



Hybrid and High Yielding Crop Varieties in SAARC Countries



SAARC

SAARC AGRICULTURAL INFORMATION CENTRE

Hybrid and High Yielding Crop Varieties in SAARC Countries

Compiled by:
Jawed Naseem
Mohammad Abdullah

Edited by Mohammad Abdullah



SAARC Agricultural Information Centre (SAIC)
BARC Campus, Farmgate, Dhaka 1215
Bangladesh

**SAARC Agricultural Information Centre (SAIC)
BARC Campus, Farmgate, Dhaka 1215
Bangladesh**

Published: 1998

**Cover Design: Mafruha Begum
Data Entry: Abdul Kadir
Production Assistance: Raihana Kabir**

**Price: BD Tk 50.00
US \$ 2.00 for SAARC countries
US \$ 3.00 for other countries**

**Printed at: Prokash Mudrayan
110/2, East Tezturi Bazaar
Tejgaon, Dhaka 1215**

Published by: Dr M Zahangir Kabir

Director
SAARC Agricultural Information Centre (SAIC)
BARC Campus, Farmgate, Dhaka 1215
Bangladesh

Preface

Seeds are the germ of life, the yesterday's fruit and the promise of the tomorrow's. Finding and developing better seeds is the oldest continuous practice that are rendered by the farmers in the mother earth from the ancient time.

Recently, plant breeders and genetic engineers have accomplished miracles in the development of more productive crop varieties. We can use these high yielding varieties (HYV) and Hybrid seeds to end hunger in the SAARC region.

HYV and Hybrid seeds enable the farmers to produce a variety of healthy and more productive crops that can better resist major diseases, the threat of drought, heat, cold, and the attack of insects/pests.

I express my heartiest gratitude to the scientists who developed the HYV and Hybrid varieties and responded to our call to provide necessary information for publication of this book *Hybrid and High Yielding Crop Varieties in SAARC Countries*. Although there are few hundred agricultural institutions in SAARC countries, we have received information on HYV and Hybrid seeds only from thirty-five organizations. In future, we also expect more responses from other agricultural institutes working on seed development sector.

I express my gratitude to my colleagues who worked for collection of information, compilation and publication of this book.

Suggestions for improvement in SAIC's future publication will be gratefully acknowledge.

Dr M Zahangir Kabir
Director, SAIC

Contents

Preface

Bangladesh

Horticulture Research Centre	1
Bangladesh Agricultural Research Institute, Gazipur	

India

Agricultural Experimental Station	2
Gujarat Agricultural University, Gujarat	
Agricultural Research Station	7
Marathwada Agricultural University, Maharashtra	
Agriculture Research Station (FC)	24
Gujarat Agricultural University, Gujarat	
All India co-ordinated Cotton Improvement Project	25
Dr. Panjabrao Deshmukh Krishi Vidyapeeth Maharashtra	
Bidi Tobacco Research Station	27
Gujarat Agricultural University, Gujarat	
Centre for Plant Breeding and Genetics	28
Tamil Nadu Agricultural University, Tamil Nadu	
Defence Agricultural Research Laboratory	29
Defence Research & Development Organization Uttar Pradesh	
Department of Genetics & Plant Breeding	29
GB Pant University of Agriculture and Technology Uttar Pradesh	
Department of Horticulture	30
University of Agricultural Sciences, Karnataka	
Department of Vegetable Science	32
GB Pant University of Agriculture and Technology Uttar Pradesh	

Department of Vegetable Science	32
Narendra Deva University of Agriculture and Technology Uttar Pradesh	
Dr. YS Parmar University of Horticulture and Forestry	34
Himachal Pradesh	
Fruit Research Station, Maharashtra	37
Horticulture College and Research Institute	38
Tamil Nadu Agricultural University, Tamil Nadu	
Mahatma Phule Krishi Vidyapeeth, Maharashtra	44
Main Cotton Research Station	46
Gujarat Agricultural University, Gujarat	
Main Millet Research Station	51
Gujarat Agricultural University, Gujarat	
Main Sorghum Research Station	57
Gujarat Agricultural University, Gujarat	
Nimbkar Agricultural Research Institute, Maharashtra	58
Paddy Breeding Station	59
Tamil Nadu Agricultural University, Tamil Nadu	
Pulses Research Unit	60
Dr. Panjabrao Deshmukh Krishi Vidyapeeth Maharashtra	
Punjab Agricultural University	64
Directorate of Research, Punjab	
Sugarcane Breeding Institute and Sugarcane Research Station, Tamil Nadu Agricultural University, Tamil Nadu	71
Vegetable Research Project	84
Gujarat Agricultural University, Gujarat	
Vegetable Research Station	86
CSA University of Agriculture and Technology Uttar Pradesh	
Vivekananda Parvatiya Krishi Anusandhan Sansthan	87
Uttar Pradesh	
 Pakistan	
 Agricultural Research Institute, Balochistan	 88
Agricultural Research Station, Peshawar	89

Agriculture Research Institute, Balochistan	90
Agriculture Research Institute, Sindh	91
Cereal Crops Research Institute, Peshawar	91
Sugarcane Research Station, Peshawar	93
Sugarcane Research Station, Peshawar	93

Sri Lanka

Division of Vegetables	94
Horticultural Crops Research and Development Institute Peradeniya	

Crop Index	95
-------------------	-----------

Horticulture Research Centre
Bangladesh Agricultural Research Institute (BARI)
Joydebpur, Gazipur, Bangladesh

Name of the Crop : Brinjal
HYV Name : Tarapuri
Scientist(s) Involved : Scientists of Olericulture Division
Year of Release : 1992
Sowing Time : Winter (August - April)
Germination Time : 3-4 days
Flowering Time : October - March
Maturity Time : 75 days
Ripening Time : 15 days
Yield per Hectare : 80 tons
Climate Required : Winter, 15-25° C
Soil Type : A light well drained soil is preferred, However any soil is suitable
Fertilizer Doses : Urea-375 kg, TSP-100kg, MP-250kg
Irrigation Schedule : Irrigation once in a week during drought season in recommended
Disease Tolerance : Tolerant to bacterial wilt
Pest Management : Ripcord/Malathion is applied in case of fruit and shoot borer attack
Special Feature(s) : Attractive purple colour oblong fruits, 45% higher yield than the better parents
Profitability : Net return Tk 1,35,000/-

Name of the Crop : Brinjal
HYV Name : Suktara
Scientist(s) Involved : Scientists of Olericulture Division
Year of Release : 1992
Sowing Time : Winter (August - April)
Germination Time : 3-4 days
Flowering Time : October - March
Maturity Time : 75-80 days
Ripening Time : 15 days
Yield per Hectare : 100 tons
Climate Required : Winter 15-25 ° C
Soil Type : A light well drained soil is preferred, however any soil is suitable
Fertilizer Doses : Urea 375 kg, TSP 100kg, MP 250kg
Irrigation Schedule : Irrigation once a week/fortnight during dry season is recommended
Disease Tolerance : Tolerant to bacterial wilt
Pest Management : Tolerant to fruit and shoot borer
Special Feature(s) : 50% higher yield than better parents

