25 g | 800-1000 g | 1250-1500 g | 14 | |
| **18.** | **Whiteflies** *Bemisia tabaci* | Dinotefuran 20% WP | 9 g | 300-360 g | 450-540 g | 14 | |
| | | Thiacloprid 240 g/l SC | 2.5 ml | 80-100 ml | 125-150 ml | 14 | |
| | | Imidacloprid 70% WG | 1.25 g | 40-50 g | 60-75 g | 14 | |
| | | Ethiprole 100 g/l SC | 12.5 ml | 400-500 ml | 600-750 ml | 14 | |
| | | Thiocyclam (hydrogen oxalate) 50% SP | 25 g | 800-1000 g | 1250-1500 g | 14 | |
| **19.** | **Leaf miner** *Liriomyza huidobrensis* | Cyromazine 75% WP | 3 g | 96-120 g | 150-180 g | 14 | Apply on to leaf surface when damage is seen. Spray at initial stage of infestation and continue at weekly intervals. Apply neem seed water extract at 3-4 day intervals. |
| | | Azadirachtin 50 g/l SL Neem seed water extract | 20 ml | 640-800 ml | 1000-1200 ml | 07 | |
| | | Abamectin 18 g/l EC | 400 g | 12-16 kg | 20-24 kg | - | |
| | | | 6 ml | 192-240 ml | 300-360 ml | 14 | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| **20.** | **Potato cyst nematode** *Globodera rostochinensis* | Calcium hypochlorite 70% | 35 g/10 $m^2$ | | | | | Apply to furrows (at planting or one day before planting) and cover with soil. Do not mix with inorganic fertilizers. |
| | **White grubs, Black cutworms, Root eating ants & Mtes - Pl. refer general pests** | | | | | | | |
| | **CROP : TOMATO** | | | | | | | |
| **21.** | **Tomato fruit borer** *Helicoverpa armigera* | Novaluron 100 g/l EC | 10 ml | 320-400 ml | 500-600 ml | | | The first spraying may be done at the time of flowering and formation of fruits and repeat if necessary at 10-14 day intervals. |
| | | Chlorfluazuron 50 g/l EC | 15 ml | 480-600 ml | 750-900 ml | | | |
| | | Methomyl 40% SP | 20 g | 640-800 g | 1000-1200 g | | | |
| | **Thrips & Root knot nematodes - Pl. refer general pests** | | | | | | | |
| | **CROP : BEET ROOT** | | | | | | | |
| **22.** | **Leaf miner** *Liriomyza huidobrensis* | Cyromazine 75% WP | 3 g | 96-120 g | 150-180 g | | 14 | |
| | | Azadirachtin 50 g/l SL | 20 ml | 640-800 ml | 1000-1200 ml | | 07 | |
| | | Neem seed water extract | 400 g | 12-16 kg | 20-24 kg | | - | |
| | | Abamectin 18 g/l EC | 6 ml | 190-240 ml | 300-360 ml | | 07 | |
| | **CROPS : BRINJAL & THIBBATU** | | | | | | | |
| **23.** | **Brinjal shoot & fruit borer** *Leucinodes orbonalis* | Carbofuran 3% GR | 20 g/10 $m^2$ | - | | | 21 | Apply Carbofuran **only** at transplanting to the planting hole and other pesticides at flowering. Continue application at fortnightly intervals after harvesting, if necessary. •:• Repeated application may lead to resistance buildup. |
| | | Carbaryl 85% WP | 30 g | 960-1200 g | 1500-1800 g | | 07 | |
| | | Carbaryl 480 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | | 07 | |
| | | Etofenprox 100 g/l EC | 15 ml | 480-600 ml | 750-900 ml | | 07 | |
| | | Permethrin 250 g/l EC •:• | 3 ml | 96-120 ml | 150-180 ml | | 07 | |
| | | Esfenvalerate 75 g/l EC •:• | 3 ml | 96-120 ml | 150-180 ml | | 07 | |
| | | Fenvalerate 200 g/l EC •:• | 10 ml | 320-400 ml | 500-600 ml | | 07 | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | Beta-Cyfluthrin 25 g/l EC •:• | 8 ml | 256-320 ml | 400-480 ml | | 07 | Remove and destroy all damaged fruits and shoots before applying insecticides. |
| | | Deltamethrin 25 g/l EC •:• | 7 ml | 225-280 ml | 350-420 ml | | 07 | |
| | | Spinosad 450 g/l SC | 3 ml | 100-120 ml | 150-180 ml | | 07 | |
| | | Chromafenozide 50 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | | 07 | |
| | **CROPS : CUCURBITS (BITTER GOURD, SNAKE GOURD, SALAD CUCUMBER ETC.)** | | | | | | | |
| **24.** | **Aulacophora beetles** *Aulacophora foveicollis* *A. cincta* *A.cruenta* *A. lewisii* | Carbaryl 85% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 07 | Use Carbofuran only for controlling larvae. Apply ranules into soil to a depth of about 2 cm at planting. For adults spray foliage when the damage |
| | | Carbaryl 480 g/l SC | 25 ml | 800-1000 ml | 1250-1500 ml | 1750-2000 ml | 07 | |
| | | Carbofuran 3% GR | 5 g/vine | - | - | - | - | |
| **25.** | **Melon Fly** *Bactrocera cucurbitae* | Fenthion 500 g/l EC | 15 ml | - | 750-900 ml | 1050-1200 ml | | Always adopt IPM practices such as crop sanitation, bagging of fruits, use of baits. Start spraying chemicals at the time *of flowering and continue at fortnightly intervals, if necessary. Mix 25 g of sugar per litre of spray mixture*. |
| | | Protein bait with Spinosad | Protein bait 250-300 ml + Spinosad 25 g/l SC 7 ml | - | 1250 ml | 2000 ml | | Spray mixture should be spot sprayed in the morning to the under side of the foliage at 5-7 day intervals starting from the flowering stage. (250-400 spots/ha: 200 ml spray mixture/spot.) |
| **26.** | **Paddle-legged bug** *Leptoglossus* spp. (=*L. gonagra)* | Carbaryl 85% WP | 30 g | 960-1200 g | 1500-1800 g | 2100-2400 g | 07 | Apply to foliage when nymphs congregate in the morning and repeat in 14 days, if necessary. |
| | | Carbaryl 480 g/l SC | 25 ml | 800-1000 ml | 1250-1500 ml | 1750-2000ml | 07 | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| 27. | **Gall fly** *Lasioptera falcata* | Carbaryl 85% WP | 45 g | 1440-1800 g | 2250-2700 g | 3150-3600 g | 07 | Spray when infestation is seen on tender parts of the vine. Repeat in 14 days, if necessary. |
| | | Carbaryl 480 g/l SC | 25 ml | 800-1000 ml | 1250-1500 ml | 1750-2000 ml | 07 | |
| | | Profenophos 500 g/l EC | 30 ml | 960-1200 ml | 1500-1800 ml | 2100-2400 ml | 14 | |
| | **Thrips, Aphids, Leaf hoppers, Mites & Root knot nematodes - Pl. refer general pests.** | | | | | | | |
| | **CROP : OKRA** | | | | | | | |
| 28. | **Shoot and pod borer** *Earias vittella* | Tebufenozide 200 g/l SC | 15 ml | 480-600 ml | 750-900 ml | - | 10 | Apply from flowering stage if infestation is seen and repeat at fortnightly intervals, if necessary. |
| | | Carbaryl 85% WP | 20 g | 640-800 g | 1000-1200 g | | 07 | |
| | | Carbaryl 480 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | | 07 | |
| 29. | **Red cotton bug** *Dysdercus cingulatus* | Carbaryl 85% WP | 20 g | 640-800 g | 1000-1200 g | - | 07 | Apply insecticide if damage is serious. The damage is important when the |
| | | Carbaryl 480 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | | 07 | |
| 30. | **Leaf webber** *Sylepta derogata (=Haritalodes derogata)* | Carbaryl 85% WP | 20 g 20 ml | 640-800 g | 1000-1200 g | - | 07 | Apply only to leaves, if infestation is severe. |
| | | Carbaryl 480 g/l SC | | 640-800 ml | 1000-1200 ml | | 07 | |
| | **Aphids, Leaf hoppers, Whiteflies & Mites - Pl. refer general pests.** | | | | | | | |
| | **CROP : CHILLI** | | | | | | | |
| 31. | **Chilli leaf curl complex Thrips** *Scirtothrips dorsalis* **Aphids** *Aphis gossypii Myzus persicae* | Thiocyclam (hydrogen oxalate) 50% SP | 5 g | 160-200 g | 250-300 g | | 14 | Treat the nursery and continue spraying insecticides at 10-14 day intervals if symptoms appear after transplanting. |
| | | Fipronil 50 g/l SC | 10 ml | 320-400 ml | 500-600 ml | | 14 | |
| | | Imidacloprid 200 g/l SL | 10 ml | 320-400 ml | 500-600 ml | | 14 | |
| | | Lufenuron 50 g/l EC | 20 ml | 640-800 ml | 1000-1200 ml | | 14 | |
| | | Carbosulfan 200 g/l SC | 30 ml | 960-1200 ml | 1500-1800 ml | | 14 | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| | **Whitefly** | Prothiophos 500 g/l EC | 20 ml | 640-800 ml | 1000-1200 ml | | 21 | |
| | *Bemisia tabaci* | Phosalone 350 g/l EC | 30 ml | 960-1200 ml | 1500-1800 ml | | 14 | |
| | | Thiamethoxam 25% WG | 10 g | 320-400 ml | 500-600 ml | | 14 | |
| | | Abamectin 18g/l EC | 6 ml | 190-240 ml | 300-360 ml | | 07 | |
| | | Fenobucarb 500 g/l EC | 20 ml | 640-800 ml | 1000-1200 ml | | 14 | |
| | | Acephate 75% SP | 10 g | 320-400 g | 500-600 g | | 14 | |
| | | Profenophos 500 g/l EC | 20 ml | 640-800 ml | 1000-1200 ml | | 14 | |
| | **Mites** | Sulphur 80% WP/WG | 80 g | 2500-3200 g | 4000-4800 g | | 14 | Sulphur should be sprayed to the underside of the foliage. |
| | *Hemitarsonemus latus* | Abamectin 18 g/l EC | 6 ml | 190-240 ml | 300-360 ml | | 07 | |
| **32.** | **Chilli pod borer** | Chlorfluazuron 50 g/l EC | 10 ml | 320-400 ml | 500-600 ml | | 10 | Start spraying at flowering and repeat if necessary at 10 day intervals. Spray in the evening. |
| | *Helicoverpa armigera* | Thiodicarb 375 g/l SC | 15 ml | 480-600 ml | 750-900 ml | | 14 | |
| | *Spodoptera litura* | Methomyl 40% SP | 20 g | 640-800 g | 1000-1200 g | | 14 | |
| | **CROP : ONION** | | | | | | | |
| **33.** | **Onion thrips** | Imidacloprid 200 g/l SL | 10 ml | 160-200 ml | | | 14 | Insecticides should be applied at first sign of infestation. Repeat application if necessary at 10 day intervals. |
| | *Thrips tabaci* | Thiacloprid 240 g/l SC | 10 ml | 320-400 ml | | | 14 | |
| | | Fipronil 50 g/l SC | 10 ml | 320-400 ml | | | 14 | |
| | | Prothiophos 500 g/l EC | 20 ml | 640-800 ml | | | 21 | |
| | | Fenthion 500 g/l EC | 30 ml | 960-1200 ml | | | 14 | |
| | | Carbaryl 85% WP | 15 g | 480-600 g | | | 07 | |
| | | Carbaryl 480 g/l SC | 25 ml | 800-1000 ml | | | 07 | |
| **34.** | **Onion caterpillars** | Emamectin benzoate 5% SG | 4 g | 130-160 g | | | 07 | Insecticides should be sprayed at first sign of infestation. Diazinon is incompatible with Copper containing compounds. Incorporate Carbofuran only during the 1st week of planting. |
| | *Spodoptera litura* | Metaflumizone 240 g/l EC | 25 ml | 800-1000 ml | | | 14 | |
| | *Spodoptera exigua* | Diazinon 500 g/l EC/EW | 50 ml | 1600-2000 ml | | | 14 | |
| | | Chlorfluazuron 50 g/l EC | 10 ml | 320-400 ml | | | 10 | |
| | | Deltamethrin 25 g/l EC | 6 ml | 190-240 ml | | | 07 | |
| | | Beta-Cyfluthrin 25 g/l EC | 10 ml | 320-400 ml | | | 07 | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | Permethrin 250 g/l EC | 3 ml | 96-120 ml | | | 07 | |
| | | Esfenvalerate 75 g/l EC | 3 ml | 96-120 ml | | | 07 | •:• Repeated application may lead to resistance buildup. |
| | | Fenvalerate 200 g/l EC | 10 ml | 320-400 ml | | | 07 | |
| | | Carbofuran 3% GR | - | 15-20 kg | | | 21 | |
| | **CROP : SESAME** | | | | | | | |
| **35.** | **Leaf webber** *Antigastra catalaunalis* | Neem seed water extract | 400 g | 12-16 kg | 20-24 kg | | - | Insecticide should be applied on to the growing points when damage is apparent. |
| | | Chlorfluazuron 50 g/l EC | 30 ml | 960-1200 ml | 1500-1800 ml | | 10 | |
| | | Tebufenozide 200 g/l SC | 15 ml | 480-600 ml | 750-900 ml | | 14 | |
| | | Acephate 75% SP | 20 g | 640-800 g | 1000-1200 g | | 14 | |
| | **CROP : MUSTARD** | | | | | | | |
| **36.** | **Diamond back moth** *Plutella xylostella* | Please refer cabbage leaf eating caterpillars | | | | | | |
| | **Plant sucking bug** *Bagrada hilaris* | Dimethoate 400 g/l EC | 10 ml | 320-400 ml | 500-600 ml | | 14 | Spray to the foliage when the damage is seen or a substantial number of bugs are observed on the crop. Dimethoate is incompatible with sulphur - based materials. |
| | **CROP : INNALA** | | | | | | | |
| **37.** | **Root-knot nematode** *Meloidogyne* spp. | Pl. refer general pests. | | | | | | |
| | **CROP : SWEET POTATO** | | | | | | | |
| **38.** | **Sweet potato weevil** *Cylas formicarius* | Fenthion 500 g/l EC | 30 ml | 960-1200 ml | 1500-1800 ml | - | 14 | Dip cuttings for 10 minutes before planting. Spray 7 days after planting and repeat in 2 weeks in infested lands |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| | **CROPS : MAIZE & SORGHUM** | | | | | | | |
| **39.** | **Stem borer** *Chilo partellus* *Sesamia* spp. | Diazinon 5% GR | - | 10-15 kg | - | - | 14 | Place granules in the central whorl. Single application is sufficient. |
| | | Novaluron 100 g/l EC | 10 ml | 320-400 ml | 500-600 ml | - | 14 | Direct spray to central whorl. Apply at 25-35 and at 45-55 days after planting. |
| | | Thiodicarb 375 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | | 14 | |
| | | Etofenprox 100 g/l EC | 15 ml | 480-600 ml | 750-900 ml | | 07 | |
| **40.** | **Cob or grain borer** *Helicoverpa armigera* | Thiodicarb 375 g/l SC | 20 ml | - | 1000-1200 ml | - | 14 | Spray at tasselling in the evening. |
| | | Etofenprox 100 g/l EC | 15 ml | | 750-900 ml | | 07 | |
| | | Novaluron 100 g/l EC | 10 ml | | 500-600 ml | | 14 | |
| | | Methomyl 40% SP | 20 g | | 1000-1200 g | | 14 | |
| | **CROP : MONGO** | | | | | | | |
| **41.** | **Mango fruit fly** *Bactrocera dorsalis* *Bactrocera kandiensis* | Fenthion 500 g/l EC | 10 ml | | - 1000-1400 ml | - | 14 | Follow IPM practices for successful control of the pest. Start spraying chemicals at the onset of fruit set and continue at fortnightly intervals if population shows an increasing trend. Mix 25g of sugar per litre of spray mixture. Use a sprayer with a long lance. Start spraying chemicals at the time of flowering and continue at fortnightly intervals, if necessary. Mix 25 g of sugar per litre of spray mixture. |
| | | Protein bait with Spinosad | Protein bait 250-300 ml + Spinosad | | 1000 ml | | 07 | Spray mixture should be spot sprayed in the morning to the under side of the foliage of lower |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | 25 g/l SC<br>7 ml | | | | | branches in each tree at weekly intervals starting from one month after flowering. (100 spots/ha.: 400 ml spray mixture/spot.) |
| **42.** | **Mango leaf hopper**<br>*Idioscopus clypealis*<br>*Idioscopus niveosparus*<br>*Amritodus brevistylus* | Imidacloprid 200 g/l SL<br>Dimethoate 400 g/l EC<br>Thiamethoxam 25% WG | 10 ml<br>30 ml<br>10 g | - | - | - | 14<br>14<br>14 | Prior to new flush growth spray to colonized areas on the trunk and foliage as spot applications. If necessary, apply at flower initiation and new flush growth. Dimethoate is incompatible with sulphur-based compounds. |
| **43.** | **Mango seed weevil**<br>*Stenochetus mangiferae* | Dimethoate 400 g/l EC | 30 ml | - | - | - | 14 | Spray to the trunk prior to flowering and during early stage of food development. Dimethoate is incompatible with sulphur-based compounds. |
| **44.** | **Leaf cutting weevil**<br>*Deporous marginatus* | Dimethoate 400 g/l EC | 40 ml | - | - | - | 14 | Collect and destroy the cut leaves lying under the tree. Spray only when the damage is severe. Dimethoate is incompatible with sulphur-based compounds. |
| | **CROP : PINEAPPLE** | | | | | | | |
| **45.** | **Mealy bugs**<br>*Dysmicoccus brevipes* | Acetamiprid 20% SP<br>Profenophos 500 g/l EC<br>Prothiophos 500 g/l EC<br>Carbosulfan 200 g/l SC | 10 g<br>30 ml<br>30 ml<br>30 ml | - | - | - | 14<br>14<br>21<br>14 | Dip planting materials in one of the recommended insecticide solutions for 5 minutes. Allow it to dry for a day. To prevent crown rot treat with a fungicide containing Metalaxyl 8%, and Mancozeb 64% and leave it to dry for another day before planting. At the end of first harvest, monitor ant/mealy bug |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | incidences. If infestation is seen use the above insecticides at the same rate. Direct the spray to the base of leaves and to the crown. |
| | **CROP : BANANA** | | | | | | | |
| **46.** | **Root/Corm weevil** *Cosmopolites sordidus Odioporus longicollis* | Carbofuran 3% GR | 6 g/trap | - | - | - | | Prepare traps by cutting 6-10 cm discs from harvested banana "stems", Sandwich 6g of Carbofuran between two discs. Randomly place 25 traps/acre in the field. Replace traps every month. |
| | **CROP : CITRUS** | | | | | | | |
| **47** | **Leaf miner** *Phyllocnistis citrella* | Phenthoate 500 g/l EC | 10 ml | - | - | - | 14 | Before spraying remove infested leaves. Apply insecticides to the new flush. |
| | **CROP : PAPAW** | | | | | | | |
| **48.** | **Papaya mealy bug** *Paracoccus marginatus* | Thiamethoxam 25% WG | 10 g | | 2.6 - 3.2 kg | | 14 | This pest also attacks manioc, jak, breadfruit, mango, guava and several other fruits, vegetables and ornamental plants. Adopt IPM practices for successful controlling of the pest and to facilitate the activity of parasitoids.<br><br>Only if the infestation is heavy and spreading fast, spray insecticides at 10-14 day intervals. |
| | | Imidacloprid 200 g/l SL | 10 ml | | 2.6 - 3.2 l | | 14 | |
| | | Mineral Oil | 50 ml | | 13 - 16 l | | 07 | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| | **PESTS OF STORED GRAINS - CEREALS & PULSES** | | | | | | | |
| **49.** | **Rice moth**<br>*Sitotroga cerealella*<br>**Rice weevil**<br>*Sitophilus oryzae*<br>**Red flour beetle**<br>*Tribolium castaneum*<br>**Pulse bruchids**<br>*Callosobruchus* spp. | Pirimiphos-methyl 500 g/l EC | 25 ml | | | | | Cereals and pulses should be well dried before storage. Treat surface of walls and floor with 5-10 l/100 $m^2$. Bags should be turned inside out and sprayed and air dried before use. |
| | **INSECT PEST CONTROL IN POLY-HOUSES - VEGETABLES** | | | | | | | |
| **50.** | **Aphids**<br>*Myzus persicae*<br>*Aphis gossypii* | Pl. refer general pests | | | | | | Most common on cucumber and bell pepper. Remove and destroy infested flushes and maintain crop sanitation. If it fails, apply insecticides on to the heavily infested flushes. Repeat at 2 week intervals during severe infestation. |
| **51.** | **Whiteflies**<br>*Bemisia tabaci*<br>*Trialeurodes vaporariorum*<br>*Aleurodicus disperses* | Pl. refer general pests | | | | | | Most common on cucumber and bell perper. Mulching with straw or saw dust may reduce the infestation. |
| **52.** | **Thrips**<br>*Scirtothrips dorsalis*<br>*Thrips palmi*<br>*Frankliniella* spp | Pl. refer general pests | | | | | | Most common on cucumber and bell pepper. Mulching with straw or saw dust may reduce the infestation. Application of insecticides using a high volume spray in late hours of the day gives better results. |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| **53.** | **Leaf miner**<br>*Liriomyza sativae*<br>*Liriomyza huidobrensis* | Cyromazine 75% WP<br>Neem seed water extract<br>Abamectin 18 g/l EC<br>Azadeirectin 50 g/l SL | 3 g<br>200-400 g<br>6 ml<br>20 ml | | | | 7<br>-<br>7<br>- | Most common on cucumber and tomato. Remove weeds and previous crop residues before establishment of a new crop. Reduce the application of other insecticides. |
| **54.** | **Cutworm**<br>*Spodoptera litura* | Chlorfluazuron 50 g/l EC<br>Etofenprox 100 g/l EC<br>Azadirachtin 50 g/l SL<br>Indoxacarb 150 g/l EC | 10 ml<br>15 ml<br>20 ml<br>4 ml | | | | 10<br>07<br>07<br>14 | Most common on bell pepper and tomato. Remove weeds and previous crop residues before cultivation of a new crop. Hand pick clusters of eggs and larvae frequently and destroy. |
| **55.** | **Termites**<br>*Odonotermes* spp | Pl. refer general pests | | | | | | Drench insecticides to wet the infested soil or planting media. |
| **56.** | **Mites**<br>*Hemitarsonemus latus*<br>*Tetranychus urticae* | Pl. refer general pests | | | | | | Most common on cucumber and bell peper. Do not apply Sulphur to salad cucumber as it is phyto-toxic. Direct insecticides to under surface of leaves. |
| **57.** | **Snails and Slugs** | Pl. refer general pests | | | | | | Avoid formation of wet and damp conditions. Maintain the crop and surroundings of the house weed free and clean. |
| | **INSECT PEST CONTROL IN FLORICULTURAL CROPS** | | | | | | | |
| **58.** | **Aphids**<br>*Myzus persicae*<br>*Aphis gossypii*<br>*Macrosiphum* spp | Imidacloprid 200 g/l SL<br>Thiamethoxam 25% WG | 10 ml<br>5 g | | | | | Apply to the under surface of leaves & shoots of heavily infested flushes. Repeat if necessary at 2 week intervals. |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| 59. | **Armoured scales**<br>*Chrysomphalus aonidum*<br>*Pseudaulacaspis pentagona*<br>*Aspidiotus* spp.<br>*Lepidosaphes beckii* | Imidacloprid 200 g/l SL | 10 ml | | | | | Apply to the heavily infested flushes, stems, roots and under surface of leaves. |
| | **Soft scales**<br>*Coccus* spp.<br>*Pulviner* spp.<br>*Saissetia* spp.<br>*Ceroplastes* spp. | Imidacloprid 200 g/l SL | 10 ml | | | | | |
| | **Mealy bugs**<br>*Pseudococcus* spp. | Acetamiprid 20% SP | 10 g | | | | | |
| 60. | **Whiteflies**<br>*Trialeurodes vaporariorum*<br>*Bemisia tabaci*<br>*Aleuroidicus dispersus* | Acetamiprid 20% SP<br>Imidacloprid 200 g/l SL<br>Thiamethoxam 25% WG | 7 g<br>10 ml<br>5 g/10 ml | | | | | Apply to the under surface of leaves of heavily infested flushes. |
| 61. | **Thrips**<br>*Thrips palmi*<br>*Thrips tabaci*<br>*Frtmkliniella* spp.<br>*Selenothrips rubrocinctus*<br>*Chaetanathochrips orchidii* | Imidacloprid 200 g/l SL<br>Imidacloprid 70% WG<br>Flipronil 50 g/l SC<br>Thiamethoxam 25% WG | 10 ml<br>1.25 g<br>10 ml<br>5 g | | | | | Use alternative control methods such as mulching, sprinkler irrigation, etc. If infestation prevails apply insecticides to the infested flushes in the late evening. |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| 62. | **Lepidopteran leaf eating caterpillars Leaf folders/rollers Bud worms,** (Noctuidae, Sphingidae, Papilionidae, Pieridae and Lymantridae), | Chlorfluazuron 50 g/l SL | 10 ml | | | | | Apply insecticides to the upper and under surface of leaves of infested flushes. |
| | | Etofenprox 100 g/l EC | 15 ml | | | | | |
| | | Indoxacarb 150 g/l EC | 4 ml | | | | | |
| | | Emamectin benzoate 5% SG | 4 g | | | | | |
| | **Army worms** *Spodoptera* spp. and *Mythimna* spp. **Black cut worms** *Agrotis* spp. | Profenophos 500 g/l EC | 20 ml | | | | | Drench the soil around the base of the plant late in the evening when the damage is observed. |
| | | Prothiophos 500 g/l EC | 30 ml | | | | | |
| | | Chlorfluazuron 50 g/l EC | 10 ml | | | | | |
| | | Etofenprox 100 g/l EC | 15 ml | | | | | |
| 63. | **Stem borers and Tree borers.** | Fipronil 0.3% GR | 0.25-0.5 g/plant, 5 g/tree | | | | | |
| | | Fipronil 50 g/l SC | 10-20 ml | | | | | |
| | | Carbofuran 3% GR | 0.5-1 g/plant, 6-10 g/tree | | | | | |
| | | Carbosulfan 200 g/l SC | 30 ml | | | | | |
| | | Diazinon 5% GR | 0.5-1 g/plant, 6-10 g/tree | | | | | |
| | | Chlorpyriphos 400 g/l EC | 25 ml | | | | | |
| | | Chlorpyriphos 200 g/l EC | 50 ml | | | | | |
| 64. | **Leaf miners** *Liriomyza* spp. | Cyromazine 75% WP | 3 g | | | | | |
| | | Neem seed water extract | 400 g | | | | | |
| | | Abamectin 18 g/l EC | 6 ml | | | | | |
| | | Azadirachtin 50 g/l SL | 20 ml | | | | | |
| 65. | **Brown cricket** | Fenthion 500 g/l EC | Mix 14 ml in 1 kg of rice bran and apply as a bait. | | | | | Mix insecticide with rice bran and spread as a band along plant rows in the evening. |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| **66.** | **Foliar nematodes** *Aphelenchoides besseyi* *Aphelenchoides fagariae* | Carbofuran 3% GR | | | 30 g/10 $m^2$ | | 21 | Ferns, Lilies, Violets, Aanthurium, Ficus and many flowering plant species are suceptible to *Aphelenchoides* species. Apply Carbofuran into the soil at 5-10 cm depth. |
| **67.** | **Root nematodes, Root lesion nematodes** *Pratylenchus loosi* *Pratylenchus zeae* *Pratylenchus brachyurus* | Dazomet 97% GR | | | 330 g/10 $m^2$ | | 21 | Aglaonema, Caladium, Dracaena, Ficus, Monstera, Codiaeum, Philodendron and Syngonium, are susceptible to these nematodes. |
| **68.** | **Root burrowing nematodes** *Radopholus similis* | Carbofuran 3% GR<br>Dazomet 97% GR | | | 30 g/10 $m^2$<br>330 g/10 $m^2$ | | | Anthurium, Calathia, Chamaedorea, Maranta, Philodendron and Syngonium species are susceptible for *Radopholus* spp. Treat the soil with Carbofuran or fumigate the soil with Dazomet 97%. |
| **69.** | **Root knot nematodes** *Meloidogyne arenaria* *Meloidogyne incognita* *Meloidogyne Javanica* *Meloidogyne hapla* | Dazomet 97% GR<br>Carbofuran 3% GR | | | 330 g/10 $m^2$<br>60 g/10 $m^2$ | | | Fumigate the infested soil with Dazomet 3-4 week before planting or treat the infested soil with Carbofuran. |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| **70.** | **Ectoparasitic nematodes**<br>*Longidorus* spp.<br>*Xiphinema* spp.<br>*Trichodorus* spp.<br>*Paratrichodorus* spp. | Dazomet 97% GR<br>Carbofuran 3% GR | | | 330 g/10 $m^2$<br>60 g/10 $m^2$ | | | Fumigate the infested soil with Dazomet 3-4 week before planting or treat infested soil to a depth of 5-10 cm with Carbofuran at planting. |
| | **Termites, White grubs & Mites - pl. refer General pests** | | | | | | | |
| **71.** | **Snails and Slugs**<br>*Achatina* spp.<br>*Aplysia* spp. | Metaldehyde 6.5% RB | - | | | | | Mix with sufficient water to form balls, place at several points in the garden. |
| | *Deroceras reticulatum* | Metaldehyde 4% RB<br>Metaldehyde 3% RB | 40 g/10 $m^2$ | 10-40 kg | | | | Apply as a band in between rows or broadcast on soil. |
| **72.** | **Leaf hoppers**<br>*Amrasca* spp. | Acephate 75% SP<br>Acetamiprid 20% SP | 10 g<br>10 g | | | | 14<br>14 | Direct the spray to the upper and lower surfaces of leaves. |
| **73.** | **Aphids**<br>*Aphis gossypii*<br>*Myzus persicae*<br>*Aphis craccivora*<br>*Rhophalosipum maidis*<br>*Brevicoryne brassicae* | Imidacloprid 70% WG<br>Imidacloprid 200 g/l SL<br>Thiamethoxam 25% WG<br>Dimethoate 400 g/l EC | 1.25 g<br>10 ml<br>3 g<br>30 ml | -<br>-<br>-<br>- | -<br>-<br>-<br>- | | 14<br>14<br>14<br>14 | Dimethoate is incompatible with sulphur-based formulations. |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| **74.** | **Scales & Mealy bugs** | Imidacloprid 200 g/l SL | 10 ml | | | | 14 | |
| | | Fipronil 50 g/l SC | 10 ml | | | | 14 | |
| | | Dimethoate 400 g/l EC | 30 ml | | | | 14 | |
| **75.** | **Whiteflies** | Acetamiprid 20% SP | 10 g | | | | 14 | Spray early morning when the activity of the whitefly is low. |
| | *Bemisia tabaci* | Thiamethoxam 25% WG | 5 g | | | | 14 | |
| | *Trialeutodes* | Imidacloprid 70% WG | 1.5 g | | | | 14 | |
| | *vaporariorum* | Imidacloprid 200 g/l SL | 10 ml | | | | 14 | |
| | *Aleuroidicus dispersus* | | | | | | | |
| **76.** | **Thrips** | Imidacloprid 200 g/l SL | 10 ml | | | | 14 | Apply in the evening as a wet spray. |
| | *Scirtothrips dorsalis* | Imidacloprid 70% WG | 1.25 g | | | | 14 | |
| | *Thrips palmi* | Thiamethoxam 25% WG | 5 g | | | | 14 | |
| | *Frankliniella* spp. | Fipronil 50 g/l SC | 10 ml | | | | 14 | |
| | *Selenothrips rubrocinctus* | | | | | | | |
| | *Thrips* spp. | | | | | | | |
| **77.** | **Black cutworm** | Profenophos 500 g/l EC | 20 ml | | | | 14 | Drench the soil around the base of the plant late in the evening when the damage is observed. |
| | *Agrotis ipsilon* | Prothiophos 500 g/l EC | 30 ml | | | | 21 | |
| | *Agrotis segetum* | Chlorfluazuron 50 g/l EC | 10 ml | | | | 10 | |
| | | Etofenprox 100 g/l EC | 15 ml | | | | 07 | Apply Carbofuran granules to planting holes only at the time of planting. |
| | | Carbofuran 3% GR | 25 g/10 $m^2$ | | | | 21 | |
| **78.** | **White grubs** | Chlorpyriphos 200 g/l EC | 15 ml | | | | 14 | Apply Chlorpyriphos as a soil drench. |
| | *Melolontha* spp. | Chlorpyriphos 400 g/l EC | 10 ml | | | | 14 | |
| | *Anomala* spp. | | | | | | | |