Profitability : Net return 1,75,000/-

Name of the Crop : Watermelon

HYV Name : Padma

Year of Release : 1992

Sowing Time : November-January

Germination Time : 2-3 days

Flowering Time : January-March

Maturity Time : 90-95 days

Ripening Time : 30-35 days

Fruit Yield : 7.5-8.0 kg per fruit, and 4-5 fruits per plant

Climate Required : Sunny dry weather, Temp 25-30 ° C

Soil Type : Sandy loam preferred

Fertilizer Doses : TSP-100kg, Urea-350kg, and MP-350kg

Irrigation Schedule : Watermelon can withstand drought but irrigation is given during dry period as and when necessary

Disease Tolerance : Tolerant to *Fusarium* wilt, gummy stem blight and *Anthracnose*

Pest Management : Ripcord/Malathion is applied in case of beetle and aphid

Special Feature(s) : High yield and sugar content (12) over commercial hybrid top yield

Profitability : Net return Tk 3,20,000/= (BC ratio 1:5)

Agricultural Experimental Station

Gujarat Agricultural University

Paria, Ta. Pardi, Dist. Valsad, Gujarat-396145, India

Name of the Crop : Mango (*Mangifera indica*)

HYV Name : i. Neelphonso (Neelum X Alphonso st-1) ii. Neeleshan Gujarat (Neelum X Baneshan st-1) iii. Neeleshwari (Neelum X Dasherri st-1)

Scientist(s) Involved : HD Amin; JR Patel; DC Patel; JP Bhatt; HP Bhuva; DG Khona; BS Chundawat; JS Katrodia; MM Desai; SCP Sachan; AG Naik

Year of Release : 1985-86

Flowering Habit : Moderate and regular, but late maturing tendency

Maturity Time : 2nd Week of July

Ripening Time : 120 to 140 days from flowering to maturity

Yield Per Tree : i. 50 kg per tree ii. 47 kg per tree iii. 34 kg per tree

Climate Required : Tropical and Sub-tropical climate

Soil Type : The soil is undulating to levelled, fine textured and deep Alkaline (7.5 to 8.5 PH) and low to medium in nitrogen, medium in phosphorus and high in potash

Fertilizer Doses : General recommended doze of fertilizer is given to mango Hybrids is as under: i. 10 kg FYM; 0.075 kg Nutrients Nitrogen; 0.016 kg Phosphorus;

	0.075 kg Potash per tree per year ii. 10 kg FYM; 0.075 kg Nitrogen; 0.016 kg Phosphorus; 0.075 kg Potash per tree per year iii. 10 kg FYM; 0.075 kg Nitrogen; 0.016 kg Phosphorus; 0.750 kg Potash per tree per year
Irrigation Schedule	: Normally three irrigation are given from March to May
Disease Tolerance	: All the three Hybrids are not resistant against common diseases of mango in field conditions
Pest Management	:
Price of Seed	: 10 paisa per stone
Special Feature(s)	: The keeping quality of these varieties is so good that they do not spoil in rainy season during ripening when other varieties spoil
Other Feature(s)	: Two varieties Neelphonso and Neeleshan Gujarat awarded second prize in All India mango show held at "Varansi" during 1980. According to organoleptic taste by pannel of judges including nursery men and progressive farmers, the Neelphonso stood first and Neeleshan Gujarat stood second
Name of the Crop	: Mango
HYV Name	: Neeleshan Gujarat (Neelum X Baneshan st-1)
Scientist(s) Involved	: HD Amin; JR Patel; DC Patel; and associates
Year of Release	: 1985-86
Flowering Habbit	: Almost regular and moderate bearing, late maturing variety
Maturity Time	: 2nd week of July
Ripening Time	: 120 to 140 days from flowering to maturity
Yield per Tree	: 47 kg per tree
Climate Required	: Tropical and Sub-tropical climate
Soil Type	: The soil is undulating to levelled, fine textured and deep Alkaline (7.5 to 8.5 PH) and low to medium in nitrogen, medium in phosphorus and high in potash
Fertilizer Doses	: General recommended doses of fertilizer is given to mango Hybrids is as under: FYM 10 kg; Nitrogen 0.075 kg; Phosphorus 0.016 kg; Potash 0.075 kg
Irrigation Schedule	: Normally, three irrigation are given from March to May
Disease Tolerance	: This Hybrid is not resistant against common diseases of mango in field conditions
Price of Seed	: 10 Paisa per stone
Special Feature(s)	: The keeping quality of these proposed varieties (Hybrids) is so good that they dont spoil in rainy season during ripening when other varieties spoil
Other Feature(s)	: Amongst newly proposed mango varieties (Hybrids) for release, two varieties Neelphonso and Neeleshan Gujarat awarded second prize in All India mango show held at "Varansi" during 1980. According to organoleptic taste by pannel of judges including nursery men and progressive farmers, the Neelphonso stood first and Neeleshan Gujarat stood second

Name of the Crop : Mango
HYV Name : Neeleshwari (Neelum X Dasher st-1)
Scientist(s) Involved : HD Amin; JR Patel; Shri DC Patel and associates
Year of Release : 1985-86
Flowering Time : Moderate bearing, late maturing variety
Maturity Time : 2nd Week of July
Ripening Time : 120 to 140 days from flowering to maturity
Yield per Hectare : 34.950 kg
Climate Required : Tropical and Sub-tropical climate
Soil Type : The soil is undulating to levelled, fine textured and deep Alkaline (7.5 to 8.5 PH) and low to medium in nitrogen, medium in phosphorus and high in potash
Fertilizer Doses : General recommended doze of fertilizer is given to mango Hybrids is as under: FYM 10 kg; Nitrogen 0.075 kg; Phosphorus 0.016 kg; Potash 0.750 kg
Irrigation Schedule : Normally three irrigation are given from March to May
Disease Tolerance : This Hybrid is not resistant against common diseases of mango in field conditions
Price of Seed : 10 Paisa per stone
Special Feature(s) : The keeping quality of these proposed varieties (Hybrids) is so good that they dont spoil in rainy season during ripening when other varieties spoil
Other Feature(s) : Amongst newly proposed mango varieties (Hybrids) for release, two varieties Neelphonso and Neeleshan Gujarat awarded second prize in All India mango show held at "Varansi" during 1980. According to organoleptic taste by pannel of judges including nursery men and progressive farmers, the Neelphonso stood first and Neeleshan Gujarat stood second

Agricultural Research Station

Marathwada Agricultural University
 Parbhani-431402, Maharashtra, India

Name of the Crop : Chickpea
HYV Name : BDN 9-3
Scientist(s) Involved : PG Thombre
Year of Release : 1982
Sowing Time : Last and week of Octover to first week of Novmber
Germination Time : 5-6 days
Flowering Time : 50-55 days
Maturity Time : 100-105 days
Ripening Time : 50 days