| No. | Name of the Pest | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| **79.** | **Root eating ants** *Dorylus orientalis* | Chlorpyriphos 200 g/l EC | 40 ml | | | | 14 | Apply to soil around plants when damage is observed or routinely apply at potato tuberization in areas with a history of the damage. |
| | | Chlorpyriphos 400 g/l EC | 20 ml | | | | 14 | |
| | | Diazinon 500 g/l EC/EW | 100 ml | | | | 14 | |
| **80.** | **Termites** *Odonotermes* spp. | Imidacloprid 200 g/l SL | 5 ml | | | | 14 | Apply insecticide to wet the infested area. |
| | | Chlorpyriphos 200 g/l | 10 ml | | | | 14 | |
| | | EC Chlorpyriphos 400 g/l EC | 5 ml | | | | 14 | |
| | | Azadirachtin 10 g/l EC | | | | | | |
| **81.** | **Mites** *Tetranychus* spp. *Hemitarsonemus latus and other* species | Neem seed water extract | 5 ml 400 g | | | | 07 | Sulphur should be sprayed to the underside of the foliage. Apply at early infestation stage. |
| | | Sulphur 80% WP/WG | 80 g | | | | - | |
| | | Abamectin 18 g/l EC | 6 ml | | | | 14 | |
| | | Hexythiazox 10% WP | 5 g 15 ml | | | | 07 | |
| | | Flufenoxuron 100 g/l DC | | | | | 14 | |
| | | | | | | | 14 | |
| **82.** | **Root-knot nematodes** *Meloidogyne* spp. | Carbofuran 3% GR | 1.5 g/ planting hole | - | | - | 21 | Follow IPM practises such as crop rotation and incorporation of poultry manure to the soil (at the rate of 10 t/ ha one week before planting) Apply carbofuran only at planting or as nursery treatment for beet root. |

| | | |
|---|---|---|
| Abamectin 18 g/l EC | ... | Mightee, Vertimac 1.8% EC, Zoro, Narita, Mitsu |
| Acephate 75% SP | ... | Acenil, Acitole, Apollo, Action-R, Agstar Acephate, C-Phate, Harthene, Lancer, O-Phate, Orthene, Superthene, Surrender |
| Acetamiprid 20% SP | ... | Mospilan |
| Azadirachtin 50 g/l SL | ... | NeemAzal-F |
| Azadirachtin 10 g/l EC | ... | NeemAzal-T/S |
| Brodifacoum 0.005% RB | ... | Klerat Pellets, Klerat Wax Blocks |
| Buprofezin 10% WP | ... | Applaud 10 WP |
| Carbaryl 85% WP | ... | Ceypetco Carbaryl 85% WP, Mackwin, Oawin, Sevin 85 WP, Sevin 85 S, Venus |
| Carbaryl 480 g/l SC | ... | Sevin XLR |
| Carbofuran 3% GR | ... | Baur's Carbofuran 3G, Bowncer, Cabufudan 3G, Carbofuran, CG Carbofuran, Chinufur, Curaterr 3% G, Finchem Carbofuran, |
| | ... | Furacarb 3G, Furadan 3G, Harfurdan, Kicker, Kilater, Licocarb, Mackwoods Carbofuran, Poloran, Polydan 3% G, |
| | ... | Terminator 3% G, Ureka, Victor 300 |
| Carbosulfan 200 g/l SC | ... | Marshal 20 SC |
| Chlorfluazuron 50 g/l EC | ... | Atabron 5 EC |
| Chlorpyriphos 200 g/l EC | ... | Commando, Chlorpyrifos, Chlorban, Cyren 20, Dursban, Finfos 20, Mackfos, Pyrinex 20 EC |
| Chlorpyriphos 400 g/l EC | ... | Chlorifos 400, Amichlor, Ceyphos 40 EC, CG Rider, Chikara, Chlorban Plus, Chlorpyrifos, Chlorpyrifos 40%, Commando, Cyren |
| | ... | 40, Dadas, Dragon, Emphos 40 EC, Finfos 40, Harcron, Inciban, Judo 40 EC, Leedorban, Lorsban 40 EC, Morifos 40, Nokia, |
| | ... | Oruga-400, Pattaas, Pestban Super, Pyriban, Pyrimack, Pyrinex 400, Rambo, Sando, Tiger 400, Unifos 400, Vitashield 40 EC |
| Chromafenozide 50 g/l SC | ... | Matric 5% SC |
| Coumatetralyl 0.037% RB | ... | Racumin Ready Bait, Racumin Tracking Powder |
| Cyromazine 75% WP | ... | Trigard 75 WP |
| Dazomat 97% GR | ... | Basamid Granular |
| Deltamethrin 25 g/l EC | ... | Decis, Valid 2.5 EC |
| Diazinon 5% GR | ... | Basudin 5G, Dinoser 5% G, Diodin 5G, Gallent 5% G, Surya 5% G |
| Diazinon 500 g/l EW/EC | ... | Basudin 50 EC, Dazino, Diazin, Diazinon 50 EC, Diazol, Diodin 50 EC, Gallent, Oasinon, Surya 50% EC, Vitanon 50 EC |
| Dimethoate 400 g/l EC | ... | Agromet EC 40%, Amithioate, Baurs's Dimethoate, Boxer 40, Dem-2, Dimethoate, CIC Dimethoate 40 EC, |
| | ... | Dimitox, Direkter, Disu, Dora 40, Fezmet 40, Harcros Demro, Jivron, Lara, Mackthoate, Oasis Dimethoate |
| | ... | 40%, Perfekt, Perfekthion, Protect 40, Rogor 40 EC, Rogrow, Turbo 40 EC, Vithoate 40 EC, |
| Difenacoum 0.005% RB | ... | Fentrol |

| *Insecticides* | | *Pesticide Recommendations* |
|---|---|---|
| Difethialone 0.0025% RB | ... | Baraki Pellets, Baraki Wax Blocks |
| Dinotefuran 20% WP | ... | Oshin |
| Emamectin Benzoate 5% SG | ... | Proclaim 5 SG |
| Esfenvalerate 75 g/l EC | ... | Sumicidin Plus, Sumicidin Super |
| Etofenprox 100 g/l EC | ... | Trebon 10 EC |
| Ethiprole 100 g/l SC | ... | Curbix 100 SC |
| Fenamiphos 5% GR | ... | Nemacur 5% G |
| Fenobucarb 500 g/l EC | ... | Hayleis Agro BPMC, Bassa 50, Baurs BPMC, Baur's BPMC 50% BPMC, BPMC 50 EC, Dozerr 50 EC, |
| | ... | Finchem BPMC, Keedan, Keedawa, Kricket, Mackarb, Moricarb, Oasis BPMC 50%, Unipower BPMC 50%, |
| | ... | Vitagro 50 EC, Baycarb EC 50% |
| Fenthion 500 g/l EC | ... | Lebaycid EC 50% |
| Fenvalerate 200 g/l EC | ... | Sumifen 20 EC |
| Fipronil 0.3% GR | ... | Prince GR |
| Fipronil 50 g/l SC | ... | Regent 50 SC |
| Flocoumafen 0.005% RB | ... | Storm |
| Flufenoxuron 100 g/l DC | ... | Cascade |
| Formothion 330 g/l EC | ... | Anthio 33 |
| Hexythiazox 10% WP | ... | Nissorun |
| Imidacloprid 70% WS | ... | Gaucho 70 WS |
| Imidacloprid 70% WG | ... | Provado |
| Imidacloprid 200 g/l OD | ... | Admire O-TEQ (Not yet registered) |
| Imidacloprid 200 g/l SL | ... | Admire SL 200, Kohinor, Talent SL 200, Tatamida |
| Indoxacarb 150 g/l EC | ... | Avaunt |
| Lufenuron 50 g/l EC | ... | Match 50 EC |
| Margosa Seed Powder 35 g/l SL | ... | Paribadra |
| Metaflumizone 240 g/l SC | ... | Alverde |
| Metaldehyde 3% RB | ... | Cascade Condor |
| Metaldehyde 4% RB | ... | Snail-X |
| Metaldehyde 6% RB | ... | Meta Ready-for-Use |

| | | |
|---|---|---|
| Methomyl 40% SP | ... | Lannate 40% SP |
| Methoxyfenozide 240 g/l SC | ... | Runner SC 240 |
| Novaluron 100 g/l EC | ... | Rimon 10 EC |
| Permethrin 240 g/l EC | ... | Ambush 25 EC |
| Phenthoate 5% DP | ... | Elsan 5% Dust, Kemsan DP, Leader 5% Dust, Mackso 5% Dust, Pensan Dust, Penta 5% Dust |
| Phenthoate 500 g/l EC | ... | Cidial, Elsan 50, Enthosan, Kemidol 500, Kemsan 50, Leader, Mackso, Pensan 50 EC, Penta, Phenthoate 50 EC, Visan 50 EC |
| Phosalone 350 g/l EC | ... | Zolone 35 EC |
| Pirimiphos-methyl 500 g/l EC | ... | Actellic 50 EC |
| Protein Bait | ... | LakGro Bait |
| Profenophos 500 g/l EC | ... | Baurcron, Calcron 50 EC, C-Cron, Flint, Gemini, Peron, Polycron, Selecron 50 EC, Venofos 50 EC |
| Prothiophos 500 g/l EC | ... | CG Tokuthion 50% EC |
| Sulphur 80% WP | ... | CG sulphur, Exsul, Morisal, Sulphotox, Sulphur 80 WP, Sulphur 80% Super Guard 800, Suvisul, Thiolux, Thiosan. |
| Sulphur 80% WG | ... | Haymite WG 80%, Kumulus DF, Macksul Microthiol Special, Suvisal DF 80%, Thiovit jet |
| Quinalphos 250 g/l EC | ... | Ekalux 25 EC, Flytox, Keufo, Kinalux, Kuinal 25 EC, Quick, Quintox |
| Spinosad 25 g/l SC | ... | Success |
| Spinosad 450 g/l SC | ... | Tracer 45 SC |
| Tebufenozide 200 g/l SC | ... | Mimic 20 F |
| Thiacloprid 240 g/l SC | ... | Calypso SC 240 |
| Thiamethoxam 25% WG | ... | Actara 25 WG |
| Thiamethoxam 70% WS | ... | Cruiser 70 WS |
| Thiocyclam (hydrogen oxalate) 50% SP | ... | Evisect-S (Not yet registered) |
| Thiocyclam (hydrogen oxalate) 4% GR | ... | (Not yet registered) |
| Thiodicarb 375 g/l SC | ... | Larvin 375 F |

| No. | Name of the Disease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | Application spplication (Product/ha) | PHI (Days) | Remarks |
|---|---|---|---|---|---|---|---|
| **01.** | **CROP : RICE** | | | | | | |
| | **Blast** | Edifenphos 300 g/l EC | 25 ml | 800-1000 ml | 7-8 | 14 | |
| | *Magneporthae grisea* | Kasugamycin 20 g/1 SL | 15 ml | 480-600 ml | 5-10 | 14 | |
| | | Tebuconazole 250 g/1 EW | 6 ml | 192-240 ml | 7-10 | 21 | |
| | | Isoprothiolane 400 g/l EC | 12.5 ml | 400-500 ml | 7-10 | 14 | |
| | | Carbendazim 50% WP/WG | 7 g | 224-280 g | 10-14 | 14 | |
| | | Carbendazim 500 g/1 SC | 7 ml | 224-280 ml | 10-14 | 14 | |
| | | Kasugamycin 12 g/1 + Fthalide 150 g/1 SL | 12.5 ml | 500 ml | 5-10 | 14 | |
| | | Tricyclazole 75% WP | 6 g | 192-240 g | 10-14 | 14 | |
| | | Tricyclazole 75% WP | 2-4 g/kg see | 200-400 g (100 kg of seed) | - | - | |
| **02.** | **Sheath blight** | Tebuconazole 250 g/l EW | 6ml | 192-240 l | 7-10 | 21 | Fungicide spray must be directed to sheaths of the crop. |
| | *Rhizoctonia solani* | Pencycuron 25% WP | 20 g | 640-800 g | 7-14 | 14 | |
| | | Hexaconazole 50 g/l EC | 20 ml | 640-800 ml | 7-14 | 14 | |
| | | Epoxiconazole 125 g/l + Carbendazim 125 g/l EC | 15 ml | 480-600 ml | 7-14 | 14 | |
| | | Thiophanate-methyl 70% WP | 10 g | 320-400 g | 7-14 | 21 | |
| | | Propiconazole 250 g/l EC | 10 ml | 320-400 ml | 7-14 | 14 | |
| | | Flutolanil 50% WP | 20 g | 900-1300 ml | 7-14 | 14 | |
| **CROP: ALL CROPS (OTHER THAN RICE)** | | | | | | | |
| **03.** | **Damping-off, foot rot and root rot** | **For seed treatment :** | | | | | |
| | *Pythium* spp. | Captan 50% WP | | | | | Seed treatment should be done just before seeding. |
| | *Phytophthora* spp. | Small seeds | 6.0 g/ kg | | | | |
| | *Rhizoctonia* spp. | Large seeds | 3.0 g/ kg | | | | |
| | *Sclerotium* spp. | Captan 80% WP | | | | | |
| | *Fusarium* spp. | Small seeds | 4.0 g/ kg | | | | |
| | | Large seeds | 2.0 g/ kg | | | | |