Yield per Hectare : 14-15 qtls
Soil Type : Medium to heavy soil
Fertilizer Doses : 25:50:0 (NPK kg per ha)
Irrigation Schedule : Protective irrigation after 45 and 75 days if dry spell
Disease Tolerance : Resistant to wilt
Pest Management : Endosulphan 0.07 for Pod borer
Price of Seed : Rs 30/- per kg
Special Feature(s) : High yielding, resistant to wilt and drought
Profitability : Profitable

Name of the Crop : Cotton
HYV Name : NHH-44
Scientist(s) Involved : GR Vyahalkar; SS Mane; RA Patil
Year of Release : 1982
Sowing Time : Rainfed: June-July; Irrigated: Last Week of May to First Week of June
Germination Time : 6-7 days
Flowering Time : 45-50 days
Maturity Time : 160-170 days
Ripening Time : 60-65 days
Yield per Hectare : 12-13 qtls; 18-20 qtls
Climate Required : 28-33 ° C
Soil Type : Medium to Deep black cotton
Fertilizer Doses : Irrigated 100:50:50 (NPK kg per ha); Rainfed: 80:40:40 (NPK kg per ha)
Irrigation Schedule : Four Irrigations
Disease Tolerance : Tolerant to major diseases except para wilt
Pest Management : 5-6 sprays
Price of Seed : Rs 225/-
Special Feature(s) : Fast rejuvenating ability Synchronous flowering higher yield than H4 variety spinning count is 40-50
Profitability : 20% higher yield over check. 40-50% higher income over cost of cultivation

Name of the Crop : Cotton
HYV Name : NHB-12
Scientist(s) Involved : PG Thombre; SS Mane; VG Reddy
Year of Release : 1989
Sowing Time : Rainfed: June-July; Irrigated: Last week of May to First week of June
Germination Time : 6-7 days
Flowering Time : 50-55 days
Maturity Time : 160-170 days
Ripening Time : 60-65 days
Yield per Hectare : 11-12 qtls; 18-20 qtls
Climate Required : Warm climate 28-30 ° C

Soil Type : Medium to deep black
Fertilizer Doses : Irrigated: 100:50:50 (NPK kg per ha); Rainfed: 80:40:40 (NPK kg per ha)
Irrigation Schedule : Four irrigations
Disease Tolerance : Tolerant to major diseases except Parawilt
Pest Management : 4-5 sprays
Price of Seed : Rs 200/-
Special Feature(s) : 15% more yield than check. Early maturity. Spinning count 60-80 s
Profitability : 10-15% more yield over check. 30-40% more income over cost of cultivation

Name of the Crop : Cotton
HYV Name : NHH-1 (Godawari)
Scientist(s) Involved : NL Bhale; DP Gavankar; GR Vyahalkar
Year of Release : 1976
Sowing Time : June to July for Rainfed; Irrigation: Last week of May to First week of June
Germination Time : 6-7 days
Flowering Time : 65-70 days
Maturity Time : 180-190 days
Ripening Time : 65-70 days
Yield per Hectare : 10-12 qtls; 16-18 qtls
Climate Required : Warm climate, 28-30 ° C
Soil Type : Medium to deep black cotton soil
Fertilizer Doses : 100:50:50 irrigated (NPK kg per ha); 80:40:40 rainfed (NPK kg per ha)
Irrigation Schedule : Four irrigations
Disease Tolerance : Tolerant to all major disease except parawilt
Pest Management : 4-5 sprays
Price of Seed : 150-170 Rs/kg
Special Feature(s) : Resistant to sucking pest specially for Jassids. Spinning count 40-50 s
Profitability : 18 higher yield over check 30-40 higher income over cost of cultivation

Name of the Crop : Groundnut
HYV Name : LGN-2 (Variety)
Scientist(s) Involved : SM Sudewad; VG Makne; KR Kamble; VG Reddy
Year of Release : January, 1995
Sowing Time : Kharif: 15 June to 15 July; Summer: 25 December to 15 January
Germination Time : 8 days
Flowering Time : 40-45 days
Maturity Time : 118-120 days
Ripening Time : 75 days
Yield per Hectare : 18-20 qtls; 30-35 qtls
Climate Required : Tropical dry wather
Soil Type : Medium to light

Fertilizer Doses : 25:50:0 (NPK kg per ha)
Irrigation Schedule : Summer: 10-12 irrigations
Disease Tolerance : Tolerent to ELS, Stem
Pest Management : Leaf minor Monocrotophos 0.05; Defoliators - Phorph 0.05
Price of Seed : Rs 35-40 per kg
Special Feature(s) : Yield increase over K 3 - 14; LCGS-76 40; K-4-11-53
Profitability : Oil content 49, Early by 15 days than ICGS-76

Name of the Crop : Mungbean
HYV Name : BM-4
Scientist(s) Involved : VK Shinde; BD Borade; JE Jahagirdar; MK Ghodke
Year of Release : 1991
Sowing Time : 25th June to 1st July
Germination Time : 3-4 days
Flowering Time : 30-35 days
Maturity Time : 60-65 days
Ripening Time : 30-35 days
Yield per Hectare : 10-12 qtls
Climate Required : 21-25 ° C
Soil Type : Medium to deep heavy soil
Fertilizer Doses : 20:50:0 (NPK kg per ha)
Irrigation Schedule : Protective irrigation if dry spell during flowering and grain filling stage
Disease Tolerance : Powdery Mildew resistant and Tolerent to Yellow vein Mosaic
Pest Management : Melathion 50, 500 ml in 500 lit water for sucking pest
Price of Seed : Rs 27 per kg
Special Feature(s) : High Yielding, resistant to Powdery Mildew, Tolerent to Yellow Vein Mosaic
Profitability : Profitable

Name of the Crop : Paddy
HYV Name : Prabhavati
Scientist(s) Involved : YS Nerkar; MB Misal
Year of Release : 1984
Sowing Time : Kharif 15th June to 15th July
Germination Time : 7 days
Flowering Time : 84 days
Maturity Time : 120 days
Ripening Time : 25-35 days
Yield per Hectare : 35-40 qtls
Climate Required : 28-32 ° C
Soil Type : Vertisols
Fertilizer Doses : 80:50:50 (NPK kg per ha)
Irrigation Schedule : 1.2 ID/CPE ratio 60 mm is depth of per irrigation

Disease Tolerance : Tolerent to iron chlorosis
Pest Management : Apply Carbofuran 3G @ 16.5 kg per ha for leaf folder and stem borer control'
Price of Seed : Rs 7.50 per kg
Special Feature(s) : Mild scented variety
Profitability : Profitable under upland irrigated condition
Other Feature(s) : Crop is sown by drilling method