| No. | Name of the Disease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | Application spplication (Product/ha) | PHI (Days) | Remarks |
|---|---|---|---|---|---|---|---|
| | | Thiram 80% WP | | | | | |
| | | Small seeds | 5 g/ kg | | | | |
| | | Large seeds | 2.0 g/ kg | | | | |
| | | Thiophanate-methyl 50% + Thiram 30% WP | | | | | |
| | | Small seeds | 4.0 g/ kg | | | | |
| | | Large seeds | 2.0 g/ kg | | | | |
| **04.** | **Damping-off, foot rot and root rot** | **For soil treatment:** | | | | | Most of the soil borne pathogens could be eleminated by burning or solarization of nursery beds. |
| | *Pythium* spp. | Captan 50% WP Captan | 60 g/50 l/10 $m^2$ | - | 6-8 | 14 | |
| | *Phytophthora* spp. | 80% WP Thiram 80% WP | 40 g/50 l/10 $m^2$ | - | 6-8 | 14 | Captan, Thiram, Chlorothalonil and Dazomet are broad spectrum fungicides. Use these fungicides if the causal fungus is not identified. Thiophanate-methyl is highly effective on *Fusarium* spp. *Sclerotium rolfsii* but it is not effective on *Pythium* spp. and *Phytophthora* spp. |
| | *Rhizoctonia* spp. | Chlorothalonil 75% WP | 70 g/50 l/10 $m^2$ | - | 6-8 | 14 | |
| | *Sclerotium* spp. | Chlorothalonil 500 g/l SC | 60 g/50 l/10 $m^2$ | - | 7-10 | 14 | |
| | *Fusarium* spp. | Thiophanate-methyl 70% WP | 90 ml/50 l/10 $m^2$ | - | 7-10 | 14 | |
| | *Macrophomina* spp. | Thiophanate-methyl 50% + Thiram 30% WP | 30 g/50 l/10 $m^2$ | - | 10-12 | 14 | |
| | | Flutolanil 50% WP | 50 g/50 l/10 $m^2$ | - | 7-10 | 14 | |
| | | Dazomet 97% GR | 30 g/50 l/10 $m^2$ | - | 10-12 | 14 | |
| | | (Soil fumigant) | 200-300 g/10 $m^2$ | - | - | - | Soil should be treated with Flutolanil 3 days before seed sowing. Soil treatments in the field are recommended only as spot application. Treat the soil with Dazomet 14 days before planting and loosen the soil 4-8 days after treatment. This should be done at regular intervals until traces of Dazomet disappear. |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 5. | **Anthracnose** *Colletotrichum* spp. *Gleosporium* spp. | Copper 50% WP | 40 g | 1280-1600 g | 2000-2400 g | 2800-3200 g | 6-8 | 14 | |
| | | Copper 37.5% WG | 50 g | 1600-2000 g | 2500-3000 g | 3500-4000 g | 6-8 | 14 | |
| | | Copper 362 g/l SC | 30 ml | 960-1200 ml | 1500-1800 ml | 2100-2400 ml | 7-10 | 14 | |
| | | Mancozeb 80% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Mancozeb 75% WG | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Mancozeb 480 g/l SC | 40 ml | 1280-1600 ml | 2000-2400 ml | 2800-3200 ml | 7-10 | 14 | |
| | | Maneb 80% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Thiophanate-methyl 70% WP | 6 g | 190-240 g | 300-360 g | 420-480 g | 10-12 | 14 | |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | 260-320 ml | 400-480 ml | 560-640 ml | 10-12 | 14 | |
| | | Carbendazim 50% WP/WG | 7 g | 225-280 g | 350-420 g | 490-560 g | 10-14 | 14 | |
| | | Carbendazim 500 g/l SC | 7 ml | 225-280 ml | 350-420 ml | 490-560 ml | 10-14 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | 960-1200 ml | 1500-1800 ml | 2100-2400 ml | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Propiconazole 250 g/l EC | 10 ml | 320-400 ml | 500-600 ml | 700-800 ml | 14-21 | 21 | |
| | | Fluzilazole 400 g/l EC | 8 ml | 260-320 ml | 400-480 ml | 560-640 ml | 7-10 | 14 | |
| | | Pyraclostrobin 250 g/l EC | 8 ml | 260-320 ml | 400-480 ml | 560-640 ml | 7-10 | 14 | |
| | | Difenoconazole 150 g/l + Propiconazole 150 g/l EC | 8 ml | 260-320 ml | 400-480 ml | 560-640 ml | 14-21 | 21 | |
| 06. | **Downy mildew** *Peronospora* spp. *Pseudoperonospora* spp. | Captan 50% WP Captan 80% WP Captan 480 g/l SC Copper 50% WP | 20 g<br>12.5 g<br>20 ml | 640-800 g<br>400-500 g<br>640-800 ml | 1000-1200 g<br>625-750 g<br>1000-1200 ml | 1400-1600 g<br>825-1000 g<br>1400-1600 ml | 6-8<br>6-8<br>6-8 | 14<br>14<br>14 | Copper containing fungicides are not recommended for cucurbits. |
| | | Copper 37.5% WG | 40 g | 1280-1600 g | 2000-2400 g | 2800-3200 g | 6-8 | 14 | |
| | | Mancozeb 80% WP | 50 g | 1600-2000 g | 2500-3000 g | 3500-4000 g | 6-8 | 14 | |
| | | Mancozeb 75% WG | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Maneb 80% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Mancozeb 64% + Metalaxyl 8% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Propineb 56% + Oxadixyl 10% WP | 12.5 g | 400-500 g | 625-750 g | 875-1000 g | 12-16 | 14 | |
| | | Propineb 70% WP | 12.5 g | 400-500 g | 625-750 g | 875-1000 g | 12-16 | 14 | |
| | | Valiphenal 6% + Mancozeb 60% WG | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | | 40 g | 1280-1600 g | 2000-2400 g | 2800-3200 g | 7-10 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | Propamocarb 607 g/l SL | 30 ml | 960-1200 ml | 1500-1800 ml | 2100-2400 ml | 7-10 | 14 | |
| | | Pyraclostrobin 250 g/l EC | 8 ml | 260-320 ml | 400-480 ml | 560-720 ml | 7-10 | 14 | |
| | | Metiram 70% WG | 40 g | 1280-1600 g | 2000-2400 g | 2800-3200 g | 7-10 | 14 | |
| 07. | **Powdery mildew** *Sphaerotheca* spp. *Oidiopsis* spp. *Leveillua* spp. *Erysiphe* spp. *Podaspharea* spp. | Bitertanol 300 g/l EC | 10 ml | 320-400 ml | 500-600 ml | 700-800 ml | 14-21 | 14 | Sulphur containing fungicides are not recommended for |
| | | Carbendazim 50% WP/WG | 7 g | 225-280 g | 350-420 g | 490-560 g | 10-14 | 14 | |
| | | Carbendazim 500 g/l SC | 7 ml | 225-280 ml | 350-420 ml | 490-560 ml | 10-14 | 14 | |
| | | Thiophanate-methyl 70% WP | 6 g | 190-240 g | 300-360 g | 420-480 g | 10-12 | 14 | |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | 260-320 ml | 400-480 ml | 560-720 ml | 10-12 | 14 | |
| | | Sulphur 80% WP/WG | 50 g | 1600-2000 g | 2500-3000 g | 3500-4000 g | 6-8 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | 960-1200 ml | 1500-1800 ml | 2100-2400 ml | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| 08. | **Leaf spot** *Cercospora* spp. *Mycosphaerella* spp. *Alternaria* spp. *Septoria* spp. | Bitertanol 300 g/l EC Copper | 10 ml | 320-400 ml | 500-600 ml | 700-800 ml | 14-21 | 14 | Copper containing fungicides are not recommended for cucurbits. |
| | | 50% WP | 40 g | 1280-1600 g | 2000-2400 g | 2800-3200 g | 6-8 | 14 | |
| | | Copper 37.5% WG | 50 g | 1600-2000 g | 2500-3000 g | 3500-4000 g | 6-8 | 14 | |
| | | Mancozeb 80% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Mancozeb 75% WG Maneb | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | 80% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Propineb 70% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Tebuconazole 250 g/l EW | 3.5 ml | 115-140 ml | 175-210 ml | 245-280 ml | 14-21 | 21 | |
| | | Thiophanate-methyl 70% WP | 6 g | 190-240 g | 300-360 g | 420-480 g | 10-12 | 14 | |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | 260-320 ml | 400-480 ml | 560-720 ml | 10-12 | 14 | |
| | | Propiconazole 250 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | 245-280 ml | 14-21 | 21 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | 960-1200 ml | 1500-1800 ml | 2100-2400 ml | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| 09. | **Rust** *Puccinia* spp. *Uromyces* spp. | Bitertanol 300 g/l EC | 10 ml | 320-400 ml | 500-600 ml | 700-800 ml | 14-21 | 14 | Sulphur & Copper containing fungicides are not recommended for cucurbits. |
| | | Tebuconazole 250 g/l EC | 3.5 ml | 112-140 ml | 175-210 ml | 245-280 ml | 14-21 | 21 | |
| | | Mancozeb 80% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Mancozeb 75% WG | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Sulphur 80% WP/WG | 50 g | 1600-2000 g | 2500-3000 g | 3500-4000 g | 6-8 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | 960-1200 ml | 1500-1800 ml | 2100-2400 ml | 7-10 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | Chlorothalonil 75% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Copper 50% WP | 40 g | 1280-1600 g | 2000-2400 g | 2800-3200 g | 6-8 | 14 | |
| | | Copper 37.5% WG | 50 g | 1600-2000 g | 2500-3000 g | 3500-4000 g | 6-8 | 14 | |
| | **CROP: BEANS** | | | | | | | | |
| **10.** | **Angular leaf spot** *Isariopsis griseola* | Tebuconazole 250 g/l EW | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | Use any one chemical for all three diseases followed by Propineb 70% WP after 7-10 days. |
| | | Propiconazole 250 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | | Fenbuconazole 250 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | | Hexaconazole 50 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | | **Each followed by** Propineb 70% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| **11.** | **Rust** *Uromyces appendiculatus* | Propiconazole 250 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | Last application should be done one week before flowering. |
| | | Fenbuconazole 250 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | | Hexaconazole 50 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | | Tebuconazole 250 g/l EW | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | | **Each followed by** Propineb 70% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| **12.** | **Anthracnose** *Colletotrichum lindemuthianum* | Bitertanol 300 g/l EC | 10 ml | 320-400 ml | 500-600 ml | | 14-21 | 14 | |
| | | Propiconazole 250 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | | Fenbuconazole 250 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | | Hexaconazole 50 g/l EC | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | | **Each followed by** Propineb 70% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | **CROP: CARROT** | | | | | | | | |
| **13.** | **Alternaria blight** *Alternaria* spp. | Mancozeb 80% WP | 20 g | 640-800 g | | | 7-10 | 14 | |
| | | Mancozeb 75% WG | 20 g | 640-800 g | | | 7-10 | 14 | |
| | | Maneb 80% WP | 20 g | 640-800 g | | | 7-10 | 14 | |
| | | Propineb 70% WP | 20 g | 640-800 g | | | 7-10 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | 960-1200 ml | | | 7-10 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | Chlorothalonil 75% WP | 20 g | 640-800 g | | | 7-10 | 14 | |
| | **CROP: CABBAGE** | | | | | | | | |
| **14.** | **Ring spot** | Tebuconazole 250 g/l EW | 3.5 ml | 115-140 ml | | | 21 | 21 | Apply to the entire foliage |
| | *Mycosphaerella brassicicola* | Epoxiconazole 125 g/l SC | 3.5 ml | 115-140 ml | | | 21 | 21 | and repeat if necessary at 3 |
| | | Propiconazole 250 g/l EC | 3.5 ml | 115-140 ml | | | 21 | 21 | week intervals. |
| | | Fenbuconazole 250 g/l EC | 3.5 ml | 115-140 ml | | | 21 | 21 | Strictly adhere to |
| | | Hexaconazole 50 g/l EC | 3.5 ml | 115-140 ml | | | 21 | 21 | recomended rates to avoid phytotoxicity. |
| | **CROP: CHILLI** | | | | | | | | |
| **15.** | **Foot rot/fungal wilt** | Thiophanate-methyl 70% WP | 30 g/50 l/10 $m^2$ | | | | 10-12 | 14 | Drench the soil as spot |
| | *Sclerotium rolfsii* | Thiram 80% WP | 70 g/50 l/10 $m^2$ | | | | 10-12 | 14 | application at the |
| | *Fusarium solani* | Thiophanate-methyl 50% + Thiram 30% WP | 50 g/50 l/10 $m^2$ | | | | 7-10 | 14 | appearance of symptoms |
| **16.** | **Blossom blight** | Copper 50% WP | 40 g | 1280-1600 g | 2000-2400 g | | 6-8 | 14 | |
| | *Choanephora* spp. | Copper 37.5% WG | 50 g | 1600-2000 g | 2500-3000 g | | 6-8 | 14 | |
| | | Mancozeb 80% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Mancozeb 75% WG | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Maneb 80% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Propineb 70% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Chlorothalonil 500 g/1 SC | 30 ml | 960-1200 ml | 1500-1800 ml | | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | **CROP: COWPEA (VEGETABLE)** | | | | | | | | |
| **17.** | **Ashy stem blight** | Tebuconazole 250 g/1 EW | 3.5 ml | 115-140 ml | | | 14-21 | 21 | |
| | *Macrophomina phaseolina* (*Rhizoctonia bataticola)* | | | | | | | | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | **CROPS: CRUCIFERS AND CUCURBITS** | | | | | | | | |
| **18.** | **Alternaria blight** | Copper 50% WP | 40 g | 1280-1600 g | 2000-2400 g | 2800-3200 g | 6-8 | 14 | Copper containing |
| | *Alternaria* spp. | Copper 37.5% WG | 50 g | 1600-2000 g | 2500-3000 g | 3500-4000 g | 6-8 | 14 | fungicides are not |
| | | Mancozeb 80% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | recommended for cucurbits. |
| | | Mancozeb 75% WG Maneb | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | 80% WP | 20 gl | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Propineb 70% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | | Thiram 80% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 6-8 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | 960-1200 ml | 1500-1800 ml | 2100-2400 ml | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 7-10 | 14 | |
| | **CROP: GHERKIN** | | | | | | | | |
| **19.** | **Downy mildew** | Mancozeb 64% + | | | | | | | |
| | *Pseudoperonospora* spp. | Metalaxyl 8% WP | 25 g | 800-1000 g | 1250-1500 g | 1750-2000 g | 14 | 14 | This systemic fungicide |
| | | **followed by either** | | | | | | | should be followed by |
| | | Captan 80% WP or | 12.5 g | 400-500 g | 625-750 g | 875-1000 g | 6-8 | 14 | Captan after 7-10 days. |
| | | Captan 50% WP or | 20 g | 640-800 g | 1000-1200 g | 1400-1600 g | 6-8 | 14 | |
| | | Captan 480 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | 1400-1600 ml | 6-8 | 14 | |
| | **CROP: GINGER** | | | | | | | | |
| **20.** | **Rhizome rot** | Captan 50% WP | 60 g/50 l/10 $m^2$ | | | | 6-8 | 14 | Drench the soil as spot |
| | *Pythium* spp. | Captan 80% WP | 40 g/50 l/10 $m^2$ | | | | 6-8 | 14 | application at the ppearance |
| | | Thiram 80% WP | 70 g/50 l/10 $m^2$ | | | | 6-8 | 14 | of symptoms. |
| | **CROP: GROUNDNUT** | | | | | | | | |
| **21.** | **Foot rot/Root rot** | Thiophanate-methyl 70% WP | 30 g/50 l/10 $m^2$ | | | | 10-12 | 14 | Drench the soil as spot |
| | *Sclerotium rolfsii* | Thiram 80% WP | 70 g/50 l/10 $m^2$ | | | | 6-8 | 14 | application at the |
| | *Aspergillus niger* | Thiophanate-methyl 50% + | | | | | | | appearance of symptoms. |
| | *Fusarium oxysporum* | Thiram 30% WP | 50 g/50 l/10 $m^2$ | | | | 7-10 | | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | **CROP: ONION** | | | | | | | | |
| **22.** | **Bulb rot/ Seedling blight**<br>*Fusarium* spp.<br>*Botrytis* spp.<br>*Sclerotium* spp.<br>*Pythium* spp.<br>*Phytophthora* spp. | **For bulb treatment**<br>Thiophanate-methyl 70% WP<br>Thiram 80% WP<br>Thiophanate-methyl 50% + Thiram 30% WP | 20 g<br>15 g<br>18 g | | | | | | Immerse bulbs for 30 min. before planting. Fungicides containing Thiram should be used if the causal fungus is not identified. Thiophanate-methyl is highly effective on *Fusarium* spp. and *Sclerotium rolfsii*. |
| | | **For soil treatment**<br>Thiram 80% WP | 70 g/50 l/10 $m^2$ | | | | 6-8 | 14 | |
| **23.** | **Anthracnose**<br>*Colletotrichum gloeosporioides* | Thiophanate-methyl 500 g/l SC | 8 ml | | 260-320 ml | | 10-12 | 14 | Thiophanate-methyl should be followed by Chlorothalonil or Mancozeb after 7-10 days. |
| | | Thiophanate-methyl 70% WP | 6 g | | 200-240 g | | 10-12 | 14 | |
| | | **Followed by** either | | | | | 7-10 | 14 | |
| | | Chlorothalonil 500 g/l SC or | 30 ml | | 960-1200 ml | | 7-10 | 14 | |
| | | Chlorothalonil 75% WP or | 20 g | | 640-800 g | | 7-10 | 14 | |
| | | Mancozeb 80% WP/75% WG | 20 g | | 640-800 g | | | | |
| | **CROPS : ONION & LEEKS** | | | | | | | | |
| **24.** | **Purple blotch**<br>*Alternaria porri* | Chlorothalonil 500 g/l SC | 30 ml | | 960-1200 ml | | 7-10 | 14 | Tebuconazole should be followed by Propineb after 7-10 days. Tebuconazole could be phytotoxic to **leeks.** |
| | | Chlorothalonil 75% WP | 20 g | | 640-800 g | | 7-10 | 14 | |
| | | Copper 50% WP | 40 g | | 1280-1600 g | | 6-8 | 14 | |
| | | Copper 37.5% WG | 50 g | | 1600-2000 g | | 6-8 | 14 | |
| | | Mancozeb 80% WP | 20 g | | 640-800 g | | 7-10 | 14 | |
| | | Mancozeb 75% WG | 20 g | | 640-800 g | | 7-10 | 14 | |
| | | Maneb 80% WP | 20 g | | 640-800 g | | 7-10 | 14 | |
| | | Propineb 70% WP | 20 g | | 640-800 g | | 7-10 | 14 | |
| | | Pyraclostrobin 250 g/l EC | 8 ml | | 260-320 ml | | 7-10 | 14 | |
| | | Tebuconazole 250 g/l EW & | 3.5 ml | | 115-140 ml | | 14-21 | 21 | |
| | | **Followed by**<br>Propineb 70% WP | 20 g | | 640-800 g | | 7-10 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | **CROP: POTATO (SEED POTATO)** | | | | | | | | |
| **25.** | **Storage dry rot** *Fusarium solani* | Thiophanate-methyl 70% WP | 1 kg/mt | | | | | | Dust seed potatoes after harvest within 10 days before storage. |
| | | Thiophanate-methyl 50% + Thiram 30% WP | 1 kg/mt | | | | | | |
| | **CROPS: POTATO & TOMATO** | | | | | | | | |
| **26.** | **Early blight** *Alternaria solani* | Chlorothalonil 500 g/l SC | 30 ml | 960-1200 ml | 1500-1800 ml | | 7-10 | 14 | Start spraying after observing first symptoms. |
| | | Chlorothalonil 75% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Mancozeb 80% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Mancozeb 75% WG Maneb | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | 80% WP Propineb 70% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Mancozeb 64% + Metalaxyl 8% WP | 25 g | 800-1000 g | 1250-1500 g | | 14 | 14 | |
| | | Captan 50% WP | 20 g | 640-800 g | 1000-1200 g | | 6-8 | 14 | |
| | | Captan 80% WP | 12.5 g | 400-500 g | 625-750 g | | 6-8 | 14 | |
| | | Captan 480 g/l SC | 20 ml | 640-800 ml | 1000-1200 ml | | 6-8 | 14 | |
| | | Copper 50% | 40 g | 1280-1600 g | 2000-2400 g | | 6-8 | 14 | |
| | | WP Copper 21% + Mancozeb 20% WP | 25 g | 800-1000 g | 1250-1500 g | | 6-8 | 14 | |
| | | Pyraclostrobin 250 g/l EC | 8 ml | 260-320 ml | 400-480 ml | | 7-10 | 14 | |
| | | Metiram 57% + Cymoxanil 4.8% WP | 20 g | 640-800 g | 1000-1200 g | | 10-12 | 14 | Difenoconazole is recommended only for tomato |
| | | Copper 37.5% WG | 50 g | 1600-2000 g | 2500-3000 g | | 6-8 | 14 | |
| | | Difenoconazole 250 g/l EC | 15 ml | 480-550 ml | 650-750 ml | | 14 | 14 | |
| | | Mancozeb 60% WP + Dimethomorph 9% | 50 g | 1600-2000 g | 2500-3000 g | | 12-14 | 14 | |
| | | Mancozeb 64% + Metalaxyl 4% WG | 25 g | 800-1000 g | 1250-1500 g | | 14 | 14 | |
| | | Isoprothiolane 400 g/l EC | 25 ml | 800-1000 ml | 1250-1500 ml | | 7-10 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 27. | **Late blight** *Phytophthora infestans* | Chlorothalonil 500 g/l SC | 30 ml | 960-1200 ml | 1500-1800 ml | | 7-10 | 14 | Start spraying after observing first symptoms. Initial spraying is needed when environmental conditions become favourable for disease development. * Curative/eradicant fungicides should be sprayed only twice for a crop. Never apply systemic fungicides continuously. |
| | | Chlorothalonil 75% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Mancozeb 80% WP/75% WG | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Maneb 80% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | Propineb 70% WP | 20 g | 640-800 g | 1000-1200 g | | 7-10 | 14 | |
| | | * Mancozeb 64% + Metalaxyl 8% WP | 25 g | 800-1000 g | 1250-1500 g | | 14 | 14 | |
| | | * Propineb 56% + Oxadixyl 10% WP | 30 g | 960-1200 g | 1500-1800 g | | 14 | 14 | |
| | | * Mancozeb 64% + Metalaxyl 4% WG | 25 g | 800-1000 g | 1250-1500 g | | 14 | 14 | |
| | | * Propamocarb 607 g/l SL | 40 ml | 1280-1600 ml | 2000-2400 ml | | 14 | 14 | |
| | | * Mancozeb 56% + Oxadixyl 10% WP | 30 g | 960-1200 g | 1500-1800 g | | 14 | 14 | |
| | | Metiram 70% WG | 40 g | 1280-1600 g | 2000-2400 g | | 10-14 | 14 | |
| | | * Metiram 57% + Cymoxanil 4.8% WP | 20 g | 640-800 g | 1000-1200 g | | 14 | 14 | |
| | | Copper 50% WP | 40 g | 1280-1600 g | 2000-2400 g | | 6-8 | 14 | |
| | | Copper 37.5% WG | 50 g | 1600-2000 g | 2500-3000 g | | 6-8 | 14 | |
| | | Folpet 50% WP | 25 g | 800-1000 g | 1250-1500 g | | 6-8 | 14 | |
| | | * Mancozeb 60% + Dimethomorph 9% WP | 50 g | 1600-2000 g | 2500-3000 g | | 12-14 | 14 | |
| | | Pyraclostrobin 250 g/l EC | 8 ml | 260-320 ml | 400-480 ml | | 7-10 | 14 | |
| | | Isoprothiolane 400 g/l EC | 25 ml | 800-1000 ml | 1250-1500 ml | | 7-10 | 14 | |
| 28. | **Foot rot/Root rot** *Rhizoctonia* spp. *Fusarium* spp. | Pencycuron 25% WP | 100 g/50 l/10 $m^2$ | | | | | 14 | Drench soil as spot application when symptoms appear. |
| | | Thiram 80% WP | 70 g/50 1/10 $m^2$ | | | | | 14 | |
| | **CROP: CITRUS** | | | | | | | | |
| 29. | **Shoestring root rot** *Armillaria mellea* | Copper 50% WP | 200 g/50 1/10 $m^2$ | | | | 6-8 | 14 | Drench the soil within dripline at the appearance of symptoms. |
| | | Copper 37.5% WG | 250 g/50 1/10 $m^2$ | | | | 6-8 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **30.** | **Foot rot/Gummosis** | Copper 50% WP | 200 g/50 1/10 $m^2$ | | | | 6-8 | 14 | Drench the soil within |
| | *Phytophthora parasitica* | Copper 37.5% WG | 250 g/50 1/10 $m^2$ | | | | 6-8 | 14 | dripline at the appearance of symptoms. |
| **31.** | **Scab** | Copper 50% WP | 40 g | 1280-1600 g | 2000-2400 g | | 6-8 | 14 | |
| | *Elsinoe fawcetti* | Copper 37.5% WG | 50 g | 1600-2000 g | 2500-3000 g | | 6-8 | 14 | |
| **32.** | **Pink stem** | Tebuconazole 250 g/l EW | 3.5 ml | 115-140 ml | 175-210 ml | | 14-21 | 21 | |
| | *Corticium* | Bitertanol 300 g/l EC | 10 ml | 320-400 ml | 500-600 ml | | 6-8 | 14 | |
| | *salmonicolor* | **Each followed by either** | | 1280-1600 g | 2000-2400 g | | | | |
| | | Copper 50% WP or | 40 g | 1600-2000 g | 2500-3000 g | | 6-8 | 14 | |
| | | Copper 37.5% WG | 50 g | | | | 6-8 | 14 | |
| | **CROP: GRAPE** | | | | | | | | |
| **33.** | **Shoestring root rot** | Copper 50% WP | 200 g/50 1/10 $m^2$ | | | | 6-8 | 14 | Drench soil at the |
| | *Armillaria mellea* | Copper 37.5% WG | 250 g/50 1/10 $m^2$ | | | | 6-8 | 14 | appearance of symptoms. |
| **34.** | **Shoestring root rot** | Copper 50% WP | 40 g | | | | 6-8 | 14 | Drench the soil within drip |
| | *Armillaria mellea* | Copper 37.5% WG | 50 g | | | | 6-8 | 14 | line at the appearance of symptoms. |
| | **CROPS: APPLE & PEAR** | | | | | | | | |
| **35.** | **Scab** | Tebuconazole 250 g/l EW | 3.5 ml | | | | 14-21 | 21 | Use either Tebuconazole or |
| | *Venturia inaequalis* | Bitertanol 300 g/l EC | 10 ml | | | | 14-21 | 21 | Bitertanol followed by |
| | (Apple) | **Each followed by:** | | | | | | | Maneb 80% WP. |
| | *Venturia prina* | Maneb 80% WP | 20 g | | | | 7-10 | 14 | |
| | (Pear) | | | | | | | | |
| **36.** | **Pink stem** | Tebuconazole 250 g/l EW | 3.5 ml | | | | 14-21 | 21 | - do- |
| | *Nectria cinnabarina* | Bitertanol 300 g/l EC | 10 ml | | | | 14-21 | 21 | |
| | | **Each followed by:** | | | | | | | |
| | | Maneb 80% WP | 20 g | | | | 7-10 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | **CROP : RAMBUTAN** | | | | | | | | |
| **37.** | **Powdery mildew** *Oidium* spp. | Sulphur 80% WP/WG | 50 g | | | | 14-21 | 14 | Repeat if necessary in 2 weeks. |
| | **CROP: STRAWBERRY** | | | | | | | | |
| **38.** | **Gray mold** *Botrytis cinerea* | Mancozeb 80% WP/75% WG | 20 g | | 800-1000 g | | 7-10 | 14 | Fungicide application should be started during flowering stage. |
| | | Maneb 80% WP | 20 g | | 800-1000 g | | 7-10 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | | 1200-1500 ml | | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | | 800-1000 g | | 7-10 | 14 | |
| **39.** | **Leaf spot** *Mycosphaerella fragariae* | Bitertanol 300 g/l EC | 10 ml | | 400-500 ml | | 14-21 | 14 | |
| | | Tebuconazole 250 g/l EW | 3.5 ml | | 140-175 ml | | 14-21 | 21 | |
| | | **Each followed by**: | | | | | | | |
| | | Propineb 70% WP | 20 g | | 800-1000 g | | 7-10 | 14 | |
| **40.** | **Leaf blight** *Phomopsis obscurans (Sys. Dendrophoma obscurans* | Tebuconazole 250 g/l EW | 3.5 ml | | 140-175 ml | | 14-21 | 21 | Use either Tebuconazole or Bitertanol followed by Propineb 70% WP. |
| | | Bitertanol 300 g/l EC | 10 ml | | 400-500 ml | | 14-21 | 14 | |
| | | **Each followed by:** | | | | | | | |
| | | Propineb 70% WP | 20 g | | 800-1000 g | | 7-10 | 14 | |
| **41.** | **Anthracnose** *Colletotrichum* spp. | Pyraclostrobin 250 g/l EC | 8 ml | | 320-400 ml | | 7-10 | 14 | |
| | | Thiophanate-methyl 70% WP | 6 g | | 240-300 g | | 10-12 | 14 | |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 320-400 ml | | 10-12 | 14 | |
| | **CROP: PAPAW** | | | | | | | | |
| **42.** | **Foot/Root/Stem rot** *Phythium* spp. *Phytophthora* spp. | Chlorothalonil 500 g/l SC | 90 ml/50 l/10 $m^2$ | | | | 7-10 | 14 | Drench around the base of the plant as spot application. |
| | | Copper 50% WP | 200 g/50 l/10 $m^2$ | | | | 6-8 | 14 | |
| | | Copper 37.5% WG | 250 g/50 l/10 $m^2$ | | | | 6-8 | 14 | |
| | | Mancozeb 64% + Metalaxyl 8% WP | 150 g/50 l/10 $m^2$ | | | | 12-16 | 14 | |
| | | Mancozeb 64% + Metalaxyl 4% WG | 150 g/50 l/10 $m^2$ | | | | 12-16 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| 43. | **Leaf spot** *Corynespora cassiicola* *Asperisporium cariene* | Mancozeb 80% WP | 20 g | | 1000-1600 g | | 6-8 | 14 | |
| | | Mancozeb 75% WG | 20 g | | 1000-1600 g | | 6-8 | 14 | |
| | | Maneb 80% WP | 20 g | | 1000-1600 g | | 6-8 | 14 | |
| | **CROP: GUAVA** | | | | | | | | |
| 44. | **Fruit canker** *Pestalotiopsis* spp. | Copper 50% WP | 40 g | | 2000-3200 g | | 6-8 | 14 | |
| | | Copper 37.5% WG | 50 g | | 2500-4000 g | | 6-8 | 14 | |
| 45. | **Anthracnose/Twig blight** *Colletotrichum* spp. *Gloeosporium* spp. | Copper 50% WP | 40 g | | 2000-3200 g | | 6-8 | 14 | |
| | | Copper 37.5% WG | 50 g | | 2500-4000 g | | 6-8 | 14 | |
| | **CROP: BANANA** | | | | | | | | |
| 46. | **Sigotoka leaf spots** *Mycosphaere lla musicola* **Codana leaf spot** *Codana musae* | Chlorothalonil 500 g/l SC | 30 ml | | 1250-3000 ml | | 6-8 | 14 | Fungicides are sprayed only during epidemic conditions. Contact and systemic fungicides are sprayed alternatively. |
| | | Chlorothalonil 75% WP | 20 g | | 1000-2000 g | | 6-8 | 14 | |
| | | Mancozeb 80% WP/ 75% WG | 20 g | | 1000-2000 g | | 6-8 | 14 | |
| | | Carbendazim 500 g/l SC | 7 ml | | 350-700 ml | | 10-14 | 14 | |
| | | Carbendazim 50% WP/WG | 7 g | | 350-700 g | | 10-14 | 14 | |
| | | Bitertanol 300 g/l EC | 10 ml | | 500-1000 ml | | 10-14 | 14 | |
| | | Tebuconazole 250 g/l EW | 3.5 ml | | 175-350 ml | | 10-14 | 14 | |
| | | Thiophanate-methyl 70% WP | 10 g | | 500-1000 g | | 10-14 | 14 | |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 400-800 ml | | 10-14 | 14 | |
| | | Propiconazole 250 g/l EC | 3.5 ml | | 175-350 ml | | 10-14 | 14 | |
| | | Isoprothiolane 400 g/l EC | 18 ml | | 900-1800 ml | | 7-10 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | **CROP: PINEAPPLE** | | | | | | | | |
| **47.** | **Heart/stem/root rot** *Phytopththora* spp. | Copper 50% WP | 200 g/50 l 10 $m^2$ | | | | 6-8 | 14 | Drench soil & plants with fungicide solution. |
| | | Copper 37.5% DP | 250 g/50 l/10 $m^2$ | | | | 6-8 | 14 | |
| | | Mancozeb 64% + Metalaxyl 8% WP | 150 g/50 l/10 $m^2$ | | | | 12-16 | 14 | |
| | | Mancozeb 64% + Metalaxyl 4% WG | 150 g/50 l/10 $m^2$ | | | | 12-16 | 14 | |
| | **CROP: POMEGRANATE** | | | | | | | | |
| **48.** | **Cercospora leaf/ fruit spot** *Cercospora punicae* | Mancozeb 75% WG | 20 g | | 800-1200 g | | 7-10 | 14 | Prior to fungicide spraying, prune & destroy diseased parts. |
| | | Mancozeb 80% WP | 20 g | | 800-1200 g | | 7-10 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | | 1200-1800 ml | | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | | 800-1200 g | | 7-10 | 14 | |
| | | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 10-12 | 14 | |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 320-480 ml | | 10-12 | 14 | |
| **49.** | **Anthracnose** *Colletotrichum gloeosporioides* | Mancozeb 80% WP | 20 g | | 800-1200 g | | 7-10 | 14 | |
| | | Mancozeb 75% WG | 20 g | | 800-1200 g | | 7-10 | 14 | |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 320-480 ml | | 10-12 | 14 | |
| | | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 10-12 | 14 | |
| | | Carbendazim 50% WP/WG | 7 g | | 280-420 g | | 10-12 | 14 | |
| | | Carbendazim 500 g/l SC | 7 ml | | 280-420 ml | | 10-12 | 14 | |
| | **DISEASE CONTROL IN POLY-HOUSES** | | | | | | | | |
| | **CROP: CUCUMBER** | | | | | | | | |
| **50.** | **Downy mildew** *Pseudoperonospora cubensis* | Captan 80% WP | 12.5 g | | 625-750 g | | 6-8 | 14 | Apply Captan as a preventive and Mancozeb + Metalaxyl after appearance of the disease. Do not |
| | | Mancozeb 64% + Metalaxyl 4% WG | 25 g | | 1200-1500 g | | 12-14 | 14 | |
| | | Mancozeb 64% + | | | | | | | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | Metalaxyl 8% WP | 25 g | | 1200-1500 g | | 12-14 | 14 | continuously apply systemic |
| | | Captan 480 g/l SC | 20 ml | | 1000-1200 ml | | 6-8 | 14 | fungicides and use Captan |
| | | Captan 50% WP | 20 g | | 1000-1200 g | | 6-8 | 14 | as alternate applications. Repeat fungicide application at 7-10 day intervals under severe conditions. |
| **51.** | **Powdery mildew** *Erysiphe cichoracearum* | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 10-14 | 14 | Use Chlorothalonil as a |
| | | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | preventive at 7-10 day |
| | | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | intervals. Apply |
| | | Bitertanol 300 g/l EC | 10 ml | | 500-600 ml | | 14-21 | 21 | Thiophanate-methyl after |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 400-480 ml | | 10-14 | 14 | appearance of the disease at 10-12 day intervals and alternate with Chlorothalonil. |
| **52.** | **Alternarial leaf spot** *Alternaria cucurmerina* | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | Repeat fungicide |
| | | Mancozeb 80% WP/75% WG | 20 g | | 1000-1200 g | | 7-10 | 14 | applications at 7-10 day |
| | | Maneb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | intervals during severe |
| | | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | conditions. |
| **53.** | **Anthracnose (fruits, leaves and stems)** *Colletotrichum lagenarium* | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | Apply fungicides once at |
| | | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | flowering as a preventive |
| | | Mancozeb 80% WP/75% WG | 20 g | | 1000-1200 g | | 7-10 | 14 | treatment. Repeat |
| | | Maneb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | application at 7-10 day |
| | | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 10-12 | 14 | intervals during favourable |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 400-480 ml | | 10-12 | 14 | environmental conditions for disease development. |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | **CROPS: TOMATO AND BELL PEPPER** | | | | | | | | |
| **54.** | **Damping-off** *Rhizoctonia* spp. *Pythium* spp. *Phytophthora* spp. *Fusarium* spp. *Sclerotium* spp. | **For seed treatment:** | | | | | | | Seeds are treated before planting. Sterile the media prior to use. Otherwise apply fungicides with the appearance of disease. Repeat application at 6-10 day intervals during severe conditions. |
| | | Thiram 80% WP | 5 g/kg seeds | | | | | | |
| | | Thiophanate-methyl 50% + Thiram 30% WP | 4 g/kg seeds | | | | | | |
| | | Captan 50% WP | 6 g/kg seeds | | | | | | |
| | | Captan 80% WP | 4 g/kg seeds | | | | | | |
| | | **For planting media:** | | | | | | | |
| | | Thiram 80% WP | 70 g/50 l/10 $m^2$ | | | | 6-8 | 14 | |
| | | Thiophanate-methyl 50% + Thiram 30% WP Thiophanate-methyl 70% WP | 50 g/50 l/10 $m^2$ 30 g/50 l/10 $m^2$ | | | | 7-10 10-12 | 14 14 | |
| | | Chlorothalonil 500 g/l SC | 90 ml/50 l/10 $m^2$ | | | | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 60 g/50 l/10 $m^2$ | | | | 7-10 | 14 | |
| | | Flutolanil 50% WP | 30 g/50 l/10 $m^2$ | | | | 10-12 | 14 | |
| | | Captan 50% WP | 60 g/50 l/10 $m^2$ | | | | 6-8 | 14 | |
| | | Captan 80% WP | 40 g/50 l/10 $m^2$ | | | | 6-8 | 14 | |
| **55.** | **Late blight:** *ophthora infestans* | Propineb 70% WP | 20 g | | 1000-1200 g | | 6- 8 | 14 | Very common in tomato. Apply Propineb as a preventive treatment at 6-8 day intervals. Apply Mancozeb + Metalaxyl or Chlorothalonil with the appearance of symptoms. Repeat applications at 12-16 day interval under severe conditons. Alternate applications of Mancozeb + Metalaxyl protective and |
| | | Mancozeb 64% + Metalaxyl 8% WP | 25 g | | 1250-1500 g | | 12-16 | 14 | |
| | | Mancozeb 64% + Metalaxyl 4% WG | 25 g | | 1250-1500 g | | 12-16 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | |
| | | Mancozeb 80% WP/75% WG | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| | | Maneb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| | | Propamocarb 607 g/l SL | 40 ml | | 2000-2400 ml | | | 14 | |
| | | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | (systemic fungicide) with Mancozeb (protective) is advisable. |
| 56. | **Early blight:** *Alternaria solani* | Mancozeb 80% WP/75% WG | 20 g | | 1000-1200 g | | 7-10 | 14 | Very common in tomato. Apply Propineb as a preventive treatment at 6-8 day intervals. Apply Chlorothalonil after appearance of symptoms. Repeat applications at 7-10 intervals under severe conditions. Alternate application of Mancozeb + Metalaxyl protective and (systemic fungicide) with Mancozeb (protective) is advisable. |
| | | Maneb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| | | Propineb 70% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| 57. | **Leaf mold** *Fulvia fulva* | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 10-12 | 14 | Very common in tomato. |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 400-480 ml | | 10-12 | 14 | |
| 58. | **Powdery mildew** *Laveillula taurica* (asexual stage: *Oidiopsis sicula*) | Bitertanol 300 g/l EC | 10 ml | | 500-600 ml | | 14-21 | 14 | Common in tomato and bell pepper. Repeat application of Bitertanol, Thiophanate-methyl or Chlorothalonil respectively at 14-21, 10-12 and 7-10 day intervals during severe infestations. |
| | | Chlorothalonil 500 g/1 SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | |
| | | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 10-12 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 400-480 ml | | 10-12 | 14 | |
| 59. | **Collar rot/ Southern blight** *Sclerotium rolfsii* | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 10-12 | 14 | Common in tomato and bell pepper. Repeat fungicide application at 7-10 day intervals under favourable conditions. |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | The fugicidal spray should be directed to the collar region |
| **60.** | **Anthracnose** | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | Repeat fungicide |
| | *Colletotrichum capsici* | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | applications at 7-10 day |
| | C. *gloeosporioides* | Mancozeb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | intervals under severe |
| | C. *acutatum* | Maneb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | conditions. |
| | *C. coccodes* | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 10-12 | 14 | Apply balanced fertilizer. |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 400-480 ml | | 10-12 | 14 | Avoid over dose of nitrogen. |
| **61.** | **cospora leaf spot** | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | Apply fungicide once at |
| | *Cercospora capsici* | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | flowering as a preventive |
| | | Mancozeb 80% WP/75% WG | 20 g | | 1000-1200 g | | 7-10 | 14 | treatment. Repeat |
| | | Maneb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | applications at 7-10 day |
| | | Propineb 70% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | intervals under severe conditions. |
| **62.** | **Phytophthora blight** | Mancozeb 80% WP/75% WG | 20 g | | 1000-1200 g | | 7-10 | 14 | Repeat applications at 6-10 |
| | | Maneb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | day intervals under severe |
| | *Phytophthora capsici* | Propineb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | conditions. |
| | | Mancozeb 64% + Metalaxyl 8% WP | 25 g | | 1250-1500 g | | 12-16 | 14 | |
| | | Mancozeb 64% + Metalaxyl 4% WG | 25 g | | 1250-1500 g | | 12-16 | 14 | |
| | | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | |
| | | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| | **FLORICULTURAL CROPS** | | | | | | | | |
| **63.** | **Anthracnose** | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | Anthracnose is commonly |
| | *Colletotrichum* | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | found in Anthurium, |
| | *gloeosporioides* | Maneb 80% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | Aglaonema, Dieffenbachia, |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| | *Glomerella* spp. | Mancozeb 80% WP/75% WG | 20 g | | 1000-1200 g | | 7-10 | 14 | Adenium, Polyscias, Orchids and Dracaena plants. |
| | | Carbendazim 50% WP/WG | 7 g | | 280-420 g | | 10-14 | 14 | |
| | | Carbendazim 500 g/l SC | 7 ml | | 280-420 ml | | 10-14 | 14 | |
| | | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 10-12 | 14 | |
| | | Thiophanate-methyl 500 g/l SC | 8 ml | | 400-480 ml | | 10-12 | 14 | |
| **64.** | **Alternaria leaf spot** | Chlorothalonil 500 g/l SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | Alternaria leaf spot is common in Aglaonema, Calathea, Schefflera and Fatsia plants. Leaf spot is common in palms (mainly in *Livistona rotundifolia*), Cacti, Marantha and Calathea. It is the major limiting factor in palms. Ensure proper sanitation with fungicide application in heavy infestations. |
| | *Alternaria alternata* | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| | *Alternaria panax* | Mancozeb 80% WP/ 75% WG | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| | *Alternaria* spp. | Maneb 80% WP | 20 g | | 1000-1200 g | | 14 | 14 | |
| | **Leaf spot** | Carbendazim 50% WP/WG | 7 g | | 280-420 g | | 14 | 14 | |
| | *Heminthosporium* spp. | Carbendazim 500 g/l SC | 7 ml | | 280-420 ml | | 7-10 | 14 | |
| | *Drechslera* spp. | Thiophanate-methyl 70% WP | 6 g | | 240-360 g | | 12 | 14 | |
| | *Exserohilum* spp. | Thiophanate-methyl 500 g/l SC | 8 ml | | 400-480 ml | | 12 | 14 | |
| | *Phaetricoconis* spp. | | | | | | | | |
| | **Myrothecium leaf spot** | | | | | | | | Myrothecium leaf spot is common in Aglaonema, Dieffenbachia, Dracaena, Hedera, Marantha, Peperomia and Philodendron species. |
| | *Myrothecium* spp. | | | | | | | | |
| | **Other fungi causing leaf spots** | | | | | | | | Yellow blotch of *P. dendrobi* is common in Dendrobium orchids. |
| | *Cercospora* spp. | | | | | | | | |
| | *Fusarium* spp. | | | | | | | | |
| | *Phyllosticta* spp. | | | | | | | | |
| | *Curvularia* spp. | | | | | | | | |
| | *Phomopsis* spp. | | | | | | | | |
| | *Cylindrocladium* spp. | | | | | | | | |
| | **Yellow blotch** | | | | | | | | |
| | *Pseudocercospora dendrobi* | | | | | | | | |
| **65.** | **Rust** | Bitertanol 300 g/l EC | 10 ml | | 500-600 ml | | 14-21 | 14 | Common in Dracaena, Sandariana, Schefflera, Commelina, Aloe, Chrysanthemum and Canna species. |
| | *Puccinia* spp. | Chlorothalonil 500 g/1 SC | 30 ml | | 1500-1800 ml | | 7-10 | 14 | |
| | *Uromyces* spp. | Chlorothalonil 75% WP | 20 g | | 1000-1200 g | | 7-10 | 14 | |
| | | Mancozeb 80% WP/75% WG | 20 g | | 1000-1200 g | | 6-8 | 14 | |
| | | Tebuconazole 250 g/l EC | 3.5 ml | | 175-210 ml | | 14-21 | 21 | |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **66.** | **Damping-off, Collar, Stem, Root & Crown rot** *Phytophthora* spp. *Pythium* spp. *Rhizoctonia* spp. *Sclerotium* spp. *Botryodiplodia* spp. *Fusarium* spp. *Colletotrichum* spp. | Captan 50% WP<br>Captan 80% WP<br>Thiram 80% WP<br>Chlorothalonil 500 g/1 SC<br>Chlorothalonil 75% WP<br>Thiophanate-methyl 70% WP | 60 g/50 1/10 $m^2$<br>40 g/50 1/10 $m^2$<br>70 g/50 1/10 $m^2$<br>90 ml/50 l/10 $m^2$<br>60 g/50 1/10 $m^2$<br>30 g/50 1/10 $m^2$ | | | | 6-8<br>6-8<br>6-8<br>7-10<br>7-10<br>10-12 | 14<br>14<br>14<br>14<br>14<br>14 | Anthurium, Dieffenbachia, Dracaena, Roses, Orchids and Peperomia are suceptible to *Phytopthora* spp., Scindapsus, Philodendron, Canna and Marantha are susceptible to *Pythium* species. Thiophanate-methyl is more effective against *Sclerotium rolfsii* and *Fusarium* spp. |
| **67.** | **Rhizoctonia root- rot Sclerotium root and stem rot** *Sclerotium rolfsii* | Thiophanate-methyl 70% WP<br>Captan 50% WP<br>Captan 80% WP<br>Thiram 80% WP | 30 g/50 l/10 $m^2$<br>60 g/50 l/10 $m^2$<br>40 g/50 l/10 $m^2$<br>70 g/50 l/10 $m^2$ | | | | 10-12<br>6-8<br>6-8<br>6-8 | 14<br>14<br>14<br>14 | Common in Aglaonema, Dracaena, Philodendron, Pothos, Syngonium, Schefflers, Codiaeum, Polyscias, Allmanda and *Ixora* species are susceptible to *Rhizoctonia* spp. Drecaena, Pothos, Polyscias, Peperomia, Syngonium, Philodendron, Schefflera, Saintpaulia and Dieffenbachia are susceptible to *Sclerotium roffsii*. |
| **68.** | **Fusarium leaf spot** *Fusarium moniliforme* | Thiophanate-methyl 70% WP | 6 g | 200-240 g | | | 10-12 | 14 | Dracaena, Acorus and Sansevieria are susceptible to leaf spots. Aglaonema, Dieffenbachia and Polyscias are susceptible to stem rot. Fusarium wilt is found mostly in *Fatsia* and *Hedera* species. |

| No. | Name of the Desease | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) Stage I | Stage II | Stage III | Appli-cation spplica-tion (Pro-duct/ha) | PHI Days | Remarks |
|---|---|---|---|---|---|---|---|---|---|
| **69.** | **Fusarium stem rot**<br>*Fusarium solani*<br>**Fusarium wilt**<br>*Fusarium oxysporum* | Captan 50% WP<br>Captan 80% WP<br>Thiram 80% WP | 60 g/50 l/10 $m^2$<br>40 g/50 l/10 $m^2$<br>70 g/50 l/10 $m^2$ | | | | 6-8<br>6-8<br>6-8 | 14<br>14<br>14 | Dracaena, Polyscias, and Sansevieria are susceptible to this fungus. Drench the soil or dip the cut ends of the cuttings with one of the fungicide solutions. |
| **70.** | **Stem & rhizome rot**<br>*Aspergillus niger* | Captan 50% WP<br>Captan 80% WP<br>Thiram 80% WP<br>Chlorothalonil 500 g/l SC<br>Chlorothalonil 75% WP | 60 g/50 l/10 $m^2$<br>40 g/50 l/10 $m^2$<br>70 g/50 l/10 $m^2$<br>90 ml/50 l/10 $m^2$<br>60 ml/50 l/10 $m^2$ | | | | 6-8<br>6-8<br>6-8<br>7-10 | 14<br>14<br>14<br>14 | Roses are more susceptible. Remove and burn infected leaves and stems. Cover the soil surface with fresh soil if infected leaves are fallen and decayed on the soil surface. |
| **71.** | **Black spot**<br>*Diplocarpon rosae* | Maneb 80% WP<br>Chlorothalonil 500 g/l SC<br>Chlorothalonil 75% WP<br>Copper 50% WP<br>Copper 37.5% WG<br>Mancozeb 80% WP | 20 g<br>30 ml<br>20 g<br>40 g<br>50 g<br>20 g | 200-240 g<br>1000-1200 g<br>1500-1800 ml<br>1000-1200 g<br>2000-2400 g<br>2500-3000 g<br>1000-1200 g | | | 7-10<br>7-10<br>7-10<br>6-8<br>6-8<br>7-10 | 14<br>14<br>14<br>14<br>14<br>14 | Roses are more susceptible. |
| **72.** | **Botrytis blight**<br>*Botrytis cinerea* | Mancozeb 80% WP/75% WG<br>Maneb 80% WP<br>Chlorothalonil 500 g/l SC<br>Chlorothalonil 75% WP | 20 g<br>20 g<br>30 ml<br>20 g | 800-1000 g<br>800-1000 g<br>1200-1500 ml<br>800-1000 g | | | 7-10<br>7-10<br>7-10<br>7-10 | 14<br>14<br>14<br>14 | Roses are more susceptible. |
| **73.** | **Downy mildew**<br>*Perenospora* spp. | Captan 50% WP<br>Captan 480 g/l SC<br>Captan 80% WP | 20 g<br>20 ml 12.5 g | 1000-1200 g<br>1000-1200 ml<br>625-750 g | | | 6-8<br>6-8<br>6-8 | 14<br>14<br>14 | |
| **74.** | **Powdery mildew**<br>*Sphaerotheca pannosa* f.sp. *rosea* | Sulphur 80% WP/WG<br>Chlorothalonil 500 g/l SC<br>Chlorothalonil 75% WP | 50 g<br>30 ml<br>20 g | 2500-3000 g<br>1500-1800 ml<br>1000-1200 g | | | 6-8<br>7-10<br>7-10 | 14<br>14<br>14 | |