Name of the Crop : Paddy
HYV Name : Parag
Scientist(s) Involved : VD Patil; YS Nerkar
Year of Release : 1996
Sowing Time : 15 June - 15 July, Kharif
Germination Time : 7 days
Flowering Time : 85 days
Maturity Time : 110 days
Ripening Time : 25-35 days
Yield per Hectare : 40 qtls
Climate Required : 28-32 ° C
Soil Type : Black cotton soils
Fertilizer Doses : 80:50:50 (NPK kg per ha)
Irrigation Schedule : 1.2 ID/CPE ratio 60 mm is depth of per irrigation
Disease Tolerance : Tolerent to iron chlorosis
Pest Management : Apply Carbofuran 3G @ 16.5 kg per ha to control leaf folder and stem borer
Price of Seed : Rs 7.50 per kg
Special Feature(s) : Mild scented variety
Profitability : Profitable under Upland Irrigated condition
Other Feature(s) : Crop is sown by drilling method

Name of the Crop : Paddy
HYV Name : Sugandha
Scientist(s) Involved : YS Nerkar, DB Deosarkar; BD Jadhar, VV Dahiphade
Year of Release : 1994
Sowing Time : 15 June - 15 July, Kharif
Germination Time : 7 days
Flowering Time : 85 days
Maturity Time : 115 days
Ripening Time : 25-35 days
Yield per Hectare : 40-42 qtls
Climate Required : 28-32 ° C
Soil Type : Vertisols
Fertilizer Doses : 80:50:50 (NPK kg per ha)

Irrigation Schedule : 1.2 ID/CPE ratio 60 mm is depth of per irrigation
Disease Tolerance : Tolerant to iron chlorosis
Pest Management : Apply Carbofuran 3 G @ 16.5 Kg per ha to control leaf folder and stem borer
Price of Seed : Rs 7.50 per kg
Special Feature(s) : Mild cented variety
Profitability : Profitable under upland irrigation condition
Other Feature(s) : Crop is sown by drilling method

Name of the Crop : Paddy
HYV Name : Terna
Scientist(s) Involved : GM Faratade
Year of Release : 1989
Sowing Time : Kharif
Germination Time : 1 week
Ripening Time : 30-35 days
Flowering Time : 78-82 days
Maturity Time : 105-110 days
Yield per Hectare : 2.2 - 2.5 tons
Climate Required : 20-32° C
Soil Type : Medium black with PH 7.5 to 8.5
Fertilizer Doses : 50:25:25 NPK Kg per ha
Irrigation Schedule : Grown in rainfed situation if possible irrigation is given at flowering and grain filling stage
Disease Tolerance : Tolerant to blast disease
Pest Management : No insect pest problem
Price of Seed : Rs 7.50/kg
Special Feature(s) : Tolerant to drought, iron chlorosis and blast disease
Profitability : 28% more yield over previously recommended variety Tuljapur-1
Other Feature(s) : White husk better grain quality with LS type grain and one week earlier than Ambika

Name of the Crop : Paddy
HYV Name : Ambika
Scientist(s) Involved : GM Fartade
Year of Release : 1984
Sowing Time : Kharif
Germination Time : 1 week
Flowering Time : 80-85 days
Maturity Time : 110-115 days
Ripening Time : 30-40 days
Yield per Hectare : 2.2-2.5 tons
Climate Required : 20-32 ° C

Soil Type : Medium black with PH 7.5 to 8.5
Fertilizer Doses : 50:25:25 (NPK kg per ha)
Irrigation Schedule : Grown in rainfed situation, if possible irrigation will be given at flowering and grain filling stage
Disease Tolerance : Tolerant blast disease
Pest Management : No insect pest problem
Price of Seed : Rs 7.5 kg
Special Feature(s) : Tolerant to drought, iron chlorosis and blast disease
Profitability : 28% more yield over previously recommended variety Tuljapur-1
Other Feature(s) : Red husk and better grain quality with LS type grain

Name of the Crop : Pigeonpea
HYV Name : BDN-1
Scientist(s) Involved : BP Ghavankar; MH Chavan
Year of Release : 1978
Sowing Time : 15th June to 15th July
Germination Time : 6-7 days
Flowering Time : 75-80 days
Maturity Time : 160-170 days
Ripening Time : 75-80 days
Yield per Hectare : 14-16 qtls
Climate Required : 18-29 °C
Soil Type : Fertile, deep clay soil
Fertilizer Doses : 25:50:0 (NPK kg per ha)
Irrigation Schedule : Protective irrigations at dryspell of about 15-20 days in early stage and 25-30 days in re-productive phase
Disease Tolerance : Wilt resistant
Pest Management : Spray Endosulfan 15 ml in 10 lit water for Heliothis
Price of Seed : Rs 40/- per kg
Special Feature(s) : Red seeded, wilt resistant, suitable for inter-cropping
Profitability : Profitable

Name of the Crop : Pigeonpea
HYV Name : BDN-2
Scientist(s) Involved : BP Ghavankar; MH Chavan
Year of Release : 1978
Sowing Time : 15th June to 15th July
Germination Time : 67 days
Flowering Time : 80-85 days
Maturity Time : 160-170 days
Ripening Time : 70-80 days
Yield per Hectare : 14-16 qtls

Climate Required : 18-29 ° C
Soil Type : Fertile, Deep clay soil
Fertilizer Doses : 25:50:0 (NPK kg per ha)
Irrigation Schedule : Protective irrigations if dry spell in early and re-productive phase
Disease Tolerance : Wilt resistant
Pest Management : Spray Endosulphan 15 ml in 10 lit water for Heliothis
Price of Seed : Rs 40/- per kg
Special Feature(s) : Wilt resistant, suitable for inter-cropping
Profitability : Profitable

Name of the Crop : Pigeonpea
HYV Name : BSMR-175
Scientist(s) Involved : KK Zote; VK Shinde; MK Ghodke; JE Jahagirdar; DD Zinjurde
Year of Release : 1992
Sowing Time : 15th June to 15 July
Germination Time : 6-7 days
Flowering Time : 80-85 days
Maturity Time : 170-175 days
Ripening Time : 80-85 days
Yield per Hectare : 14-16 qtls
Climate Required : 18-29 ° C
Soil Type : Fertile, Deep clay soil
Fertilizer Doses : 25:50:0 (NPK kg per ha)
Irrigation Schedule : Protective irrigations if dry spell in early and reproductive phase
Disease Tolerance : Wilt and Sterility Mosaic resistant
Pest Management : Spray of Endosulphan 15 ml in 10 litre water for Heliothis
Price of Seed : Rs 40/- per kg
Special Feature(s) : White seeded, high yielding resistant to wilt and sterility mosaic

Name of the Crop : Pigeonpea
HYV Name : BSMR-736
Scientist(s) Involved : KK Zote, RA Patil; BP Dandnike; JE Jahagirdar; MK Ghodke; NB Pawar, PR Khapre
Year of Release : 1994
Sowing Time : 15th June to 15th July
Germination Time : 6-7 days
Flowering Time : 90-95 days
Maturity Time : 180-185 days
Ripening Time : 90-95 days
Yield per Hectare : 15-16 qtls
Climate Required : 18-29 ° C
Soil Type : Fertile, Deep clay soil

Fertilizer Doses : 25:50:0 (NPK kg per ha)
Irrigation Schedule : Protective irrigations if dry spell in early stage and reproductive stage
Disease Tolerance : Resistant to wilt and sterility Masaic
Pest Management : Spraying of Endosulphan 15 ml in 10 lit water for Heliothis
Price of Seed : Rs 40/- per kg
Special Feature(s) : Red seeded, wilt and sterility Mosaic resistant, high yielding

Name of the Crop : Safflower
HYV Name : Sharda (Variety)
Scientist(s) Involved : GV Chavan; BM Joshi; SM Sudewad
Year of Release : August, 1993
Sowing Time : Rabi: October 1st fortnight
Germination Time : 8 days
Flowering Time : 70-75 days
Maturity Time : 120-125 days
Ripening Time : 50 days
Yield per Hectare : 12-15 qtls
Climate Required : Temperate
Soil Type : Heavy to medium
Fertilizer Doses : 40:40:20 (NPK kg per ha)
Irrigation Schedule : If irrigation is required at 60-70 days and 85-90 days after sowing
Disease Tolerance : Tolerant to wilt and Aphids
Pest Management : Aphids Dimethoate 0.03 Semilooper and Heliothis Monocrotophos 0.05
Price of Seed : Rs 38-40 per kg
Special Feature(s) : Yield increase over Bhima 23 Annegiri - 9
Profitability : Profitable over other varieties traditionally grown
Other Feature(s) : Oil content 32 Resistant to wilt

Name of the Crop : Sunflower
HYV Name : LDMRSH-3 (Hybrid)
Scientist(s) Involved : SS Ambekar; MA Patil; VV Patil; CD Mayee
Year of Release : November, 1993
Sowing Time : Kharif: July 2nd fortnight; Rabi: October 2nd fortnight; Summer: January 2nd fortnight
Germination Time : 8 days
Flowering Time : 45 days
Maturity Time : 95-100 days
Ripening Time : 45 days
Yield per Hectare : 1.5-1.8 tons
Climate Required : Tropical/subtropical
Soil Type : Heavy to medium
Fertilizer Doses : 60:90:60 (NPK kg per ha)

Irrigation Schedule : Rabi: 5-6 irrigations; Summer: 8-10 irrigations
Disease Tolerance : Resistant to Downey mildew, tolerant to rust and susceptible to Alternaria
Pest Management : Monocrotophos 0.05 for Heliothis and Semilooper, Quinolphos 0.4 for Hairy Caterpillar
Price of Seed : Rs 150-200 per kg
Special Feature(s) : Yield increase over MSFH-1 20-25
Profitability : Profitable over other varieties traditionally grown
Other Feature(s) : Oil content 34 Suitable for 3 seasons. Resistant to downey mildew

Name of the Crop : Sunflower
HYV Name : LDMRSH-1 (Hybrid)
Scientist(s) Involved : SS Ambekar; MA Patil; VV Patil SM Sudewad; CD Mayee
Year of Release : November, 1993
Sowing Time : Kharif: July 2nd fortnight; Rabi: October 2nd fortnight; Summer: January 2nd fortnight
Germination Time : 8 days
Flowering Time : 40-45 days
Maturity Time : 85-90 days
Ripening Time : 40 days
Yield per Hectare : 1.2-1.4 tons
Climate Required : Tropical/Subtropical
Soil Type : Heavy to medium
Fertilizer Doses : 60:90:60 (NPK kg per ha)
Irrigation Schedule : Rabi: 5-6 irrigations; Summer: 8-10 irrigations
Disease Tolerance : Resistance to Downey mildew. Tolerant to rust and susceptibility to Alternaria
Pest Management : Monocrotophos 0.05 for Heliothis and Semilooper. Quinolphos 0.4 for Hairy Caterpillar
Price of Seed : Rs 150-200 per kg
Special Feature(s) : Yield increase over morden 56.63
Profitability : Profitable over other varieties traditionally grown
Other Feature(s) : Oil content 34 suitable for 3 seasons.
Resistant to downey mildew

Name of the Crop : Sorghum
HYV Name : SPV-297 (variety)
Scientist(s) Involved : VK Shinde
Year of Release : 1984
Sowing Time : Kharif
Germination Time : 3-6 days
Flowering Time : 67-70 days
Maturity Time : 110-115 days

Ripening Time : 40 days
Yield per Hectare : 30-40 qtls; 95-100 qtls
Climate Required : Kharif
Soil Type : Medium to heavy soil
Fertilizer Doses : 60:30:30 (NPK kg per ha)
Disease Tolerance : Tolerant to grain mould and charcoal rot
Pest Management : Tolerant to shootfly and Stemborer
Price of Seed : Rs 40/- per kg
Special Feature(s) : Suitable for intercropping with Tur
Profitability : More profitable in respect of grain and fodder yield
Other Feature(s) : Tall variety with erect leaf habit. Thin solid and juicy stem

Name of the Crop : Sorghum
HYV Name : Hybrid SPH-201
Scientist(s) Involved : KG Nandanwankar
Year of Release : 1984
Sowing Time : Rabi
Germination Time : 3-6 days
Flowering Time : 64-68 days
Maturity Time : 110-115 days
Ripening Time : 40 days
Yield per Hectare : 30-35 qtls; 55-60 qtls
Climate Required : Rabi
Soil Type : Medium to heavy soil
Fertilizer Doses : 60:30:30 (NPK kg per ha)
Irrigation Schedule : Three irrigations
Disease Tolerance : Tolerant to charcoal rot
Pest Management : Tolerant to shootfly and stem-borer
Price of Seed : Rs 40/- per kg
Special Feature(s) : Alternative for CSH-8 (R)
Profitability : More profitable in respect of grain and fodder yield
Other Feature(s) : Good response to irrigation and fertilizer, non lodging. Parentage: MS 296 x PVR 10

Name of the Crop : Sorghum
HYV Name : Variety PVK 400 (SPV 860)
Scientist(s) Involved : RA Patil; NG P Rao
Year of Release : 1990
Sowing Time : Kharif
Germination Time : 3-6 days
Flowering Time : 70-72 days
Maturity Time : 115-120 days
Ripening Time : 40 days

Yield per Hectare : 40-50 qtls; 115-120 qtls
Climate Required : Kharif
Soil Type : Medium to heavy soils
Fertilizer Doses : 80:40:40 (NPK kg per ha)
Disease Tolerance : Tolerant to grain mould and charcoal rot
Pest Management : Tolerant to shootfly and Stemborer
Price of Seed : Rs 40/- per kg
Special Feature(s) : It gives higher grain and fodder yield over CSH-5
Profitability : More profitable in respect of grain and fodder yield
Other Feature(s) : The grains are bold and pearly white, easy to threshability, bread and fodder quality is good. It has 16 to 17 brix at maturity