| Common Name | | Trade Name |
|---|---|---|
| Bitertanol 300 g/l EC | ... | Baycor EC 300 |
| Captan 480 g/l SC | ... | (Not yet registered) |
| Captan 50% WP | ... | Captaf 50 WP, Captan, Captan 50 WP |
| Carbendazim 50% WP | ... | Baur's Carbendazim, Benzor, Billet, Blast, Blast All, Bullet 50, Canon, Carbendazim 50 WP, Carbin, Cekudazim 50% WP, Downey, Ho-Guard, Shoot, Mackdazim |
| Carbendazim 50% WG | ... | Bavistin |
| Carbendazim 500 g/l SC | ... | Bavistin FL |
| Chlorothalonil 500 g/l SC | ... | Daconil SC, Ronil |
| Chlorothalonil 75% WP | ... | Super-Dac |
| Copper (as copper oxychloride) 50% WP | ... | Blue Diamond, Coblite, Cobox, COC 50% WP, Copper Oxychloride 50 WP, Copperdoz 50% WP, Helmoxy WP 50%, Protek, Punch, Rusta WP 50%, Sulcox |
| Copper (as cuprous oxide) 50% WP | ... | Perenox |
| Copper (as cupric hydroxide) 50% WP | ... | Champion |
| Copper (as copper hydroxide) 37.5% WG | ... | Champ DP (Not yet registered) |
| Copper (as copper hydroxide) 362 g/l SC | ... | Champ SC (Not yet registered) |
| Copper 21% + Mancozeb 20% WP | ... | Tri Miltox Forte |
| Dazomet 97% GR | ... | Basamid Granular |
| Difenoconazole 250 g/l EC | ... | Score 25 EC (Not yet registered) |
| Difenoconazole 150 g/l + Propiconazole 150 g/l EC | ... | Armure 300 EC (Not yet registered) |
| Edifenphos 300 g/l EC | ... | Hinosan EC 30% |
| Epoxiconazole 125 g/l + Carbendazim 125 g/l SC | ... | Duett (Not yet registered) |
| Epoxiconazole 125 g/l SC | ... | Opus |
| Fenbuconazole 250 g/l EC | ... | Indar (Not yet registered) |
| Flutolanil 50% WP | ... | Moncut 50 WP |
| Fthalide 150 g/l + Kasugamycin 12 g/l SL | ... | Kasurabcide (Not yet registered) |
| Fluzilazole 400 g/l EC | ... | (Not yet registered) |
| Folpet 50% WP | ... | Folpet WP 50% |

| Common Name | | Trade Name |
|---|---|---|
| Hexaconazole 50 g/l EC | ... | Contaf 5E, Eraser, Galan 5 EC, Lazer, Shakthi |
| Isoprothiolane 400 g/l EC | ... | Fuji-one |
| Mancozeb 60% + Dimethomorph 9% WP | ... | Acrobat MZ (Not yet registered) |
| Mancozeb 80% WP | ... | Agrithane M 45, Agstar Mancozeb, Amicozeb, Blitox, Dithane M 45, Dynamic 80, Farmers Mancozeb, Finchem Mancozeb, Hayleys Agrocare Mancozeb WP, Mackzeb Indofil M 45, Mancol, Mancozeb 80 WP, Mancozeb 80%, Mancozeb 80% WP, Marco, Mansumi, Manzate, Morizeb WP 80%, Polyzate, Right, Sabero-M 45, Shield, Smash, Suncozeb, Unithane, Uthane, Vondozeb. |
| Mancozeb 480 g/l SC | ... | (Not yet registered) |
| Mancozeb 75% WG | ... | (Not yet registered) |
| Mancozeb 64% + Metalaxyl 8% WP | ... | Agrocil, Agstar Rainguard 72, Sunlax, Metalax, Metaxil, Relax, Rid-All, Ridoaxyl, Ridomil MZ 72 WP, Unilax |
| Mancozeb 56% + Oxadixyl 10% WP | ... | Sandofan M |
| Mancozeb 64% + Metalaxyl 4% WG | ... | Ridomil Gold MZ 68 WG |
| Maneb 80% WP | ... | Maneb 80 WP, Maneram, Polyram M, Saneb WP 80% |
| Metiram 70% WG | ... | Polyram DF |
| Metiram 57% + Cymoxanil 4.8% WG | ... | Aviso DF (Not yet registered) |
| Pencycuron 25% WP | ... | Monceren WP 25% |
| Propamocarb 607 g/l SL | ... | Previcur 607 SL |
| Propiconazole 250 g/l EC | ... | Bumper, Tilt |
| Propineb 70% WP | ... | Antracol 70% WP |
| Propineb 56% + Oxadixyl 10% WP | ... | Fruvit WP 66% |
| Pyraclostrobin 250 g/l EC | ... | Cabrio |
| Sulphur 80% WP | ... | CG Sulphur, Exsul, Morisal, Sulphotox, Sulphur 80 WP, Sulphur 80%, Super Guard 800, Suvisul Thiolux, Thiosan, |
| Sulphur 80% WG | ... | Haymite WG 80%, Kumulus DF, Macksul Microthiol Special, Suvisal DF 80%, Thiovit jet |
| Tebuconazole 250 g/l EW | ... | Folicur 250 EW, Orius 25 EW |
| Thiophanate-methyl 70% WP | ... | Thiophen M-70 |
| Thiophanate-methyl 50% + Thiram 30% WP | ... | Homai |
| Thiophanate-methyl 500 g/l SC | ... | Topsin ULV (Not yet registered) |
| Thiram 80% WP | ... | Ceypetco Thiram, Finchem Thiram, Opex Thiram, Pomarsol Forte WP 80%, Scope |
| Tricyclazole 75% WP | ... | Guru |
| Valiphenal 6% + Mancozeb 60% WG | ... | (Not yet registered) |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | | Time of Application | Remarks |
|---|---|---|---|---|---|---|---|
| | **CROP: RICE - PRE-PLANTING TOTAL WEED CONTROL** (BEFORE LAND PREPARATION ) | | | | | | |
| **01.** | **All annual & perennial weeds** | Glyphosate (as isopropylamine salt) 120 g/l SL | | 150-190 ml | 6.0 l | Pre-tillage | Apply thoroughly to wet the green foliage, when weeds are at active growing stage. 4-6 hrs. of sunny weather is required after application for effective absorption of the herbicide. Do not till the land at least 10-14 days after application or until weeds become chlorotic. Plough and innundate the field for about 4-5 days before harrowing and levelling. Leaves no residual effect on soil.<br><br>Do not apply on bunds in rice fields. |
| | | Glyphosate (as isopropylamine salt) 360 g/l SL | | 100-125 ml | 4.0 l | Pre-tillage | |
| | | Glyphosate (as trimesium salt) 360 g/l SL | | 100-125 ml | 4.0 l | Pre-tillage | |
| | | Glyphosate (as isopropylamine salt) 179 g/l + Carfentrazone-ethyl 6.5 g/l CS | | 140-175 ml | 5.6 l | Pre-tillage | |
| | | Glyphosate (as ammonium salt) 65% SG | | 75-95 g | 3.0 kg | Pre-tillage | |
| | | Glyphosate (as isopropylamine salt) 290 g/l + MCPA (as isopropylamine salt) 38 g/l SL | | 138-172 ml | 5.5 l | Pre-tillage | |
| **02.** | **All annual weeds** | Paraquat (as paraquat dichloride) 65 g/l SL | | 230-290 ml | 9.3 l | Pre-tillage | Ensure thorough wetting of green foliage. Not effective against perennial weeds. No residual effect on soil. Impound water to the field after 3 days. |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | Time of Application | Remarks |
|---|---|---|---|---|---|---|
| | **CROP: RICE - POST PLANTING SELECTIVE WEED CONTROL -** ONE SHOT HERBICIDES TO KILL GRASSES, SEDGES AND BROAD-LEAF WEEDS | | | | | |
| **03.** | **Common annual grasses, sedges and broad-leaf weeds** including *Echinochloa* spp. *Ischaemum rugosum* *Leptochloa chinensis* *Cyperus difformis* *Cyperus iria* *Fimbristylis* spp. *Ludwigia* spp. *Eclipta alba* | Pretilachlor 300 g/l EC | 40-50 ml | 1.6 l | 0-4 DAS/DAP | Apply on to wet/moist soil. Proper land levelling is important. Maintains residual effect for 2-3 weeks. Safener, fenchlorim, is added to protect rice seedlings from the herbicide injury. |
| | | Oxyfluorfen 240 g/l EC | 2.5 ml | 500 ml | 3-5 DAS/DAP | Apply as sand mix (About 60 kg of sand/ha). Apply on to wet/moist soil. Proper land levelling and water management is important. |
| **04.** | **Common annual grasses, sedges and broad-leaf weeds** including *Echinochloa* spp. *Ischaemum rugosum* *Leptochloa chinensis* *Cyperus difformis* *Cyperus iria* *Fimbristylis* spp. *Ludwigia* spp. *Eclipta alba* | Fentrazamide 37.5% + Propanil 6.75% WP | 75-95 g | 3.0 kg | Weeds are at 1-3 leaf stage (5-8 DAS/DAP) | Apply on to drained fields/impound water after 2 days. |
| | | Bensulfuron-methyl 3.3% + Anilophos 26.7% WP | 25-32 g | 1.0 kg | Weeds are at 2-3 leaf stages (6-9 DAS/DAP) | Apply on to drained fields/impound water after 2 days and maintain as far as possible. |
| | | Pretilachlor 170 g/l + Propanil 330 g/l EC | 50-64 ml | 2.0 l | Weeds are at 2-3 leaf stages (6-10 DAS/DAP) | Apply on to drained fields/impound water after 2 days and maintain as far as possible. Residual effect lasts for 2-3 weeks. |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | | Time of Application | Remarks |
|---|---|---|---|---|---|---|---|
| **05.** | **Common annual grasses, sedges and broad-leaf weeds** including *bchinochloa* spp. *Ischaemum rugosum* *Leptochloa chinensis* *Cyperus difformis* *Cyperus ilia* *Fimbristylis* spp. *Ludwigia* spp. *Eclipta alba* | Mefenacet 3% + Bensulfuron-methyl 50% WP | 35-45 g | 1.4 kg | | Weeds are at 1-3 leaf stage (7-10 DAS/DAP) | Apply on to drained fields/impound water after 2 days. |
| 06. | Common annual grasses, sedges & broad-leaf weeds including - Echinochloa spp. Ischaemum rugosum Leptochloa chinensis Eclipta alba Cyperus difformis Cyperus iria Fimbristylis spp. Aeschynomene spp. Ludwigia spp | Oxadiazon 80 g/l + Propanil 230 g/l EC | 88-110 ml | 3.5 l | | Weeds are at 2-3 leaf stage (7-12 DAS/DAP) | Drain thoroughly to expose weeds. Do not use carbamates or organophosphates 7 days before or after application of the herbicide. Impound water 2-3 days after spraying to enhance weed control. Residual action lasts 2-3 weeks. |
| 07. | Common annual grasses, sedges & broad-leaf weeds including- Echinochloa spp. Ischaemum rugosum Leptochloa chinensis Eclipta alba Cyperus difformis Cyperus iria Fimbristylis spp. Ludwigia spp. | Thiobencarb 400 g/l + Propanil 200 g/l EC | 125-156 ml | 5.0 l | | 8-12 DAS/DAP | Drain thoroughly to expose weeds. Do not use carbamates or organophosphates 7 days before or after application of herbicide. Residual action lasts 3-4 weeks. Impound water 1-2 days after spraying for better weed control. |
| | | Molinate 330 g/l + Propanil 330 g/l EC | 125-156 ml | 5.0 l | | 7-12 DAS/DAP | |
| | | Oxyfluorfen 12 g/l + Propanil 342 g/l EC | 95-120 ml | 3.8 l | | 8-10 DAS/DAP | Drain thorough to expose weeds. Do not use carbamates or organophosphates 7 days before or after application of herbicide. Residual action lasts 3-4 weeks. Do not flood the field within 4-5 days after spraying. |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | | Time of Application | Remarks |
|---|---|---|---|---|---|---|---|
| **08.** | **Common annual grasses, sedges & broad-leaf weeds** including-<br>*Echinochloa* spp.<br>*Ischaemum rugosum*<br>*Cyperus difformis*<br>*Cyperus iria*<br>*Fimbristylis* spp.<br>*Eclipta alba*<br>But excluding,<br>*Isachnae globosa*<br>*Leptochloa chinensis* | Bispyribac-sodium 100 g/l SC | 7.5-10 ml | 300 ml | Weeds are at 2-5 leaf stage (8-14 DAS/DAP) | Drain thoroughly to expose weeds. Always mix with the non-ionic surfactant at 1 ml/1000 ml of spray mixture. Impound water after 2-3 days of spraying. No residual effect. Alternate with Propanil or Propanil-based herbicides in every 3-4 seasons to control the build up of Isachnae globosa & L. chinensis. |
| | | Bispyribac-sodium 15 g/l + Thiobencarb 900 g/l OD | 38-48 ml | 1.5 l | 7-14 DAS/DAP | |
| | | Penoxulam 240 g/l SL | 2.5-3.2 ml | 100 ml | 10-18 DAS/DAP | |
| | | Pyrazosulfuron-ethyl 10% WP | 5.6-7.0 g | 225 g | 3-7 DAS/DAP | |
| | | Azimsulfuron 50% WG | 1.5-1.9 g | 60 g | 7-15 DAS/DAP | Apply on drained soil. Residual action lasts 2-3 weeks. |
| | | Pyribenzoxim 50 g/l EC | 12.5-16 ml | 500 ml | 7-18 DAS/DAP | |
| | | Fenoxaprop-p-ethyl 69 g/l + Ethoxysulfuron 20 g/l OD | 12.5-16 ml | 500 ml | 14-21 DAS/DAP | Apply on drained soil. Residual action lasts 2-3 weeks. |
| **09.** | **Common annual grasses, sedges & broad-leaf weeds** including-<br>*Leptochloa chienensis*<br>*Ischaemum rugosum*<br>*Echinochloa* spp.<br>*Cyperus difformis*<br>*Cyperus iria*<br>*Fimbristylis* spp.<br>*Ludwigia* spp.<br>*Eclipta alba* | Pretilachlor 300 g/l + Pyribenzoxim 20 g/l EC | 30-40 ml | 1.25 l | 6-10 DAS/DAP | - do - |
| | | Orthosulfamuron 1.25 + Propanil 60% WG | 75-95 g | 3.0 kg | 10-15 DAS/DAP | - do - |
| | | Triasulfuron 75%WG | 0.5-0.6 g | 20 g | 7-12 DAS/DAP | - do - |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | Time of Application | Remarks |
|---|---|---|---|---|---|---|
| | **CROP: RICE - POST PLANTING SELECTIVE WEED CONTROL-**GRASS KILLERS | | | | | |
| **10.** | **Mainly annual grasses** including - *Echinochloa* spp. *Ischaemum rugosum* and *Leptochloa chinensis* | Propanil 360 g/l EC | 190-235 ml | 7.5 l | 2-3 leaf stage of annual grasses. (7-10 DAS/DAP) | Drain the field well to expose weeds. Do not use carbamates or organophosphates within 7 days before or after application of the herbicide. Impound water 2-3 days after application to enhance weed control. No residual effect. |
| | | Propanil 480 g/l SL | 125-156 ml | 5.0 l | 2-3 leaf stage of annual grasses (7-10 DAS/DAP | - do |
| | | Propanil 600 g/l SC | 90-140 ml | 4.5 l | 10-12 DAS/DAP | - do |
| | | Propanil 333.3 g/l + Diflufenican 16.7 g/l EC | 62-78 ml | 2.5 l | 2-3 leaf stage of annual grasses (7-12 DAS/DAP) | - do |
| | | Pendimethalin 123 g/l + Propanil 212 g/l EC | 150-190 ml | 6.0 l | 2-3 leaf stage of annual grasses (7-12 DAS/DAP) | - do |
| | | Propanil 440 g/l + Anilophos 44 g/l EC | 125-156 ml | 5.0 l | 2-3 leaf stage of annual grasses (7-12 DAS/DAP) | - do |
| | | Oxadiargyl 20 g/l + Propanil 400 g/l EC | 62-78 ml | 2.5 l | 2-3 leaf stage of annual grasses (6-12 DAS/DAP) | - do |
| | | Cyhalofop-butyl 100 g/l EC | 50-64 ml | 2.0 l | 2-3 leaf stage of annual grasses (7-15 DAS/DAP) | Apply on to wet soil or with little standing water. |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | Time of Application | Remarks |
|---|---|---|---|---|---|---|
| | **CROP: RICE - POST PLANTING SELECTIVE WEED CONTROL-**GRASS KILLERS | | | | | |
| | | Quinclorac 250 g/l SC | 20-25 ml | 800 ml | 3-5 leaf stage of grasses. (8-15 DAS/ DAP) | Apply on to wet soil. Irrigate 1-3 days after application. Residual action lasts 3-4 weeks. Alternate with Propanil or Propanil-based herbicide in every 3-4 seasons to control the build up of *Ischaemum rugosum and Leptochloa chinensis*. Quinclorac should not be applied if suceeding crop belongs to Solanaceae family. |
| | | Clomazone 200 g/l + Propanil 400 g/l EC | 30-38 ml | 1.2 l | 3-5 leaf stage of annual grasses (8-15 DAS/DAP) | Apply on to moist soil. Impound water after 2-3 days. |
| **11.** | **Mainly annual grasses,** excluding *I. rugosum* | Fenoxaprop-p-ethyl 75 g/l EW | 9-11 ml | 350 ml | 16-25 DAS/DAP | Drain the field thoroughly to expose weeds. No residual effect. Absorb quickly (within 1-2 h) by weeds. Kills even 2-3 week old grasses. Very effective on *Echinochloa* spp. |
| | | Fenoxaprop-p-ethyl 69 g/l + Isoxadifen-ethyl (Safener) 77.4 g/l EC | 12.5-16 ml | 500 ml | 14-18 DAS/DAP | |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | Time of Application | Remarks |
|---|---|---|---|---|---|---|
| | **CROP: RICE - POST PLANTING SELECTIVE WEED CONTROLS** | | | | | |
| **12.** | **Annual broad-leaf weeds and sedges.** Including - *Cyperus difformis* *Cyperus iria* *Fimbristylis* spp. *Eclipta alba* *Ludwigia* spp. | Pyrazosulfuron-ethyl 10% WP | 2.8-3.5 g | 112 g | 7-21 DAS/DAP | Drain the field thoroughly to expose weeds. Impound water 2-3 days after spraying. No residual effect. |
| | | Carfentrazone-ethyl 240 g/l EC | 3-3.8 ml | 120 ml | 14-21 DAS/DAP | - do - |
| | | Cyclosulfamuron 10% WP | 6.3-7.8 g | 250 g | 12-25 DAS/DAP | - do - |
| | | Ethoxysulfuron 15% WG | 2-2.5 g | 80 g | 14-21 DAS/DAP | - do - |
| | | Ethoxysulfuron 12.5% + Iodosulfuron-methyl 1.3% WG | 2.5-3.1 g | 100 g | 14-21 DAS/DAP | - do - |
| | | Bensulfuron-methyl 8.25% + Metsulfuron-methyl 1.75% WP | 6.3-7.8 g | 250 g | 12-25 DAS/DAP | - do - |
| | | MCPA 400 g/l SL | 70-88 ml | 2.8 l | 21-28 DAS/DAP | - do - |
| | | Orthosulfamuron 50% WG | 3.8-4.7 g | 150 g | 15 DAS/DAP | - do - |
| | | MCPA 600 g/l SL | 45-56 ml | 1.8 l | 21-28 DAS/DAP | - do - |
| | | MCPA 750 g/l SL | 22-27 ml | 850 ml | 21-28 DAS/DAP | - do - |
| | | Metsulfuron-methyl 20% WG | 1-1.25 g | 40 g | 14-18 DAS/DAP | - do - |
| | | Flucetosulfuron 10% WG | 6.3-7.8 g | 250 g | 12-18 DAS/DAP | - do - |
| **13.** | **Weedy Rice** | Glufosinate ammonium 150 g/l EC | 100 ml/1 l | 200-400 ml | - | Apply to panicles of weedy rice at heading stage using a herbicide soaked cloth. (Wiping method) |
| | Pretilachlor 300 g/l EC | | 40-50 ml | 1.3-1.6 l | 3 DBS/DAS/DAP | Apply on to wet/moist soil. Proper land levelling 3 DBS/DAS/DAP is important. Maintains residual effect for 2-3 weeks. Safener, fenchlorim, is added to protect rice seedlings from the herbicide injury. |

*DAS - Days after sowing DAP - Days after transplanting DBS - Days before sowing

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | Time of Application | Remarks |
|---|---|---|---|---|---|---|
| | **CROPS: SOYBEAN, BLACK GRAM, GREEN GRAM & COWPEA** | | | | | |
| **14.** | **Common weeds** including- | Metribuzin 70% WP/WG | 25-32 g | 1.0 kg | Apply pre-emergence after planting. | Apply lower rates to sandy soils or soils low in organic matter. Sufficient moisture after spraying will improve the efficacy of weed control. Controls weeds for 3-4 weeks. |
| | *Digitaria sanguinalis*<br>*Echinochloa* spp.<br>*Eleusine indica* | | | | - do - | |
| | *Lolium* spp.<br>*Cleome* spp. | Methabenzthiazuron 70% WP | 88-110 g | 3.5 kg | - do - | |
| | *Portulaca oleracea*<br>*Ageratum conizoides*<br>*Digitaria* spp. | Metolachlor 500 g/l EC | 100-128 g | 4.0 l | | |
| | **CROP: CHILLI** | | | | | |
| **15.** | **Common weeds** including-<br>Digitaria spp.<br>Echinochloa spp.<br>Eleusine indica | Alachlor 480 g/l EC | 125-156 ml | 5.0 l | Apply pre-emergence after planting. | - do - |
| | Setaria spp.<br>Sida acuta<br>Amaranthus spp.<br>Cleome spp. | Napropamide 50% WP | 120-150 g | 4.8 kg | - do - | |
| | **CROP: GROUNDNUT** | | | | | |
| **16.** | **Common weeds** including-<br>Amaranthus spp.<br>Cleome spp.<br>Digitaria spp.<br>Echinochloa spp.<br>Setaria spp.<br>Eleusine indica | Alachlor 480 g/l EC | 125-156 ml | 5.0 l | Apply pre-emergence after planting | Apply lower rates to sandy soils or soils low in organic matter. Controls weeds for 3-4 weeks. Presence of sufficient moisture after spraying will improve the efficacy of weed control. |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | Time of Application | Remarks |
|---|---|---|---|---|---|---|
| | **CROPS: BIG ONION & RED ONION** | | | | | |
| **17.** | Common weeds including- *Digitaria* spp. *Echinochloa* spp. *Eleusine indica* *Setaria* spp. *Sida acuta* *Amaranthus* spp. | Alachlor 480 g/l EC | 125-156 ml | 5.0 l | Soon after planting, on wet soil before weed emergence | Apply lower rates to sandy soils or soils low in organic matter. Controls weeds for 3-4 weeks. Presence of sufficient moisture after spraying will improve the efficacy of weed control. Follow up with 1-2 hand weedings when weeds emerge. |
| | | Methabenzthiazuron 70% WP | 62-78 g | 2.5 kg | | |
| | | Metolachlor 500 g/l EC | 100-128 ml | 4.0 l | | |
| | | Oxyfluorfen 240 g/l EC | 12.5-16 ml | 500 ml | From 2-12 days after planting | Control weeds for 3-4 weeks. Presence of sufficient moisture after spraying will improve the efficacy of weed control. Follow up with 1-2 hand weedings when weeds emerge. |
| | | Pendimethalin 300 g/l EC | 88-110 ml | 3.5 l | From 0-5 days after planting | Control weeds for 3-4 weeks. Sufficient moisture after spraying will improve the efficacy of weed control. Follow up with 1-2 hand weedings when weeds emerge. |
| **18.** | **CROP: MAIZE** | | | | | |
| | **Common weeds** including- *Sida acuta* *Amaranthus* spp. *Cleome* spp. *Digitaria* spp. *Echinochloa* spp. *Setaria* spp. *Eleusine indica* | Pendimethalin 300 g/l EC | 88-110 ml | 3.5 l | Apply pre-emergence after seeding | Controls weeds for 3-4 weeks. Presence of sufficient moisture after spraying will ensure better efficacy of weed control. Follow up with minimum hand weeding if necessary. |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | Time of Application | Remarks |
|---|---|---|---|---|---|---|
| **19.** | **CROP: POTATO** | | | | | |
| | **Common weeds** including-<br>*Digitaria saguinalis*<br>*Eleusine indica*<br>*Lolium* spp.<br>*Amaranthus* spp.<br>*Galinsoga parviflora*<br>*Polygonum* spp.<br>*Portulaca oleracea*<br>*Solatium nigrum* | Metribuzin 70% WP/WG<br><br>Methabenzthiazuron 70% WP | 25-32 g<br>62-78 g | 1.0 kg<br>2.5 kg | 1-6 DAP<br>0-15 DAP | Controls weeds for 3-4 weeks. Presence of sufficient moisture after application will improve the efficacy of weed control. Caution: Do not apply when plants are more than 5 cm tall. Do not use on sandy soils. |
| **20.** | **CROP: CARROT** | | | | | |
| | **Common weeds** including-<br>*Digitaria sanguinalis*<br>*Echinochloa* spp.<br>*Eleusine indica*<br>*Lolium* spp.<br>*Amaranthus* spp.<br>*Portulaca oleracea*<br>*Solanum nigrum*<br>*Galinsoga parviflora*<br>*Polygonum* spp. | Metribuzin 70% WP/WG | 12-16 g | 500 | Apply as a Pre-emergent. | Controls weeds for 3-4 weeks after application.<br>Sufficient moisture after spraying will improve the efficacy of weed control. |
| **21.** | **CROP:PINEAPPLE** | | | | | |
| | All herbacious weeds | Diuron 80% WP | 80-100 g | 3.2 kg | Pre-emergence & early post-emergence | Sufficient moisture in soil will improve the efficacy of weed control. Do not disturb the sprayed soil. Controls weeds for 2-3 months. Follow up with spot spraying when weeds emerge. Mixing with a suitable surfactant will improve the efficacy of weed control, specially when sprayed on emerged weeds. |
| | | Diuron 480 g/l SC | 45-56 ml | 1.8 l | - do - | |