Name of the Crop : Soybean
HYV Name : Prasad (MAUS-32)
Scientist(s) Involved : AR Singh; DG Dalvi
Year of Release : 1997
Sowing Time : 15th June to 15th July
Germination Time : 5-8 days
Flowering Time : 40-45 days
Maturity Time : 105-110 days
Ripening Time : 55-60 days
Yield per Hectare : 30-35 qtls
Climate Required : 20-35 °C
Soil Type : Medium to heavy
Fertilizer Doses : 30:60:30 (NPK kg per ha)
Irrigation Schedule : 10-15 days interval
Disease Tolerance : Resistant
Pest Management : 2-3 spray of Monocrotopos (0.05)
Price of Seed : Rs 20-25/kg
Special Feature(s) : High yielding and non-shattering
Profitability : Rs 10,000/- to Rs 15,000/- per ha
Other Feature(s) : Seed yield and quality can be increased by soil application of sulphur and Gypsum and seed treatment of PSB and Rhizobium culture

Name of the Crop : Soybean
HYV Name : Arti (MAUS-1)
Scientist(s) Involved : AR Singh; PK Nalwandikar
Year of Release : 1996
Sowing Time : 15th June to 15th July
Germination Time : 5-8 days
Flowering Time : 35-40 days
Maturity Time : 90-95 days
Ripening Time : 50-55 days

Yield per Hectare : 30-35 qtls
Climate Required : 20-35 ° C
Soil Type : Medium to heavy soil
Fertilizer Doses : 30:60:30 (NPK kg per ha)
Irrigation Schedule : 10-15 days interval
Disease Tolerance : Resistant
Pest Management : 2-3 sprays of Monocrotophos (0.05)
Price of Seed : 20-25/kg
Special Feature(s) : High yielding and Early
Profitability : Rs 10,000/- to Rs 15,000/- per ha
Other Feature(s) : Seed yield and quality can be increased by soil application of sulphar and Gypsum and seed treatment of PSB and Rhizobium culture

Name of the Crop : Soybean
HYV Name : Pooja (MAUS-2)
Scientist(s) Involved : AR Singh; PK Nalwandikar
Year of Release : 1995
Sowing Time : 15th June to 15th July
Germination Time : 5-8 days
Flowering Time : 40-45 days
Maturity Time : 105-110 days
Ripening Time : 55-60 days
Yield per Hectare : 30-32 qtls
Climate Required : 20-35 ° C
Soil Type : Medium to heavy soil
Fertilizer Doses : 30:60:30 (NPK kg per ha)
Irrigation Schedule : 10-15 days interval
Disease Tolerance : Resistant
Pest Management : 2-3 sprays of Monocrotophos (0.05)
Price of Seed : Rs 20-25 kg
Special Feature(s) : High Yielding and non-shatterind
Profitability : Rs 10,000/- to Rs 15,000/- per ha
Other Feature(s) : Seed yield and quality can be increased by soil application of Gypsum and sulphure and seed treatment of PSB and Rhizobium culture

Name of the Crop : Wheat
HYV Name : Parbhani 51 (PBN-51)
Scientist(s) Involved : KA Nayeem
Year of Release : 1992
Sowing Time : Rabi
Flowering Time : 70 days
Maturity Time : 130 days
Ripening Time : 40 days

Yield per Hectare : 45-50 qtls
Climate Required : Cold climate
Soil Type : Deep black
Fertilizer Doses : 120:60:60 (NPK kg per ha)
Irrigation Schedule : Six irrigations
Disease Tolerance : Heat tolerant
Price of Seed : Rs 15/-
Special Feature(s) : High tillers, heat tolerant and high yield
Profitability : 15-20% more grain yield over HD-2189 and Lok-1
Other Feature(s) : Quality is better than MACS-2496

mfn no : 0118

Name of the Crop : Wheat
HYV Name : Kailash (PBN-142)
Scientist(s) Involved : KA Nayeem
Year of Release : 1989
Sowing Time : Rabi (late sown upto 15th December)
Flowering Time : 55-60 days
Maturity Time : 120 days
Ripening Time : 45 days
Yield per Hectare : 35-40 qtls
Climate Required : Warm climate (Rabi)
Soil Type : Deep black
Fertilizer Doses : 100:50:50 (NPK kg per ha)
Irrigation Schedule : Five irrigations
Disease Tolerance : Heat and rust tolerant
Price of Seed : Rs 15/-
Special Feature(s) : Good quality chapati
Profitability : 10 over HD-2189 and Sonolika

mfn no : 0119

Name of the Crop : Wheat
HYV Name : Ajanta
Scientist(s) Involved : KA Nayeem
Year of Release : 1982
Sowing Time : Rainfed in October
Flowering Time : 45 days
Maturity Time : 90 days
Ripening Time : 45 days
Yield per Hectare : 14-16 qtls
Climate Required : Cold climate
Soil Type : Deep black

Fertilizer Doses : 25:25:25 (NPK kg per ha)
Irrigation Schedule : Rainfed
Disease Tolerance : Drought tolerant earlier hence escape rust
Price of Seed : Rs 15/-
Special Feature(s) : Amber and bold grain. Chapati quality is Superior to other varieties
Profitability : 20% More over N-59, MACS-1967; 10% over NI 5939
Other Feature(s) : Chapati quality is good

Agriculture Research Station (F.C.)
 Gujarat Agricultural University
 Mahuva -364290, Dist-Bhavnagar, India

Name of the Crop : Coconut (*Cocos nucifera* L.)
HYV Name : DXT (Mahuva)
Scientist(s) Involved : RB Sarvaiya
Year of Release : 1995
Sowing Time : Through out the year
Germination Time : 60 to 70 days after seednut sowing in nursery
Flowering Time : 35 months (after transplanting)
Maturity Time : 47 months (after transplanting of seedling)
Ripening Time : 1 year
Yield per Hectare : About 12994 nut, @ 73 nut/tree/year
Climate Required : Humid climate, temperature: optimum 27 °C, Min.20 °C and Max. 40 °C
Soil Type : All types of soil except poor drainage, hard rocky, and lime layer
Fertilizer Doses : 1.5 kg N, 750 gm P₂O₅, 1.5 kg K₂O/palm/year in full bearing stage
Irrigation Schedule : 15 days interval in summer, 22 days interval in winter, 800 lit. water per palm/irrigation. Basin size 4x4 m
Pest Management : Black headed caterpillar is effectively controled by root application of 10 m1 of Monocrotophos with equal quantity of water
Price of Seed : Rs12 per seed nut and Rs 20 per Seedling
Special Feature(s) : Early bearing, semi tall, high yielding and backing habit
Profitability : 45 to 50% more profitability than the parent variety
Other Feature(s) : Weight of nut/kernel/copra are higher than its parents and fruit shape is round

All India co-ordinated Cotton Improvement Project
 Panjabrao Desmukh Krishi Vedyapeeth
 Akola-444104, Maharashtra, India

Name of the Crop : Cotton
HYV Name : PKV HY-2
Scientist(s) Involved : MA Tayyab; JN Deshmukh; RM Kalore; ST Wankhade; BG Rane

Year of Release : 1981
Sowing Time : Kharif
Flowering Time : 65-70 days
Maturity Time : 180-190 days
Yield per Hectare : 12-15 qtls per ha
Soil Type : Medium to heavy
Fertilizer Doses : 80 kg N, 40 kg P₂O₅ , 40 kg K₂O per ha
Irrigation Schedule : N in two split doses
Disease Tolerance : Resistant to alternaria
Pest Management : Moderately tolerant to jassids
Special Feature(s) : Dense hairy, resistant to sucking pests, suitable for rainfed and irrigated condition

Name of the Crop : Cotton
HYV Name : PKV HY-3
Scientist(s) Involved : MA Tayyab; LD Meshram, BG Rane
Year of Release : 1994
Sowing Time : Kharif
Flowering Time : 60-65 days
Maturity Time : 175-190 days
Yield per Hectare : 12-15 qtls per ha
Soil Type : Medium to heavy
Fertilizer Doses : 80 kg N, 40 kg P₂O₅ , 40 kg K₂O per ha
Irrigation Schedule : N in two split doses
Disease Tolerance : Moderately susceptible to bacterial blight
Pest Management : Moderately resistant to jassids
Special Feature(s) : Dense hairy, resistant to sucking pests, suitable for rainfed and irrigated condition based on male sterility

Name of the Crop : Cotton
HYV Name : PKV HY-4
Scientist(s) Involved : LD Meshram; MS Wadodkar; BK Kukade; JS Wankhade
Year of Release : 1996
Sowing Time : Kharif
Flowering Time : 65-70 days
Maturity Time : 160-170 days
Yield per Hectare : 15-20 qtls per ha
Soil Type : Medium to heavy
Fertilizer Doses : 50 kg N, 25 kg P₂O₅ , 25 kg K₂O per ha
Irrigation Schedule : N in two split doses
Pest Management : Moderately resistant to jassids
Special Feature(s) : Slightly hairy, long staple 30.5 mm, suitable for 50 count, early maturing 160 days, based on cms

Name of the Crop : Cotton
HYV Name : AKDH-7 (Pre-released)
Scientist(s) Involved : LD Meshram; MB Wadodkar; JS Wankhade; RA Naphade; DA Halde
Year of Release : 1996
Sowing Time : Kharif
Flowering Time : 70-75 days
Maturity Time : 190-200 days
Yield per Hectare : 10-11 qtls per ha
Soil Type : Medium to heavy
Fertilizer Doses : 50 kg N, 25 kg P₂O₅ , 25 kg K₂O per ha
Irrigation Schedule : N in two doses
Disease Tolerance : Resistant to bacterial blight
Pest Management : Resistant to sucking pests
Special Feature(s) : Slightly hairy, resistant to sucking pests and comparatively less susceptible to bollworms than AKA-8401

Bidi Tobacco Research Station,
 Gujarat Agricultural University
 Anand Campus, Anand-388110, India
 Phone: STD-02692 PABX: 21666, 21871, Fax: 02692-41520

Name of the Crop : Bidi Tobacco (*Nicotiana tabacum*)
HYV Name : Gujarat Tobacco Hybrid-1 (GTH-1)
Scientist(s) Involved : AD Patel and associates
Year of Release : 1995
Sowing Time : August (kharif season)
Germination Time : 5 to 7 days
Flowering Time : 60-65 days
Maturity Time : 160 to 170 days
Yield per Hectare : 3-3.6 tons per ha
Climate Required : 25-35 ° C
Soil Type : Sandy loam (Inceptisol)
Fertilizer Doses : 180 kg N only per ha
Irrigation Schedule : 4-5 irrigation at an interval of 20-25 days after withdrawal of monsoon
Disease Tolerance : Tolerant to root-knot nematode
Pest Management : Resistant to the major pests
Price of Seed : Rs 4000 per kg
Special Feature(s) : 25% higher yield than existing improved variety GT-5
Profitability : Rs 15000-18000 per ha
Other Feature(s) : First tobacco hybrid released for cultivation in India using cytoplasmic male sterility

Centre for Plant Breeding and Genetics
Department of Pulses, Tamil Nadu Agricultural University
Coimbatore-641003, India

Name of the Crop	: Pigeonpea
HYV Name	: CoPH 1 and CoPH 2
Scientist(s) Involved	: R Rathnaswamy
Year of Release	: CoPH 1 (1994) CoPH 2 (1997)
Sowing Time	: Kharif, Rabi and Summer
Germination Time	: Seven to Eight Days
Flowering Time	: 70-75 days
Maturity Time	: CoPH 1 (110 days) CoPH 2 (120-130 days)
Ripening Time	: 50-55 days
Yield per Hectare	: 950-1000 kg per ha
Climate Required	: 16-32 ° C-35-45 ° C for a short period of 2 months do not have adverse effects
Soil Type	: Sandy loam, loam, clay loams
Fertilizer Doses	: Rainfed 12.5 Kg N + 25 Kg P ₂ O ₅ per ha; Irrigated 25 Kg N + 50 Kg P ₂ O ₅ per ha
Irrigation Schedule	: Irrigation after sowing, 3rd day after sowing, bud initiation state, 50 flowering and pod development stage
Disease Tolerance	: Plant protection measures is to be given based on need
Pest Management	: To control pod borer any one of the following insecticides is to be applied. B.H.C. 10 D. Endosulfan 4 D. Quinolphos 4 D. Carbaryl 5 D. @ 25 kg per ha. Endosulfan 35 EC 1.25 lit, Monochrotophos 36.WSC 625 ml per ha
Price of Seed	: Rs 65/- per kilogram
Special Feature(s)	: Short duration (120-130 days) high yield (average 1050 kg/ha) suitable for rainfed and irrigated cultivation
Profitability	: Rs 7,000 to Rs 8,000 per hectare

Defence Agricultural Research Laboratory
Defence Research & Development Organization
Pithoragarh-262501, Uttar Pradesh, India
Phone: 22564, Fax: 05964-22564

Name of the Crop : Cucumber (*Cucumis sativus* L.)
HYV Name : DARL-1
Scientist(s) Involved : Z Ahmed; V Pandey and N Kumar
Year of Release : 1997
Sowing Time : Feb - March (protected condition), April - June (open condition)
Germination Time : 7-8 days
Flowering Time : 45-55 days
Maturity Time : 55-65 days (in the mid hills of central Himalayas)
Ripening Time : 10-12 days
Yield per Hectare : 522.5 qtls in protected condition; 396 qtls in open condition
Climate Required : 27-34 ° C
Soil Type : Sandy loam
Fertilizer Doses : 100 kg N, 60 kg P₂O₅ and 60 kg K₂O per ha
Irrigation Schedule : 12-15 in protected condition; irrigation varied with rainfall in open condition.
Disease Tolerance : Susceptible to powdery mildew
Pest Management : Ash dusting and spray of Qunodon for Red pumpkin beetle; Spray of Bevistin and Diathane M-45 for powdery mildew
Price of Seed : Rs 3600 per kg
Other Feature(s) : Suitable for hill agriculture; higher protein percentage (0.99)

Department of Genetics & Plant Breeding

Govind Ballabh Pant University of Agriculture and Technology College of Agriculture, Udham
Singh Nagar