| No. | Weed Group / Species | Common name | Dilution (product per 10 l of water) | Rate of application (Product/ha) | | Time of Application | Remarks |
|---|---|---|---|---|---|---|---|
| **NON-CROP SITUATIONS -** FALLOW LANDS, FENCE ROWS, ROAD SIDES, SEMI AQUATIC HABITATS INCLUDING INTER -ROW WEED CONTROL IN ORCHARDS | | | | | | | |
| **22.** | **All herbacious weeds** | Paraquat (as paraquat dichloride) 65 g/l SL | 230-290 ml | 9.3 l | | Post-emergence | Controls weeds in non-crop areas. Apply when weeds are actively growing. Ensure thorough wetting of green foliage. Not effective against perennial weeds. No residual effect on soil. |
| **23.** | **All weeds including perennials** | Glyphosate (as isopropylamine salt) 120 g/l SL | 150-190 ml | 6.0 l | | Post-emergence | |
| | | Glyphosate (as isopropylamine salt) 360 g/l SL | 100-125 ml | 4.0 l | | Post-emergence | Apply when weeds are actively growing. Do not disturb sprayed weeds for 10-14 days. Controls most weeds including perennial grasses and sedges. No residual effect on soil. |
| | | Glyphosate (as trimesium salt) 360 g/l SL | 100-125 ml | 4.0 l | | Post-emergence | |
| | | Glyphosate (as isopropylamine salt) 179 g/l + Carfentrazone-ethyl 6.5 g/l CS | 140-175 ml | 5.6 l | | Post-emergence | |
| | | Glyphosate (as ammonium salt) 65% SG | 75-95 g | 3.0 kg | | Post-emergence | |
| | | Glyphosate (as isopropylamine salt) 290 g/l + MCPA (as isopropylamine salt) 38 g/l SL | 138-172 ml | 5.5 l | | Post-emergence | |
| **24.** | **Aquatic weeds -** Typha *Angustifolia-* (Cattail) *Ipomea aquatica-*(Kankun) *Micania scandense-* (Wathupalu) *Mimosa pigra* - (Yoda Nidikumba), *Eichornia crassipes* (Water hyacinth) *Monochoria vaginalis* (Diya habarala) *Colocasia esculentus* - (Wel ala kola) | Glyphosate (as isopropylamine salt) 360 g/l SL | 100-125 ml | 4.0 | | Post-emergence | - do - Addition of a wetter may improve the weed kill. However, frequent repeated application is not advisable. |

| Common Name | | Trade Name |
|---|---|---|
| Alachlor 480 g/l EC | ... | Alachlor, Answer, CG Laxsso, Haychlor EC 48%, Lasso, Layer, Mackchlor, Regal |
| Azimsulfuron 50% WG | ... | Gulliver (Not yet registered) |
| Bensulfuron-methyl + Anilofos 3.3 + 26.7% WP | ... | Londax Super 30 WP |
| Bensulfuron-methyl + Metsulfuron-methyl 8.25 + 1.75% WP | ... | Sindax 10 WP |
| Bispyribac-sodium 100 g/l SC | ... | Nominee |
| Bispyribac-sodium + Thiodicarb 15 + 900 g/l OD | ... | Nominee Duo (Not yet Registered) |
| Carfentrazone-ethyl 240 g/l EC | ... | Affinity 24 EC (Not yet Registered) |
| Clomazone 360 g/l CS | ... | Command 3 ME |
| Clomazone + Propanil 200 + 400 g/l EC | ... | Compro 60 EC |
| Cyclosulfamuron 10% WP | ... | Invest |
| Cyhalofop-butyl 100 g/l EC | ... | Clincher 10 EC |
| Diuron 80% WP | ... | Hayleys agro diuron, Agstar Diuron 80%, CIC Diuron, Diuron 80% WP, Diuron 80 WP, |
| | ... | Finchem Diuron, Mackwoods Diuron, O-Uron, Sanuron, Ducron |
| Diuron 480 g/l SC | ... | Direx 4 L |
| Ethoxysulfuron 15% WG | ... | Sunrice |
| Ethoxysulfuron + Iodosulfuron-methyl 12.5 + 1.3% WG | ... | Stallian WG (Not yet registered) |
| Fenoxaprop-p-ethyl 75 g/l EW | ... | Whip Super 7.5 EW |
| Fenoxaprop-p-ethyl + Ethoxysulfuron 69 + 20 g/l OD | ... | Tiller Gold |
| Fenoxaprop-p-ethyl + Isoxadifen-ethyl 69 + 77.4 g/l EC | ... | Ricestar |
| Fentrazamide + Propanil 6.75 + 37.5% WP | ... | Lecspro WP 44% |
| Flucetosulfuron 10% WG | ... | (Not yet registered) |
| Glufosinate ammonium 150 g/l EC | ... | Basta |
| Glyphosate (acid equivalent) 120 g/l SL | ... | Spark |
| Glyphosate (acid equivalent) 65 g/l SG | ... | Paara 65 |

| | | |
|---|---|---|
| Glyphosate (acid equivalent) 360 g/l SL | ... | Aarrow, Agstar Glysate 36, Baursate 36, Blaster, Ceypetco Glyphosate, Clean Out, Come-on, Count Up, |
| | ... | Counter, D-Dash, Destroy, Farmer's Glyphosate, G2, Glychi, Glypass, Glyphosate, Glytoll, Glytox, |
| | ... | Glyweed, Harass, Hatrick, Major, Mamba, Morison's Glyphosate, Powermet 36%, Reach, Ridweed 360, |
| | ... | Ridweed RP, Rounder, Roundup, Sunpower, Surpass, T-36, Teedole, Touchdown, Uproot, Vanish, Weed |
| | ... | Killer, Touchup, Weep Pack, Wipe-out, Wiper, Super Dash |
| Glyphosate (acid equivalent) + Carfentrazone-ethyl 179 + 6.5 g/l CS | ... | Trigger |
| Glyphosate (acid equivalent) + MCPA 290 + 38 g/l SL | ... | Rapid (Not yet registered) |
| MCPA 400 g/l SL | ... | MCPA 40%, Agroxone, Amitox 40 K, Fezone 4K, Finchem M 40, Herbinol-2, |
| | ... | Herbox M-Plus, Lankem M-50, MCPA, Morice-40, M-Power, M-Super, Sun M-40, Super 40, |
| | ... | Unipower M 40, Veedem 400 |
| MCPA 600 g/l SL | ... | Baurmat 60, Finchem M 60, Hedonal M 60, Herbox 60, Lankem MCPA 60, |
| | ... | M 60, Magic 60, MCPA, MCPA 60, MCPA 60%, Sun M-60, Super 60, Unipower M-60, Veedem 600 |
| MCPA 750 g/l SL | ... | (Not yet registered) |
| Mefenacet + Bensulfuron-methyl 3 + 50% WP | ... | (Not yet registered) |
| Methabenzthiazuron 70% WP | ... | Tribunil |
| Metribuzin 70% WP/WG | ... | Sencor WP 70%, Dancor |
| Metsulfuron-methyl 20% WG | ... | Accurate, Escort (Not yet registered) |
| Molinate + Propanil 330 + 330 g/l EC | ... | Arrosolo (Not in the market) |
| Napropamide 50% WP | ... | Devrinol 50 WP (Not in the market) |
| Orthosulfamuron 50% WG | ... | Pivot |
| Orthosulfamuron 1.25% + Propanil 60% WG | ... | IR Prop 48 (Not yet registered) |
| Oxadiazon + Propanil 80 + 230 g/l EC | ... | Ronstar PL |
| Oxadiargyl + Propanil 20 + 400 g/l EC | ... | Topstar PL 40 EC (Not yet Registered) |
| Oxyfluorfen 240 g/l EC | ... | Control 240, Galigan, Goal 2XL |
| Oxyfluorfen + Propanil 12 + 342 g/l EC | ... | Oxynil (Not yet registered) |
| Paraquat (ion) 65 g/l SL | ... | X-Press 65, Paroto |

| | | |
|---|---|---|
| Pendimethalin 300 g/l EC | ... | Stomp |
| Pendimethalin + Propanil 123 + 212 g/l EC | ... | Chase |
| Penoxulam 240 g/l SL | ... | (Not yet registered ) |
| Pretilachlor 300 g/l EC | ... | Sofit 30 EC |
| Propanil 360 g/l EC | ... | 3,4-DPA, 3,4-DPA 36%, Agstar 3,4-DPA 36%, Baur's 3,4-DPA, Ceypetco 3,4-DPA, Down, |
| | ... | Finchem 3,4-DPA, Garentee 36, Harcros Supereon, Lankem 3,4-DPA, Lexunil, Marathon 36, Marunil |
| | ... | 36, Morison's Propanil, O-Nil, Panil 36 EC, Propanil EC 36%, Score, Stam F 34, Supereon, |
| | ... | Surcopur 36%, Sure, Top, Vatt 36%, Weedex 36, Winner. |
| Propanil 480 g/l SL | ... | Wham EZ (Not yet registered) |
| Propanil 600 g/l SC | ... | RiceCo Propanil (Not yet registered) |
| Pretilachlor + Propanil 170 + 330 g/l EC | ... | Profit 500 EC |
| Pretilachlor + Pyribenzoxim 300 + 20 g/l EC | ... | Solito 320 EC |
| Propanil + Diflufenican 333.3 + 16.7 g/l EC | ... | Zenith (Not yet Registered) |
| Propanil + Anilophos 440 + 44 g/l EC | ... | Ricefos (Not yet Registered) |
| Pyrazosulfuron-ethyl 10% WP | ... | Sinus, Sirius, Saathi |
| Pyribenzoxim 50 g/l EC | ... | Pyanchor 5% EC |
| Quinclorac 250 g/l SC | ... | Facet SC |
| Sethoxydim 125 g/l EC | ... | Nabu S, Target -S |
| Thiobencarb + Propanil 400 + 200 g/l EC | ... | Satunil 60 |
| Triasulfuron 75% WG | ... | Logran 75 WG (Not yet registered) |

## Methyl Bromide Fumigation Standards for Commercial Fumigation

| Common | Target Pest | Dosage ($g/m^3$) | Duration (hours) |
|---|---|---|---|
| ***Foliage Plants*** | | | |
| • Dracaena varieties, Codiaeum varieties (Crotons) Cordyline varieties, Aglaonema, Polyscias varieties | Scales, mealy bugs | 20 | 2 |
| • Livistonia | Insects and Arthropods, Root Mealy Bugs | 20 | 2 |
| ***Cut leaves*** | | | |
| • Dieffenbachia Leaves, Pandanus, Miscanthus | Aphids and White fly | 20 | 2 |
| ***Cut Flowers*** | | | |
| • Carnation | Mites, Thrips and Cut Worms | 32.5 | 2.5 |
| • Crossandra danica | White Fly | 16 | 1.5 |
| • Zantradasia, | Mealy Bugs/Aphids | 16 | 1.5 |
| • Chrysanthimum, Lilies, Roses, | Thrips, Aphids, Mites, Leaf Miners | 16 | 1.5 |
| • Gypsophylla | Thrips, Aphids, Mites, Leaf Miners | 16 | 1.5 |
| • Anthurium | Thrips, Aphids, Mites | 16 | 1.5 |
| ***Dry and Powdered Herbs*** | | | |
| • Welpenela, Amukkara, Cammomile Peppermint | Mites, Weevils and Common stored product Insects | 35 | 3 |
| ***Coir and Coir Products*** | Mites | 48 | 24 |
| ***Timber and Timber Products*** | Wood borers | 48 | 24 |
| ***Jerbera Seedlings*** | Snails/Slugs | 32 | 2 |
| ***Araliya Seedlings*** | Mealy bugs | 20 | 2 |

# Control of Pesticides Act, No. 33 of 1980
## (Certified on 5th September, 1980)

L.D-O.13/79

**AN ACT TO PROVIDE FOR THE LICENSING OF PESTICIDES; TO REGULATE THE IMPORT, PACKING, LABELLING, STORAGE, FORMULATION, TRANSPORT, SALE AND USE THEREOF; FOR THE APPOINTMENT OF A LICENSING AUTHORITY FOR PESTICIDES; FOR THE ESTABLISHMENT OF A PESTICIDE FORMULARY COMMITTEE AND FOR MATTERS CONNECTED THEREWITH OR INCIDENTAL THERETO;**

BE it enacted by the Parliament of the Democratic Socialist Republic of Sri Lanka as follows:-

1. This Act may be cited as the Control of Pesticides Act No. 33 of 1980. — Short title

2. This Act shall apply to- — Application of the Act

   (a) active ingredients and pesticide formulations with included adjutants; and

   (b) adjuvants other than those included in pesticide formulation if sold for addition at the point of use to the spray tank or other container of pesticide formulations.

3. (1) There shall be appointed a Registrar of Pesticides who shall be the licensing authority for pesticides.

   (2) The Registrar of Pesticides shall be a person with knowledge of toxicology and biological subjects associated with pest control and shall be responsible to the Director of Agriculture. — Licensing Authority for pesticides

4. (1) There shall be a Pesticide Formulary Committee (hereinafter referred to as the "Committee")

   (2) The Committee shall consist of -

      (a) the following *ex officio* members namely-

         (i) the person holding office for the time being as the Director of Agriculture (hereinafter referred to as the "Director"), and

         (ii) the person holding office for the time being as the Registrar of Pesticides (hereinafter referred to as the "Registrar"); and

      (b) not more than eight persons who are experienced in the use of pesticide or in pest control and related scientific disciplines who shall be appointed by the Minister.

      Provided, however, that no person having a commercial interest in the manufacture, import, marketing, formulation, storage, transport or sale of pesticides shall be so appointed.

   (3) The Director shall if present preside at all meetings of the Committee. In the absence of the Director from any such meeting, the members present shall elect one of the members to preside at such meeting.

   (4) Every member, other than the ex officio members shall, unless he vacates office earlier by death, resignation or removal by the Minister, hold office for a period of three years from the date of the appointment to such office.

Provided that a member appointed in place of a members who dies, resigns or otherwise vacates office, shall unless he earlier vacates office, hold office for the unexpired part of the term of office of the member whom he succeeds.

(5) The Minister may, by Order published in the *Gazette* remove any member, other than the ex-officio members, from office, without assigning any reason therefore and such removal shall not be called in question in any Court.

(6) Any member other than the ex-officio members vacating office by the effluxion of time shall be eligible for reappointment.

(7) If any member, is temporarily unable to perform the duties of his office during any period due to ill health or absence from Sri Lanka or for any other cause, the Minister may appoint some other person to act in his place during such period in like manner as such member was appointed in accordance with the provisions of subsection (1).

(8) The Minister may, determine the remuneration of such members and the manner of such payment in consultation with the Minister in charge of the subject of Finance.

5. (1) The functions of the Committee shall be to advise the Registrar on any important matter relating to the registration of pesticides, approval of containers and the storage, formulation, import, sale and use of pesticides and such other matters relating thereto as may be prescribed by regulations made under this Act. Functions of the Committee

(2) (a) The Committee may make rules in respect of all or any of the following matters:-

(i) the procedure to be followed at its meetings;

(ii) the conduct of its business; and

(iii) all matters connected with or incidental to the carrying on of its business.

(b) Such rules shall be made at a meeting of all members of the Committee.

(c) No rule made by the Committee shall have effect unless it is approved by the Minister and published in the *Gazette*.

6. (1) Every person desirous of licensing any pesticide shall make an application to the Registrar in that behalf. Application for licence

(2) An application under sub-section (1) shall contain the following particulars:-

(a) the name and address of the applicant;

(b) the name and address of the manufacturer or producer of the pesticide in respect of which such application made;

(c) the proposed trade name under which such pesticide shall be marketed or sold;

(d) a copy of the draft label which shall be affixed on any container in which such pesticide shall be sold;

(e) samples of the container in which such pesticide shall be distributed or sold;

(f) a statement of the claim made by the manufacturer or producer of such pesticide as to its uses, potency shelf-life and effect;

(g) a statement of the composition of such pesticide, its chemical identity, net weight, its stability in storage, methods of use and date of expiry for usage;

(h) adequate toxicological data concerning such pesticide including information on antidote;

(i) methods of analysis of the formulated compound;

(j) methods for the determination of the residue of such pesticide;

(k) report of official or other experimental stations or laboratory or biological tests concerning the efficacy of such pesticide;

(l) such other information relating to the efficacy or safety fo the safety of the pesticide as may be required by the Registrar.

(3) Where the information contained in an application made under subsection (1) is given by the applicant in confidence, it shall be treated as confidential by the Registrar:

Provided that the preceding provisions of the sub-section shall not apply where it is necessary to divulge such information if so required by a court of law.

Consideration of application

7. (1) The Registrar shall on receipt of an application under subsection (1) of section 6-

(a) register the pesticide and issue a licence; or

(b) register the pesticide and, pending the issue of licence, issue a provisional permit for limited marketing and use of the pesticide in accordance with conditions stipulated in the permit; or

(c) reject the application and state the reasons for such rejection.

(2) The issue of a licence or a permit shall be effective for the period stated in the licence or permit, and shall renewable on application made in that behalf. Such renewal shall be conditional upon a review by the Registrar of the date of the pesticide in question,

Issue of licence

8. (1) The Registrar shall not issue a licence under paragraph (a) of subsection (1) of section 7 unless the copy of the draft label submitted with the application contains in the Sinhala, Tamil and English languages the following particulars:-

(a) the trade name under which the pesticide shall be sold;

(b) the common names of the active ingredients of the pesticide, in characters not smaller in size than half the size of those used for the trade name of the pesticide, and in a position placed directly below the trade name;

(c) a statement of the composition of the pesticide with the chemical identity of the active ingredients expressed on a weight by weight percentage basis, together with the percentage of other materials

present, to give one hundred per cent, and in the case of liquid formulations, the active ingredient expressed as grams per litter;

(d) the name and address of the holder of the licence;

(e) adequate directions concerning the manner in which the pesticide is to be used, including information as to the period of time which should elapse between the last application of the pesticide and harvest the crop to which it is applied and where the Registrar deems appropriate, the shelf life of the pesticide;

(f) adequate warning and precautionary symbols and statements including first aid and antidote information;

(g) the statement "Registered under the control of Pesticides Act, 1980" which shall be an official symbol indicating that the pesticide has been licensed under this Act and the licence number assigned to it by the Registrar;

(h) any other particulars as may be prescribed by regulations under this Act.

(2) Where licensing of a pesticide has been effected under subsection (1) of section 7 no change in respect of any matters set out in paragraphs (a) to (h) of subsection (1) of this section shall be made without the prior approval of the Registrar.

Approved pesticide

9. (1) Where the Registrar issues a licence under subsection (1) of section 7, he shall declare that pesticide to be an approved pesticide.

(2) Every declaration made under subsection (1) shall be approved by the Minister and published in the *Gazette*.

Approved container or package

10. The Registrar shall, when he approved a pesticide, also approve the container or package containing such pesticide, if he is satisfied, having regard to the conditions required for safe and effective storage and handling of such pesticide, that such container or package is satisfactory.

Cancellation of licence

11. (1) Where any person contravenes any provision of this Act or any regulation or Order made thereunder, or where the Registrar considers it the conduct of its business necessary in the interest of the public to do so, he may, on the advice of the Committee cancel, suspend or modify the licence issued in respect of such pesticide or withdraw, suspend or modify the provisional permit issued to such person.

(2) Where the Registrar cancels, suspends or modified the licence or withdraws, suspends or modifies the provisional permit issued in respect of a pesticide under subsection (1) he shall state the reasons for such cancellation, suspension modification or withdrawal as the case may be.

(3) Where any cancellation or suspension takes place in respect of a pesticide under subsection (1) such pesticide shall cease to be an approved pesticide.

(4) Every cancellation or suspension under subsection (1) shall be by Order published in the *Gazette*.

12. No alteration in the package, label or composition of a pesticide shall be made by the holder of a licence issued in respect of a pesticide unless an application is made in that behlaf and approval obtained from the Registrar in respect of such intended alteration. — Alteration of package or composition

13. (1) Any person aggrieved by the rejection of an application under section 7 or the cancellation, suspension, or modification of a licence or the withdrawal, suspension or modification of a provisional permit under section 11, may prefer an appeal in writing to the Secretary to the Ministry of the Minister in charge of the subject of Agricultural Development and Research (hereinafter referred to as the "Secretary") against such rejection or cancellation, suspension, withdrawal or modification within sixty days after such decision is communicated to such person and the Secretary may, in dealing with any appeal preferred to him, affirm, vary or annul the order against which the appeal has been preferred. — Appeals

    (2) The decision of the Secretary upon an appeal shall be final and conclusive for all purposes whatsoever, and shall not be called in question in any Court.

14. No person shall manufacture, formulate, pack or distribute sell, offer for sale or deliver within the country any pesticide unless-

    (a) Such pesticide is registered and a valid licence or a provisional permit is obtained from the Registrar; and

    (b) Such pesticide is contained in an approved container or package and an approved label is conspicuously fixed thereon:

    Provided, however, that the foregoing provisions of this section shall not apply where any approved research organization imports with the written consent of the Registrar any specified quantity of pesticides or pesticide components for the purposes of research.

15. No person shall manufacture, pack, distribute, sell or offer for sale or deliver within the country any pesticide, which is adulterated or which has decomposed or deteriorated so as to be ineffective or dangerous or which is packed in containers which have deteriorated or have been damaged as to be dangerous in storage or use. — Adulterated, ecomposed or eteriorated esticides

16. No person shall store, transport, sell or offer for sale any pesticide in close juxtaposition with foodstuffs or in any such manner as would result in the contamination of such food stuffs. — Storage, transport and sale of pesticides in close juxtaposition with foodstuffs

17. No person shall import any pesticide except with the written approval of the Registrar granted on the advice of the Committee. — Prohibition of import of pesticides except upon approval

Advertisement of pesticides

18. (1) Any written, printed or graphic material relating to an accompanying a pesticide when stored, transported, distributed, sold, offered for sale or delivered within the country shall include the substance of the particulars referred to in section 8.

(2) It shall be unlawful to advertise any pesticide in a manner that is false, misleading or deceptive, and not justified by the conditions of its registration.

(3) Any claim for a pesticide contained in any advertisement or device shall be in accordance with the label statements referred to in section 8, and not be contrary to the requirements of subsection (2) of this section.

Storage of pesticides in bulk

19. (1) No person shall store pesticides in bulk other than in a special store kept for that purpose. The store shall be kept locked when loading or unloading is not in progress.

(2) A notice shall be displayed in a conspicuous position outside the store indicating the hazardous nature of its contents.

Harvesting of crops

20. No person shall harvest, or offer for sale any food crops, in which pesticides have been used unless a time limit as may be prescribed by regulations has elapsed between such use and harvest, or if the food crops shall contain pesticide residue in excess of levels as may be prescribed.

Authorized officers and their powers and functions

21. (1) The Director shall nominate such number of officers of his department as may be necessary to carry out the purposes of this Act, who shall be known as "authorized officers".

(2) An authorized officer may-

(a) Ascertain whether any person has contravened any provision of this Act or any regulation or Order made thereunder;

(b) Obtain samples of pesticides for the purpose of determining whether any deterioration, adulteration or decomposition thereof has occurred; and

(c) do all other acts or things which are connected with or are in furtherance of the exercise, performance and discharge of the powers, duties and functions under this Act.

(3) Any authorized officer may enter any premises, after sufficient notice at all reasonable hours of the day in the discharge of his functions under this Act. Such authorized officer shall not be liable on account of such entry or on account of anything done bona fide in such premises which is necessary in the exercise, performance and discharge of the powers, duties and functions under this Act.

Analysis of samples

22. (1) An authorized officer on obtaining a sample of a pesticid shall forthwith inform the seller or his agent of his intention to have the same analyzed by an authorized analyst and shall forthwith divide the sample into three equal parts and cause each part to be marked and sealed in such manner as its nature will permit and shall deliver one part each to the seller or his agent, the authorized analyst and the registrar.

(2) In the event of a dispute in respect of the result of an analysis the Registrar shall forward such part of the sample as in his custody to a referee analyst nominated by him.

(3) In any proceedings under this Act the production of a certificate signed by an authorized analyst or a referee analyst with regard to any sample procured for analysis under this section shall be prima facie evidence of the facts stated therein.

Fees

23. (1) (a) Every application for the licensing of a pesticide under section 6, and

(b) Every appeal against any rejection, cancellation, suspension, withdrawal or modification under section 13.

shall be accompanied by such fee as may be prescribed by regulations made under this Act.

(2) In addition to such fee payable under subsection (1), a levy on the importer, manufacture, formulator or packer of a pesticide may be prescribed by regulations made under this Act for the general purpose of making proper financial provision for the effective implementation of this Act and of the regulations made thereunder.

Penalty for contravention of this Act

24. (1) Every person who contravenes or fails to comply with any provision of this Act or any regulation made thereunder shall be guilty of an offence under this Act and shall on conviction by a Magistrate be sentenced to imprisonment of either description for a period of two years.

(2) Where an offence under this Act is committed by a body of persons of persons, then -

(a) if that body of persons is a body corporate, every director, manager, secretary or officer of that body corporate; or

(b) if that body of persons is a firm, every partner of that firm, shall be deemed to be guilty of that offence:

Provided, however, that no such person shall be deemed to be guilty of an offence if he proves that such offence was committed without his knowledge or that he exercised due diligence to prevent the commission of the offence.

Forfeiture

25. The Court which convicts any person of an offence under this Act, may impose any of the penalties herein before prescribed, and may, if it thinks fit, in addition order that all or any article or articles in respect of which the offence was committed be seized and forfeited to the State.

Regulations

26. (1) The Minister may make regulations in respect of matters required by this Act to be prescribed or in respect of which regulations are authorized to be made and in particular in respect of all or any of the following matters:-

(i) setting forth the position, size and colouring of the label as well as the system or systems of weight or measures to be stated in the label;

(ii) setting forth special provisions with regard to the substances or operations which presents a high or unusual degree of hazard; such special provisions may in particular-

(a) provide for the field evaluation of certain substances;

(b) regulate the marketing or distribution of certain substances as may be necessary to safeguard third parties, the environment and wildlife resources other than such noxious plants and animals whose control is desired;

(iii) Fixing the dates on which the marketing and sale of pesticides for which licences are issued under this Act shall cease and the disposal of such pesticides;

(iv) establishing standards or technical competence and equipment used by any person or body of persons engaged in the manufacture, formulation and packing of pesticides;

(v) the designation of any product as a pesticide formulation; and

(vi) the mode and manner of use of pesticides.

(2) Every regulation made by the Minister shall be published in the *Gazette* and shall come into operation on the date of such publication or on such later date as may be specified in the regulation.

(3) Every regulation made by the Minister shall, as soon as convenient after publication in the *Gazette* be brought before Parliament for approval. Any regulation which is not so approved shall be deemed to be rescinded as from the date of disapproval, but without prejudice to anything previously done thereunder.

(4) Notification of the date on which any regulation shall be deemed to be so rescinded shall be published in the *Gazette*.

27. In this Act, unless the context otherwise requires- Interpretation

"active ingredient" means any substance which gives a formulated product its pesticide properties;

"adjuvant" means any substance used as an aid to the efficacy of a Pesticide;

"Authorized analyst" means the Government Analyst, the Additional Government Analyst, a Deputy Government Analyst, a Senior Assistant Government Analyst, an Assistant Government Analyst and any other person authorized by the Minister by notification in the Gazette to act as such;

"pest" means any insect, rodent, bird , fish , mollusc, nematode, fungus wed, micro-organism, virus or other kind of pant or animal life which is injurious, troublesome or undesirable to crops, stored products, processed foods, wood, clothes, fabrics or inanimate objects or which are objectionable from the view point of public health and hygiene, and shall also include ectoparasites and endoparasites of man and domestic animals other than any pest which may be Specifically included or excluded by regulations made under this Act.

"pesticide: means nay substance intended for use or used for controlling a pest and shall include active ingredients, adjuvant and pesticide formulations;

"Pesticide formulations" means any mixed or unmixed products sold supplied, imported for use, or used for one or more of the following purposes, namely, for destroying or repelling any pest within the meaning of this Act or for preventing its growth or mitigating its effects, as a plant regulator defoliant or desiccant or as an adjuvant and includes any similar product so designated by regulations made under this Act.

# CONTROL OF PESTICIDES (AMENDMENT) ACT NO. 6 OF 1994 (CERTIFIED ON 6TH APRIL, 1994)

L.D - 0.52/87

## AN ACT TO AMEND THE CONTROL OF PESTICIDES ACT NO. 33 OF 1980

WHEREAS Parliament deems it expedient in the public interest for the Government to control the pesticide industry including the import, packing, labeling, storage, formulation, transport, sale and use thereof:

BE it enacted by the Parliament of the democratic Socialist Republic of Sri Lanka as follows;

1 This Act may be cited as the Control of Pesticides (Amendment) Act, Short title No. 6 of 1994.

2 The long title of the Control of Pesticides Act, No. 33 of 1980 hereinafter referred to as the "principal enactment") is hereby amended by the substitution for the words "FORMULARY COMMITTEE" of the words "TECHNICAL AND ADVISORY COMMMITTEE"

3 Section 2 of the principal enactment is hereby repealed and the following section substituted therefor:- Replacement of Section 2 of the principal enactment.

| | |
|---|---|
| "Application of the Act" | 2. This Act shall apply to active ingredients and pesticide formulation with adjuvant, other than such formulations as are set out in the Schedule to this Act". |

4 Section 3 of the principal enactment is hereby amended by the addition immediately after subsection (2) of that section, of the following new subsections;- Amendment of section 3 of the principal enactment

"(3) There shall be appointed such number of Assistant Registrars of Pesticides as may be necessary for the purposes of the Act.

(4) Every Assistant Registrar of Pesticides may exercise all or any of the powers of the Registrar of Pesticides and in the exercise of such powers shall be subject to the control and direction of the Registrar of Pesticides".

5 Section 4 of the principal enactment is hereby amended as follows:- Amendment of Section 4 of the principal enactment.

(1) by the repeal of subsections(1) and(2) of that section and the substitution therefore of the following subsections:-

(2) There shall be a Pesticide Technical and Advisory Committee Hereinafter referred to as the "Committee".

The Committee shall consist of:

(a) the following ex officio members namely:-

(i) the Director of Agriculture (hereinafter referred to as the "Director") or any officer nominated by him.

(ii) the Registrar of Pesticides (hereinafter referred to as the "Registrar") or any officer nominated by him.

(iii) The Government Analyst or any officer nominated by him;

(iv) the Secretary to the Ministry of the Minister in charge of the subject of Health or any officer nominated by him.

(v) the Commissioner of Labour or any officer nominated by him;

(vi) the Director of the Tea Research Institute established under the Sri Lanka Tea Board Law No. 14 of 1975, or any officer nominated by him;

(vii) a member of the Sri Lanka Standards Institution established under the Rubber Research Ordinance (Chapter 439) or any officer nominated by him;

(viii) a member of the Sri Lanka Standards Institution established by the Sri Lanka Standards Institution Act, No. 6 of 1984, nominated by the Chairman of such Institution or any officer nominated by such member;

(ix) the Director of the Coconut Research Institute established under the Coconut Development Act, No. 46 of 1971 or any officer nominated by him;

(x) a Senior Officer of the Central Environmental Authority established by the National Environmental Act No. 47 of 1980, nominated, by the Chairman of such Authority; and

(b) not more than five persons who are experienced in the use of pesticides, pest control and related scientific disciplines who shall be appointed by the Minister:

Provided however, that no person having a commercial interest in the manufacture, import, marketing, formulation, storage, transport or sale, of pesticides shall be appointed; and

by the substitution for the marginal note to that section of the following marginal note:-

"Pesticide Technical and Advisory Committee".

6. Section 5 of the principal enactment is hereby amended as follows:- Amendment of section 5 of the principal enactment.

(1) by the repeal of subsection (1) of that section and the substitution therefore of the following sub section:-

"(1) The functions of the Committee shall be :-

(a) to advise the Registrar or any important matter relating to the registration of pesticides, approval of containers, the storage, formulation, import, sale and use of pesticides and such other matters relating thereto as may be prescribed;

(b) to appoint technical sub-committees to assist such committee in the performance of its functions. "; and

(c) in paragraph (b) of subsection (2) of that section by the substitution for the words " at a meeting of all members of the Committee" of the words "at a meeting of the Committee".

7. Section 6 of the principal enactment is hereby amended in subsection (2) of that section as follows.

(i) by the repeal of paragraph (b) of that subsection and the substitution therefore, of the following paragraph:- Amendment of section 6 of the principal enactment.

(ii) by the repeal of paragraph (f) of that subsection and the substitution therefore of the following paragraph-
"(f) a statement of the claim made by the manufacturer or producer of such pesticide as to sits uses, potency, stability in storage and the period of usage and a statement with regard to its efficacy and crop safety supported by the result of any experimental data as evidence;"; and

(iii) by the repeal of paragraphs (g), (h), (I) and (j) of that subsection and the sibstitution therefor, of the following paragraphs:-

"(g) a statement of the composition of such pesticide, its chemical identity including the chemical and physical properties of the technical grade material from which the pesticide formulation is prepared, its net weight and the identity and amount of isomer impurities and other by products.

(h) adequate toxicological data concerning such pesticide including information on antidote, to show that when used as recommended the product would not cause ill effects to those applying it or to the consumer of treated crops;

(i) methods of analysis of the pesticide formulation with the results of the anlysisas evidence; and

(j) methods of detemining the residue of such pesticide in foods and feed after application as directed with the results of any experiments as evidence".

8 Section 7 of the principal enactment is hereby amended in subsection (1) of that section by the repeal of paragraphs (a) and (b) of that subsection, and the substitution therefor of the following paragraphs:- Amendment of section 7 of the principal enactment.

"(a) register the pesticide and issue a licence valid for a period not exceeding three years; or

(b) register the pesticide provisionally, and pending the issue of a licence or in lieu of a licence issue a provisional permit valid for a period not exceeding twelve months for restricted marketing and use of the pesticide in accordance with the conditions stipulated in such permit;".

9. Section 8 of the principal enactment is hereby amended by the repeal of subsection (1) of that section, and the substitution therefor of the following subsection:- Amendment of section 8 of the principal enactment.

8 The Registrar shall not issue a licence under paragraph (a) of subsection (1) of section 7 unless the copy of the draft label submitted with the application contains the following particulars:-

(a) the trade name under which the pesticide shall be sold and its use category;

(b) the common names of the active ingredients of the pesticide, in characters not smaller in size than half the size of those used for the trade name of the pesticide and in a position placed directly below the trade name;

(c) the contents of all active ingredients expressed, in the case of a solid formulation as a percentage or as grams per kilogram and in the case of liquid formulation, as grams per litre;

(d) the name and address of the holder of the licence;

(e) adequate directions concerning the manner in which the pesticide is to be used, including information as to the period of time which should elapse between the last application of the pesticide and harvesting and marketing of the crop to which it is applied and where the Registrar deems appropriate the shelf-life of the pesticide;

(f) adequate warning and precautionary symbols and statements including first-aid and antidote information supplemented, when necessary, in a leaflet in the package, giving detailed instructions;

(g) the word "registered" which shall be an official symbol indicating that the pesticide has been licensed under this Act and the licence number assigned to it by the Registrar;

(h) any other particulars as may be prescribed by regulation under this Act. in Sinhala and Tamil languages:
Provided, however, the particulars set out in paragraphs (a), (b) and (f) shall in addition be stated in English;

10 Section 9 of the principal enactment is hereby repealed and the following section substituted dtherefor:- Replacement of section 9 of the principal enactment.

"Approved pesticides. 9. Where the Registrar issues a licenc under subsection(1) of section 7, he shall-
(a) declare that pesticide to be an approved pesticide;
(b) classify such pesticide as a restricted general, or domestic pesticide,
by Order published in the Gazette"

11 Section 14 of the principal enactment is here by amended as follows. Amendment of section 14 of the principal enactment.

(1) in paragraph (b) of that section by the substitution for the words "such pesticide is contained in an approved container", of the words "such pesticide in contained in an approved leak proof container".

(2) by the repeal of the proviso to that section, and the substitutin, therefor of the following proviso:-
"Provided however, that the preceding provisions of this section shall not apply in any case.

(i) Where on the recommendation of the committee, any pesticide is imported for the purpose of counteracting an epidemic or pest out break;

(ii) Where any approved research organisation imports with the written consent of the Registrar any specified quantity of pesticides or pesticide formulation for the purpose of research".

12. Section 21 o the principal enactment is hereby amended as follows:- Amendment of Section 21 of the principal enactment.

(1) In subsection (1) of that section by the substitution, for the words "such number of officers of his departmetn", of the words "such number of agricultural officers"; and

(2) in subsection 2) of that section by the insertion immediately after paragraph (b) of that subsection of the following paragraph-

"(bb) seize and detain, for such time as may be necessary for the purposes of a prosecution under this Act any pesticide which has been offered for sale in contravention of section 14 or section 21A, aftr compiling a list of such pesticides and handing over copies of such list to the seller or his agent and to the Registrar;".

13 The followin new section is hereby inserted immediately after section 21 and shall have effect as section 21A of the principal enactment:- Insertion of new section 21A in the principal enactment.

"prohibition of sale without certificate. 21A, (1) No person shall sell or offer forsake any pesticide except under the authority of a certificate issued by an authorized officer.

'(2) Notwithstanding the provisions of sub section (1) and person may sell or offer for sale any domestic pesticide wthout obtaining a certificate.

(3) Every application for a certificate shall be made to an authorized officer, in such form as may be prescribed.

(4) Every certificate for sale shall
(a) be in the prescribed form;
(b) unless it is cancelled earlier, be in force for a period of twelve months from the date of its issue.

(5) Every certificate referred to in subsection (1) authority shall be exhibited in a conspicuous place whtere pesticide is sold".

14 Section 23 of the principal enactment is hereby amended by the repeal of subsection (1) of tht section, ad the substitution therefor, of the following subsection. Amendment of secton 23 of the principal enactment.

"(1) (a) Every application for the licensing of a pesticide under section 6; or

(b) Every applicaton for the renewal of a licence of a pesticide under section 7 or

(c) every application for a certificate for sale of pesticide under secton 21A; or

(d) every appeal against any rejection, cancellation, suspension, withdrawal or modification under section 13.
Sahll be accompanied by such fee as may be prescribed by regulations made under this Act.

15 Section 24 of the principal enactment is hereby amended in subsection (1) of that section by the substitution for the words 'be sentenced to imprisonment of either description for a period of two years", of the words "be liable to imprisonment of either description for a period not exceeding two years or to a fine not exceeding ten thousand repees or to both such fine and imprisonment". Amendment of section 24 of the principal enactment.

16 The following new section is hereby inserted immediately after section 24 of the principal enactment and shall have effect as section 24A of that enactment:- Insertion of new section 24A in the principal enactment.

"Persons authorized to institute and conduct, prosecutions.

24A (1) For the avoidance of doubt, it is hereby declared that the Registrar or any Food Inspector, Public Health Inspector, Grama Niladhari, Inspector of Labour or any public officer authorized in that behalf by the Registrar shall be empowered to institute proceedings and conduct prosecutions for offences under this Act.

(2) Any person authorized under subsection (1) by the Registrar shall have the power to ascertain whether-

(a) the packaging of pesticide is effected in compliance with the provisions of this Act. ;

(b) any pesons has contravened the provisions of section 16;

(c) a certificate for sale has been obtained by every seller.

(3) For the purposes of exercising the powers referred to in subsection (2), every officer authorized under subsection (1), may enter any premises, after sufficient notice at all resonable hours of the day in the discharge of his functions under this Act, Such officer shall not be liable on account of such entry or on account of anything done bona fide in such premises aftersuch entry which is necessary for the exercise performance and discharge of his powers, duties and functions under this Act".

17 Section 26 of the principal enactment is hereby amended in subsection (1) of that section as follws:- Amendment of section 26 of the principal enactment.

(i) in paragraph (v) of that subsection by the substitution for the words "pesticide formulation; and ",of the words" pesticide formulation;";

(ii) In paragraph (iv ) of that subsection by the substitution for the words "manner of use of pesticides", of the words" manner of the sale and use of pesticides and ".

(iii) by the addition immediately after paragraph (vi) of that subsection of the following pargraph:-

"(vii) prohibiting the importation or manufacture of any pesticide which is considered to be injurious to public heath".

18 Section 27 of the principal enactment is hereby amended as follows:- Amendment of section 27 of the principal enactment.

(i) the substitution for the definition of "authorized analyst" of the following definition:-

"authorized analyst" means the Government Analyst, the Aditional Government Analyst, a Deputy Government Analyst, a Senior Assistant Government Analyst, an Assistant Government Analyst, the Chemist of the Central Agricultural Researach Institute of the Department of Agriculture, an Analyst of the Ceylon Institute of Scientific and Industrial Research, an Analyst of the Sri Lanka Standards Institute and any other officer authorized by the Minister by notification in the Gazette,".

(ii) by the insertion immediately after the definition of "authorized analyst" of he following definitions:-

"domestic pesticide" means a pesticde formulation in which the active ingredients are of a low toxicity or in wich such active ingredients are present at very low levels and are unlikely to be hazardous in normal use;

General pesticide" means a pesticide formulation other than a pesticide formulation classified as a restricted pesticide or a domestic pesticide;';

(iii) in the definition of 'pest' by the substitution for the words "ectoparasites and endoparasites of man", of the words" ectoparasites of man";

(iv) in the definition of "pesticideformulations" by the substitution for the words designated by regulations made under this Act." of the words "designated by regulations made under this Act"., of the words "designated by regulations made under this Act, but does not include pheromones.;" and

(v) by the addition immediately afater the definition of "pesticide formulations", of the following definition:-
"restricted pesticide" means a pesticide formulation likely to have adverse effects on humna health, specific non target organisms and on the environmen and in respect of which limitation, have been placed as regards its handling pattern, use or distributions."

19 The following new Schedule is hereby added at the end of the principal enactment:- Addtion of new schedle to the principal enactment.

"Schedule (Section 2)
Naphthalane
Paradichloroherine
Pet. Care Shampoo
Non toxic glues for pest control devides"

20 In th event of any inconsistency between the Sinhala and Tamil texts of this Act, the Sinhala text shall prevail. Sinhala text to prevail in case of inconsistency.

# Part - VII

## Special Paper

(Development of a Web Based Pesticide Information Sharing System for SAARC Countries)

# Development of a Web Based Pesticide Information Sharing System for SAARC Countries

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## ABSTRACT

Information sharing has taken a tremendous leap with the use of modern Information and Communication Technology (ICT) tools and infrastructure facilities in the world. Among many other fields, agriculture is no exception for the need to share information for various purposes. Among many other requirements, pesticide related information, which are generated specific to a country or a region but useable by many, are not readily available for personnel involved in agriculture related decision making at field and regional levels. Presently, all the information available are scattered throughout the SAARC countries in isolation and are documented in volumes of books and journals, which are not in readily accessible form for the relevant users in the other regional countries.

In order to address this issue, a web based pesticide information management and sharing system was developed. The developed system facilitates sharing of vital information on pesticides and aspects related to their use(s) and misuse(s) for the stakeholders of agriculture and agencies of agriculture research and development in SAARC countries. This new system was developed while attempting to automate the process keeping in view the database integration approach. User-friendliness is ensured in the application through various controls provided by incorporating a rich user interface.

The developed system makes the overall system management much easier and flexible. It can be accessed over the Internet for adding as well as receiving information. The pesticide information can be stored in a centralized database, which can be maintained by a central entity like the SAARC Agriculture Center, Dhaka as initiatives have already been taken to collect relevant data of the South Asian countries in conventional form. Only a part of the data was used for initial developments. Once the development is completed, all the data will be transformed into appropriate form to enhance the information network and to make them available to member countries.

The system is designed using MySQL and PHP technology. Information stored in a MySQL database hosted on a web server can be accessed from anywhere in the world with a computer having internet access. The developed software system interacts with the database model and provides the information required by the users. The system is to be installed on a suitable server environment once the initial trials and testing are completed. The administrative and logistical support of the SAARC Agriculture Center is being sought to accomplish this step.

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## INTRODUCTION

Agricultural production in the developing world has been facing the pressing challenge to increase the production rates to meet the ever rising demand. In order to achieve this, especially in South Asian countries, farmers have been using high yielding varieties (HYVs) and chemical methods to increase yield and reduce pesticide usage and pests related losses. Even though HYVs provide expected boost in production, over-dependence and improper application practices of pesticides, on the other hand, lead to development and multiplication of pests and diseases as well (Oerke *et al*., 1995) and compel to use more and more pesticides for maintaining steady crop production since insect pests alone could cause 30-52% loss of total production (Hasanuzzoha, 2004; Kabir, *et al.,*1996).

In the above backdrop, heavy use of various pesticides (Anon. 2002) to protect the crops against the colossal yield loss is inevitable. However, irrational uses of pesticides lead to the destruction of natural crop protectors, development of resistance (Forrester, 1990), disruption of agro ecosystem, increased human health hazards and elevated environmental pollution. Hardcore data on these aspects are either lacking or scattered throughout the SAARC countries in isolation.

It is not a secret that SAARC countries invest significant resources on research and development (R&D) activities on pesticides and generate a wealth of information and data annually. Though the climate, crops grown and pest incidences are almost similar in most of the SAARC countries, there is no established credible system of sharing information among them even though such systems are available in other developed countries (PAN Pesticide data base, Pesticide action Network, UK etc.). Moreover, R&D activities on pesticides and their human and environmental effects are not equally done among the SAARC member countries. Therefore, sharing of known available information by establishing an information exchange system that encompasses authorities, agencies and research institutes related to pesticides related issues in SAARC countries, can not only be very much effective for sustainable management of destructive and deleterious pests prevalent in this region but also be useful in reducing the environmental and health risks of the toxic pesticides and the cost involved in pesticide research and evaluation. This will allow countries to share not only the information but also the work and experience, and to save a large amount of money invested by individual countries in repeating the same exercise done in another country.

To overcome the limitations such as difficulties in retrieving and updating data, highly time-consuming manual handling of the whole system, less accuracy and unreliability in keeping the data in case files etc., and to make the system work more accurately, a computerized information handling system is hereby proposed. In order to achieve convenient information sharing among all the stakeholders, it is hypothesized that developing a web based information sharing system using available technologies like PHP and MySQL, will contribute to rectify or minimize some of the above deficiencies and be beneficial to the SAARC countries in sharing the scattered hardcore information on pesticides and in making the pesticide use more effective, efficient, and safe, while reaping best benefits of their use.

It is unfortunate that no credible system of sharing information among the SAARC countries is established yet, even though such systems are available in other developed countries (Forrester, 1990; Gunning *et al.,* 1989; Hasanuzzoha, 2004). At present, all the information available are scattered throughout the SAARC countries in isolation and are documented in volumes of books and journals, which are not in readily accessible form for the relevant users in the other regional countries.

## Pesticide Networks in Operation

Information networks transmit information into enhanced knowledge, business or social aims. Essentially, information networks are linked to exchange information between interest groups within and between human institutions such as companies, universities, research organizations, and communities.

It is no secret that there are many agro-industries that extensively use and contribute to modernized information networks and such web based resources. However, a large majority of available web based Pesticide information networks are based in the USA, and exclusively host information pertaining to different States i.e. California, New York, Arizona, New Hampshire, New Jersey, Montana, and Texas. Given below are brief descriptions of some of the important sites, which provide information on pesticides.

1. National Pesticide Information Center (NPIC) hosted by Oregon State University**,** maintains a website (www.**npic.orst.edu**)**,** which provides science-based information about pesticides and pesticide-related topics.
2. West Virginia Information Network for Pesticides & Alternative Strategies Program maintains W.VA. Pesticide Information Network .
3. The Pesticide Action Network (PAN) Pesticide Database is a one-stop location for toxicity and regulatory information for pesticides.
4. Texas Pesticide Information Network (Texas PIN) was formed in 1998 to promote better public understanding on how are pesticides used in Texas and how does pesticide use affect human health and the environment.
5. US Environmental Protection Agency (US EPA) maintains a database on pesticide and related information.
6. USA Office of Pesticide Programs, Office of Prevention, Pesticides and Toxic Substances (OPPTS), Environmental Protection Agency (EPA) database is also noteworthy.
7. National Pesticide Information Retrieval System's website contains information for pesticide products currently registered by many state pesticide regulatory agencies in the United States.
8. FAO Pesticide Management is an activity carried out within the overall framework of the Plant Production and Protection Division of the FAO. It is designed to work together with member countries and other International Organizations as a partner to introduce sustainable and environmentally sound agricultural practices that reduce health and environmental risks associated with the use of pesticides.

It is apparent that the above networks / information systems / databases provide information on specific area / state of the country and the systems responsible for the provision of such information are well established as some networks are in operation since 1998. The information in these sites contains rather qualitative aspects of pesticides and their use than quantitative data. However, the Pesticide Action Network (PAN) Pesticide Database and National Pesticide Information Centre provide useful and balanced primary as well as advanced information compared to other networks, which qualifies it to be considered as a model for the development made in this project.

**Table 1. Comparison of Existing Pesticide information Networks and Proposed Network for the SAARC Region**

| | In Developed Countries (already exists) | Proposed for SAARC Countries |
|---|---|---|
| 1. | In operation since long | Not yet started |
| 2 | Legislation and laws are in place since long | Some member countries do not have legislations |
| 2 | Most of them provide state wise advanced data | Country-wise primary data at the beginning |
| 3 | Funded through private/public partnership | Public funding |
| 4 | Hosted by Universities/NGOs | SAC /Government Departments |
| 5 | Interlink with other related Institutes/Universities/Labs etc. | Such links may be few but can be provided depending on the availability |
| 6. | Provide more data on qualitative aspects related to pesticides and their uses | More quantitative rather than qualitative data envisaged. |
| 7. | Wide spectrum of users including consumers/framers | Quite narrow group of users as availability of internet facilities are limited. |
| 8. | Data for uploading is collected by a National Center/ University/Private Sector | Data will be provided by Focal Point Scientists identified by respective Government Dept/Universities |
| 9. | Technology used- Most of the sites had used HTML. | MySQL and PHP |

## Objectives

The main objective of this project is to develop a web-based information sharing system for rapid collection, retrieval and sharing of vital information on pesticides and aspects related to their use(s) and misuse(s) for the stakeholders of agriculture and agencies of agriculture research and development in SAARC countries with the use of appropriate software. The proposed system is hypothesized to be useful in the following scenarios / tasks:

1. Establish an information system for real-time sharing of updated knowledge, technologies and resources related to pesticides and pesticide management of the region.
2. Assist with information for effective interventions in pest outbreaks and pest management options (both chemical and non-chemical).
3. Compile details on pesticides in use, mode of action, their chemical nature, recommended uses, application details and restrictions, pattern and trends of pesticide use, records of health and environmental incidents.
4. Provide information that will assist researchers seeking for a better understanding of the environmental fate of pesticides introduced into the environment, evaluate the efficacy of pesticides and identify causes of pest-resistance.
5. Develop a system that can provide data necessary to evaluate current trends in pesticideuse.
6. Provide a common platform for sharing of work specifically on evaluation, registration and residue analysis of pesticides.

## The Implementation / System Development Process

There are three user categories in the system, namely regional administrators, country administrators, and general users. Guest User interacts with the proposed system using an ordinary web browser. Alternatively, the proposed software system interacts with the database model and provides the information required by the users. Figure 1 shows the interaction among these users.

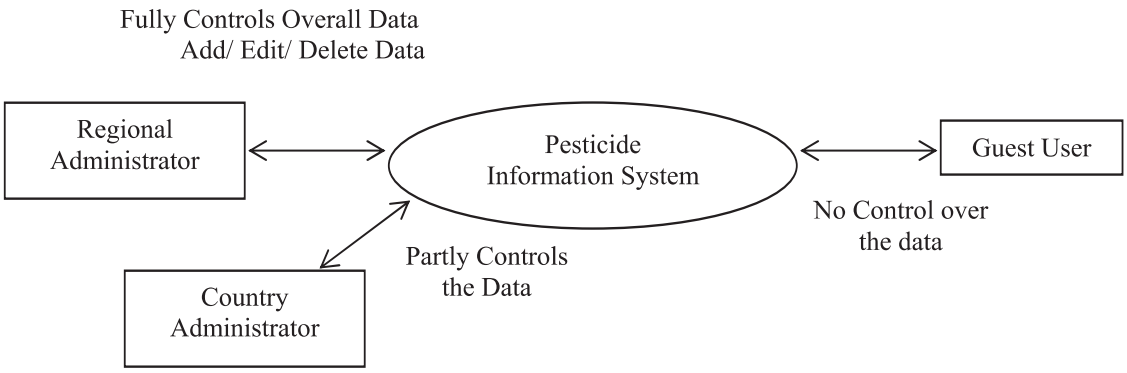



*Figure 1. Users that interact with the proposed system*

The user authentication feature allows the system to identify a user and ensure the user's authority and grant permission by using a login ID and a password. A guest user may require registering in the site on their first visit. Guest users are able to browse all the information but are not entitled to edit the added information. Only Regional and Country Administrators are able to add fundamental information and commentary information and to update them.

Since each user has a different permission to edit a record, the user interface of the system changes accordingly. For example, if a country administrator visits the fundamental information, which is created by him/her, a link to edit the information appears. The country administrators are allowed to add, update and delete data of the country, which they belong to. Likewise the chief administrators would be given access to the entire system and would have full control over data.

## Materials and Methods

A database provides facilities for controlling data access, enforcing data integrity, managing concurrency, and provides the ability to logically present information to users. For this purpose it was decided to use PHP (Hypertext Preprocessor) (www.npic.orst.edu) scripting language and the MySQL (Structured Query Language) [http://www.mysql.com/] relational database for this design considering their compatibility and convenience of use.

PHP is a widely-used general-purpose scripting language and one of the biggest reasons to choose PHP is that it is of Open Source Code type. The actual source code that provides the PHP working environment is available to the public for free, while the source code for products such as ASP is not. PHP is particularly a useful programming language because it allows for advanced programming and is easy to integrate with web pages. Another advantage of PHP is that the language interfaces very well with MySQL, a popular type of online database system.

MySQL is a commercial grade database application that is made available free under Open Source to anyone. The MySQL database has become the world's most popular open source database because of its consistent fast performance, high reliability and ease of use.

Information stored in a MySQL database hosted on a web server can be accessed from anywhere in the world with a computer connected to the network. This makes it a good way to store information that needs the ability to change over time, but also needs to be accessed over the net.

Therefore, considering the benefits, MySQL was selected as the most suitable software to develop the database to address the problem.

Web sites also require a combination of technologies, which help in adding attractiveness, and dynamism to the pages. Here are some of the technologies, which will be used to create the web site and their contribution to the web design.

1. HTML: Hyper Text Markup Language or HTML provides the basis for creation of web pages. It creates text files, which are readable by web browsers. HTML files are very versatile as they permit delivering of image files, content and form fields to online users.
2. Photoshop: Photoshop provides tools to manipulate the images of the web site.
3. Flash: Interactive web pages, which have an interesting presentation form are created with the help of Flash software development platform.
4. JavaScript: JavaScript has very little to do with Java. JavaScript provides certain user interface controls, which can make a web site more interesting as well as add user friendly features on the web site. Mouse roll-overs, navigation drop downs and validation of web forms are some of the most practical uses of JavaScript.

There are many other user interface technologies, which can be put to use by designers. Some are well known and some might be a new path breaking technology. The above technologies are the ones, which are the most common and well known in the community.

The whole idea of a database-driven web site is to allow the content of the site to reside in a database, and for that content to be dynamically pulled from the database to create web pages featuring it for people using a regular web browser to view.

## System development steps

The developed web based pesticide information system considered three intended users namely, the regional administrator, country administrators and guest users. All the three users have access to the system, and are given access and editing privileges depending on their level of authentication granted.

The access privileges were designed so that regional administrator has access to the entire system and complete editing and user creation facilities, whereas country administrators have access to databases relevant to their countries. The regional administrator and country administrators maintain and update the database of the system periodically. Regional Administrator has the authority to update, edit, delete and add data to the system while country administrators are allowed only to update, edit, delete, add data to their relevant country databases. Guest user interacts with the proposed system using a web browser and they have no control over the data.

The inputs for the system include information about pesticide product that are used in SAARC countries, information about the SAARC countries, list of active ingredients of different registered chemical pesticides allowed in different countries along with their trade names and company names, information about the major crops, list of different banned chemical pesticides etc. The inputs under

the category of pesticide product that are used in SAARC countries include: Pesticide Product ID, Pesticide Product name, Country, Environmental and health effects etc. The inputs that fall under the category of information about the SAARC countries include: Country Name, Country ID etc. The inputs of different registered chemical pesticides include: Chemical ID, Chemical Name, Chemical Class, Chemical Description etc. The inputs that fall under the category of the information about the major crops include: Crop ID, Crop Name etc. The inputs that fall under the category of List of different banned chemical pesticides include: Banned Product ID, Product Name, Banning Date and Reason.

All these inputs are required to be fed to the system database with information. All the relevant inputs for the system are stored inside the database for future retrieval. All of the above pesticide information is stored inside the system's database. The database is facilitated by MySQL server.

The main features of the developed pesticide information system are as follows:

- 24 hrs remote access
- Printable information
- Get user feedback and queries (email generator)
- Links to other information networks related to pesticides

## Also it is designed to:

I. Assist with information and experience in banning and restricting pesticides causing problems under local conditions.

II. Assist with information for effective interventions in pest outbreaks and pest management options (both chemical and non-chemical).

III. Provide information about environmental and health effects of pesticides under local conditions and possible remedial options.

IV. Compile details on pesticides in use, mode of action, their chemical nature, recommended uses, application details and restrictions, pattern and trends of pesticide use, records of health and environmental incidents.

V. Provide information that will assist researchers seeking to better understand the environmental fate of pesticides introduced into the environment, evaluate the efficacy of pesticides and identify causes of pest-resistance.

VI. Encourage and sponsor the adoption of the best techniques for analysis of pesticides residues and to promote safe use of pesticides.

VII. Document problems, solution initiatives, constraints and regional strategies for implementation of international instruments that provide opportunities for exchange of information and collaborative study of problems faced by member countries.

VIII. Share work specifically on evaluation, registration and residue analysis of pesticides.

## The Design Process:

The design process of the database consisted of the following steps:

1. **Find and organize the information required** – All types of information that must be recorded in the database were collected. Extreme care was taken to include all data types at this stage as adding more data types after the system development would require major changes and may consume additional development time.

2. **Divide the information into tables -** Divided the information items into major entities. Each subject then becomes a table.

3. **Turn information items into columns** – The information to be accumulated were classified into different tables at this stage. Decision was taken on what information is better suited in different tables. Each item becomes a field, and is displayed as a column in the table. For example, Banned Products table might include fields such as Banned Product Name, Banning date and Banning Reason.
4. **Specify primary keys -** Choose each table's primary key. The primary key is a column that is used to uniquely identify each row. An example might be Product ID.
5. **Set up the table relationships** – Checked each table for how the data in one table is related to the data in other tables. Added fields to tables and created new tables to clarify the relationships, as necessary.
6. **Refine the design** – Analyzed the design for errors. Created the tables and added a few records of sample data. Checked the results of the tables and made adjustments to the design, as needed.
7. **Applied the normalization rules -** Applied the data normalization rules to see if the tables are structured correctly and made adjustments to the tables, as needed.

## RESULTS AND RECOMMENDATIONS

Initially the system was developed with sample data compiled by the Focal Point Scientist for Sri Lanka. These data include information about pesticide, list of active ingredients of different registered chemicals with their trade names and company names etc, under the categories of product ID, pesticide product name, country, environmental and health effects etc. At the workshop consensus was reached among the scientists and relevant personnel involved on the way forward of this activity. As future steps, more Regional data must be included. However, prior to that, a permanent home for this must be found, installed, and data must be added. The system is to be installed on a suitable server environment once the initial trials and testing are completed. The administrative and logistical support of the SAARC Agriculture Center is being sought to accomplish this step. Once fully functional the data sharing system will provide all necessary data on pesticide under one roof for the stakeholders of SAARC countries, which will help them not only to share information but most importantly to share work, which may otherwise be expensive, if done in isolation.

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# Part - VIII

# APPENDICES

SAARC

**SAARC Agriculture Centre**
**Dhaka, Bangladesh**

**Appendix-A**

## *Concept Note*

# SAARC Pesticide Information Network (SPI Net)

## Background

Economies of the most of the South Asian countries are predominantly depend on agriculture or agriculture allied industries. On an average the GDP share of agriculture sectors of the SAARC countries is around 33% while the labor force engaged in agriculture sector is around 68%. Increased use of both modern high yielding varieties of crops and chemical fertilizers in the region paved the way for highly favorable situation for the development and multiplication of pests and diseases.

The estimated yield loss due to pests and diseases incidence annually ranges from 30 to 52%. In this back drop use various pesticides as effective measure of protecting the crops against this colossal yield loss is inevitable.

A pesticide is any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest. Pesticides include insecticides, herbicides, fungicides, rodenticides, germicides and algicides.

For some decades, there has been a pro-pesticide bias in research and extension. This is now giving way to a general bias in favor of IPM. Though, IPM policies are popular, in practice programs based on IPM are difficult to implement. In spite of extensive promotion of IPM, GAP and organic farming by respective Governments, chemical pesticides are still playing a major role in pest management throughout SAARC countries.

Free market approach to pesticide sales and distribution along with vigorous advertisement campaigns carried out by the private chemical companies on a greater range of chemical products available even in remote villages created mindset among farmers that these agro-chemicals can solve host of their agricultural problems. This situation is further aggravated due to the fact that most of the information farmers receive about a pesticide comes from the company which makes and sells it, via the retailer. Most village pesticide dealers are not well informed about what pesticide to use for a particular pest problem, or how to use it safely. Since they are interested in selling as much of their products as possible, they have no interest in minimizing pesticide use.

Many of the harmful effects from applying chemical pesticides occur not so much from pesticide use but from pesticide misuse. This includes over application, repeated application of the same pesticide, poor application technology, and even the use of pesticides to catch fish. It was suggested that rather than focus on new technologies such as biological control and IPM, it might be more effective to make sure that pesticides are used properly.

The excessive uses of pesticides have no doubt adverse effects on environment like killing of beneficial insects, birds, fish, environmental pollution and human health hazards by leftover residues of pesticides. Different crops especially vegetables and fruits are harvested, marketed consumed without knowing any residue status. This is most likely to cause serious health hazard to the consumers.

Lack of information on pesticide use, misuse, and harmful effects on both environment and consumers impairs the effective and efficient implementation of existing laws for protection of public health, worker health, food safety, drinking water and fish and wildlife habitat from pesticide contamination. Moreover, research and development activities on pesticides and its environmetal effects are not equally done among the member countries of SAARC. Especially information on pest

resistance, pest resurgence, pesticide residue on food and feed, sudden pest out break, natural enemies destruction *etc.,* are very scanty in many member countries. Sharing of available information by establishing an information exchange system of authorities, agencies and research institutes related to pesticide of SAARC countries, can not only be very much effective for sustaniable management of destructive and deletorious pests attack of this region but also assist in reduction of the environmental and health risk of the toxic pesticides.

SAARC countries invest significant resources in evaluating agricultural pesticides before they are marketed (or re-evaluating pesticides that have been in use for many years) to ensure that they do not pose unacceptable risks to human health and the environment. Since many pesticides used in SAARC countries are the same, it is recognized the substantial benefits that can be gained if the task of pesticide evaluations for registration and re-registration is shared, rather than duplicating each others' work.

Hamonized approaches make it easier for countries to share not only the information but also the work. In this context "work sharing" means, for example, dividing the work required to review a pesticide data submission among two or more countries, or one country using another's evaluation to help it with its own national review. The objective of work sharing is to reduce the overall workload. While respecting the rights of each country to make its own regulatory decision, work sharing should result in the same or a higher quality of assessment and should not delay decision-making. Greater regional harmonization of pesticide use, its deleterious effects both on consumers and environment, registration approaches could also reduce the need for duplicative testing by industry, thereby saving resources.

## Objectives:

1. Promote regional cooperation in harmonizing pesticide management issues and strategies and to have uniform and effective legislation, definitions, regulations, and enforcement
2. To minimize the duplication of activities done by individual countries by sharing work on evaluation, residue analysis and registration of pesticides.
3. To facilitate the implementation of the FAO code of conduct on distribution and use of pesticides, Rotterdam Convention and other related international instruments in the region and compliance status of each country with different international instruments/conventions related to pesticide and to strengthen regional participation and voice in global forums on pesticides issues
4. To serve as an official information resource link sharing of updated knowledge, technologies and resources related to pesticides, pesticides management for pest management of the SAARC countries.
5. To assist with information and experience in banning and restriction of pesticides causing problems under local conditions.
6. To assist with information for effective interventions in pest outbreaks and pest management options (both chemicals and non-chemicals).
7. To provide information about environmental and health effects of pesticides under local conditions and possible remedial options.

## Specific Objectives

1. To compile details on pesticides in use, mode of action, their chemical nature, effective pests, pattern and trends of pesticide use.
2. Enhancing the farmer's right-to-know about pesticide

3. Providing information that will assist researchers seeking to better understand the environmental fate of pesticides introduced into the environment, evaluate the efficacy of pesticides and identify causes of pest-resistance.
4. Providing an appropriate cost-effective approach to developing sound scientific information link on pesticide use
5. Providing data necessary to evaluate trends in pesticide use; effectiveness of pesticide reduction strategies such as Integrated Pest Management (IPM); evaluating the potential for alternative pest management strategies.
6. Promote uniform and effective legislation, definitions, regulations, and enforcement
7. Encourage and sponsor the adoption of the best techniques for analysis of pesticides residues and to promote safe use of pesticides
8. Documentation of problems, solution initiatives, constraints and regional strategies for implementation of international instruments provide opportunities for exchange of information and collaborative study of problems face by member countries:
9. Sharing of work specifically on evaluation, registration and residue analysis of pesticides

## Methodology

Total activities will be completed within two year. Brief description of year wise activities is given below:

## Year 1

| | Activity | | Remarks |
|---|---|---|---|
| 01. | Preparation of a Concept note | : | It will be done and finalize within first two months of the project period. |
| 02. | Selection of focal point scientists | : | One scientist having enough exposure on national pesticide research and developmental work and policies will be selected from each member country. They will be considered as the focal point scientist of respective country. |
| 03. | Information collection and compilation | : | The focal point scientist will collect information based on the following guide and prepare a comprehensive country report. Information collection and preparation and submission of the country report will be done within five month time period by the focal point scientists. |
| 04. | Technical editing of the country report | : | After submission of the country reports to SAC, editing will be done by a renowned scientist, selected by SAC. |
| 05. | Printing and distribution of CDs | : | Compilation and printing of country reports will then be done and distributed among the member countries. |
| 06 | Development of a web based link | : | Suitable program will be developed at SAC with the help of computer division of SAC. |

## Year 2

| | Activity | | Remarks |
|---|---|---|---|
| 01. | Arrangement of a workshop | : | In the year two, a workshop will be organized e in Peradeniya, Sri Lanka, Dhaka, Bangladesh or in Katmandu, Nepal. Two leading scientists/educationists having enough experience on pesticide research and developmental works along with the focal scientists from each country will be invited in that workshop. Each country papers will be thoroughly discussed in the workshop and necessary correction/modification will be done. |
| 02. | Final editing | : | Corrected/modified version of the country paper will then be edited by a well experienced scientist, selected by SAC. |
| 03. | Printing as well as on-line launching of the Regional net work | : | Printing of final version of the report will then be done and distributed among the member countries. As well as launching of the on-line regional network will be done. |

## Guide for Reporting Information/Data for SPI Net

## Name of the Country:

1. Introduction
2. Brief history of chemical pesticide use and trends in pesticide use (crops and location wise, statistics on pesticide use)
3. Brief information about the country in relation to major crops, crop losses due to insect pest and diseases attack (crop wise and all major crop should be included).
4. List and brief description of authorities, agencies and research institutes related to pesticide along with their short activity lists.
5. Description about pesticide registration process
6. Chemicals or alphabetized Chemical List of different registered chemical pesticides (insecticides, miticides, rodenticides, fungicides, bactricides, nematocites, bio-pesticides) along with their trade names and company's name
7. List of different banned chemical pesticides, date of banning, cause of banning, proved health hazard due to those pesticides before banning
8. Measures adopted for pesticide safety and information on the evaluation of the pesticides risk.
9. List of pest outbreak and their management options
10. List of resistant pest species developed along with scientific evidence and the descrption of the institutions where the research works have been done.

11. Available information about environmental and health effects of different pesticides under local conditions and possible remedial options (if any)
12. Available information about pesticide residue on food, water, soil, environment *etc.,* and methods of monitoring
13. Use of IPM, natural enemies, (predators and parasitoids) entomopathogenic microbes and fungi., insect sex pheromones botanicals, bio-pesticide, transgenic crops and indigenous knowledge in biological pest control
14. Government initiative against pest outbreak, resistance, resurgence *etc*.
15. Suggestion and recommendations specially on possibilities on work sharing
16. Local references
17. Appendix
    a) Policies, ordinance, laws or regulations pertaining to pesticide use, registration *etc.*
    b) Key persons engaged/involved in pesticide related activities (research and development) with their mailing addressess and contact numbers.
    c) Photographs of acute health hazard, environmental effects, pest outbreak etc. due to indiscriminate use of chemical pesticides (both hard and soft copies). Composition of the photographs highlighting the subject is essential. Resoulation of the pictures should be 300 DPI (dot per inches).

**Appendix-B**

# RECOMMENDATIONS OF REGIONAL CONSULTATIVE WORKSHOP ON SAARC PESTICIDE INFORMATION SHARING NETWORK (SPINET) HELD ON 30 JUNE-1 JULY 2011

The recommendations presented below under three broad categories have been compiled based on the Country Report presentation, discussions of participants and comments on country report and discussions in the Regional Consultative Workshop held on 30 June – 01 July 2011 in Sri Lanka.

## 1. Collaborative Activities:

1. As part of Pesticides stewardship, undertake pesticides safety campaign across SAARC countries through private-public partnership.
2. Establish Robust Pesticides Surveillance and Monitoring Network across SAARC countries through SAARC coordinated projects.
3. Undertake common research project(s) for solving common problems related to pesticides (e.g., pesticides residue studies) and pests (Pesticides resistance management).
4. Organize comprehensive training programs for the Pesticides Spray Operators, Spray Applicators, Pesticides Handlers on safety measures and occupational hazards.
5. Organize training program on methods of pesticides application for the concerned personnel.
6. Undertake collaborative project on Pesticides Risk Reduction for Women in line with Pakistan AGFUND Project.
7. Undertake Pesticides Residue project to comply with WTO obligations.
8. Observe a common "No Pesticides Day (3 December)" in all SAARC countries.
9. Develop Regional IPM Collaborative program.
10. Organize Regional Workshop under SAARC SPINet.
11. Develop harmonized Maximum Residue Limits (MRLs) for SAARC countries.
12. Develop IPM based short documentary film.
13. Establish a collaborative pesticide Residue Laboratory for SAARC countries.

## 2. Work and Knowledge Sharing

1. Updated list of registered, banned and restricted use pesticides in any SAARC country.
2. Methodologies, protocols, tools and techniques developed for pesticides analyses – purity tests, formulation analyses, residue studies etc.
3. Methodologies, protocols, tools and techniques developed for efficacy trials for chemical, biochemical and microbial pesticides.
4. Indigenous technologies, tools and techniques developed for integrated pest management (IPM) against any pests & diseases.

5. Maximum Residue Limits (MRLs) fixed by any SAARC country (Particularly India).
6. Information on any useful technology, technique, kit, biosensor developed by any SAARC country (India, Pakistan).
7. Updated concept and/or understanding on pesticide use in IPM.
8. Development of pests' resistance to a pesticide.
9. Pesticide poisoning cases along with information on pesticides involved, causes of poisoning, and age and gender of victims.
10. Any effective mitigation measure for reducing pesticides poisoning.
11. Awareness building effective materials (e.g., Video, DVD, CD developed on pesticide safety campaign, education).
12. Rapid pesticide detection kits or Biosensors developed by any SAARC country.
13. Effective predators, parasitoids, parasites available in any SAARC country.
14. Effective traps developed by any SAARC country.
15. Concept of Children's Ecological Club as implemented in Pakistan.

## 3. Operational Modalities of Proposed Website

1. For web based information sharing, each country administrator (Focal Point) will be given password, who will update information.
2. Focal Point in each SAARC country will maintain contacts with contact point at SAC and vice-versa.
3. Ensure through agreements free access and linking to Website of any SAARC country.
4. SAC/SPINet Administrator may collate some useful information and after getting approval may upload.