Pantnagar -263145, UP, India

Phone: 33242, Fax: (05948)-33473, Email: CAGPB @ gbpuat.ernet in

Name of the Crop : **Paddy** (*Oryza sativa* L)
HYV Name : Pant Sankar Dhan-1
Scientist(s) Involved : MP Pandey; SC Mani; Harpal Singh and associates
Year of Release : 1997
Sowing Time : 10 - 20 June in Kharif season
Germination Time : 3 days
Flowering Time : 13 - 30 September
Maturity Time : 115 days
Ripening Time : 30 days
Yield per Hectare : 70 qtls per ha
Climate Required : Sub-tropical (25 ° C to 30 ° C)
Soil Type : Clay loam
Fertilizer Doses : 150 kg N, 40 kg P₂O₅ and 40 kg K₂O per ha
Irrigation Schedule : Standing water should be at least 3-5 cm
Disease Tolerance : Moderately resistance to BD, leaf role and blight
Pest Management : MR to SB and BPN/WSPU

Price of Seed : Rs 60/kg
Special Feature(s) : Pigmented basal point of stem and apiculus of the spikelet
Profitability : Hybrid crop as well as hybrid seed production both are most profitable

Department of Horticulture

University of Agricultural Science (UAS)
Dharwad - 580005, Karnataka, India
Phone: 348321, 347422, Telex: 965244 AGCDIN
Fax: 091-0836-347958, 091-0836-348349

Name of the Crop : Tomato
HYV Name : Megha (L-15)
Scientist(s) Involved : BB Madalageri and associates
Year of Release : 1992
Sowing Time : June-July
Germination Time : 7 days
Flowering Time : 70-80 days
Maturity Time : 120 days
Ripening Time : 50-60 days
Yield per Hectare : 25 tons
Climate Required : 25-30° C for North Karnataka
Soil Type : Well drained sandy loam to medium black soil
Fertilizer Doses : 115 kg N, 100 kg P₂O₅, 60 kg K₂O per ha
Irrigation Schedule : Recommended for rainfed, if irrigated once in a week
Disease Tolerance : Tolerant to *Cercospora* (leaf spot) and resistant to bacterial wilt
Pest Management : Spraying of 1 ml monocrotophos and 2g Zineb/ltr are required to control the sucking pest and fungal diseases. Repeation of the same sprays at 2nd and 5th week after transplanting are necessary
Price of Seed : Rs 1500 per kg
Special Feature(s) : Determined plant growth, thick skinned, yield increase up to 43 over check variety, better keeping qualities
Profitability : CB Ratio-1:2.25

Name of the Crop : Brinjal
HYV Name : Composite-2
Scientist(s) Involved : BB Madalageri and associates
Sowing Time : June-July and October-November
Germination Time : 8 days
Flowering Time : 90-120 days
Maturity Time : 150 days
Ripening Time : 70-80 days
Yield per Hectare : 30-40 tons

Climate Required	: 30-40 ° C recommended
Soil Type	: Well drained sandy loam and black soil
Fertilizer Doses	: 125 kg N, 100 kg P ₂ O ₅ , 50 kg K ₂ O per ha
Irrigation Schedule	: Recommended for rainfed if irrigated once in 4-5 days
Disease Tolerance	: Tolerant to bacterial wilt and resistant to nematodes
Pest Management	: Spraying of Dimethoat 1.7 ml, Dicofol 2.5 ml/ltr and Carbaryl 3g/ltr are necessary
Price of Seed	: Rs200 per kg
Special Feature(s)	: Purple colour fruits, increased yield of 15.34% over cultivated types
Profitability	: CB Ratio 1:2.5

Department of Vegetable Science

Govind Ballabh Pant University of Agriculture and Technology

Pantanagar -263145, UP, India

Phone: 05948, 33632 (O), 33813 (R), Fax: 05948-33473

Email: deanag @ gbpuat.ernet.in

Name of the Crop	: Brinjal
HYV Name	: Pant Brinjal Hybrid-1
Scientist(s) Involved	: Y V Singh; Hari Har Ram
Year of Release	: 1993
Sowing Time	: July and December
Germination Time	: 6-8 days in July and about 15 days in December
Flowering Time	: November to January and April to May
Maturity Time	: About 70 days for first picking after transplanting
Ripening Time	: 60-90 days
Yield per Hectare	: About 600 qtls (fruit)
Climate Required	: Moderate, tropical climate
Soil Type	: Sandy Loam
Fertilizer Doses	: 120 kg N, 60 kg P ₂ O ₅ , 40 kg K ₂ O per ha
Irrigation Schedule	: As per requirement during rainy season crop and about 10 days interval for spring summer crop
Disease Tolerance	: Moderately resistant to bacterial wilt
Pest Management	: Tolerant to shoot and fruit borer
Price of Seed	: Rs 2000/kg (Approx.)
Special Feature(s)	: High yield potential and resistance to bacterial wilt under field conditions
Profitability	: Profitable
Other Feature(s)	: Long fruited brinjal variety (with attractive bright purple colour)

Department of Vegetable Science

Narendra Deva University of Agriculture and Technology

Kumarganj, Faizabad-224229, UP, India

Name of the Crop : Brinjal (*Solanum Melongena* L)
HYV Name : Narendra Hybrid Brinjal - 2
Scientist(s) Involved : J Dixit; RD Singh; NC Gautam; DP Misra
Year of Release : 1996
Sowing Time : June-July, October-November, Feb-March
Germination Time : 5-7 days
Flowering Time : 40-45 days after transplanting
Maturity Time : 85-90 days
Ripening Time : 10-12 days
Yield per Hectare : 550-600 qtls
Climate Required : Warm season, 18 ° C - 35 ° C
Soil Type : Sandy loam and loam
Fertilizer Doses : 150-200kg N, 60kg P, 60kg K kg per ha
Irrigation Schedule : According to season 7-12 days interval during summer
Disease Tolerance : Moderately resistant to shoot and fruit borer
Pest Management : Two spray of insecticide to control shoot and fruit borer
Price of Seed : Rs 4500
Special Feature(s) : It is better in fruit shape, size, colour and yield than other varieties. Fruits are long (Thick oblong) shining purple colour with soft flesh
Profitability : Cost benefit ratio 1:6
Other Feature(s) : It is suitable for cultivation throughout the year

Name of the Crop : Brinjal (*Solanum Melongena* L)
HYV Name : Narendra Hybrid Brinjal-1 (round)
Scientist(s) Involved : J Dixit, RD Singh; NC Gautam
Year of Release : 1995
Sowing Time : June- July, October- November, February- March
Germination Time : About 10 days
Flowering Time : 55-60 days after transplanting
Maturity Time : 100 to 110 days
Ripening Time : 10-15 days
Yield per Hectare : 500-550 qtls
Climate Required : Long, warm growing season, 88° C - 35° C
Soil Type : Sandy loam to loam
Fertilizer Doses : 150-200 kg N, 60 kg P, 60kg K per ha
Irrigation Schedule : According to season 7-12 days interval during summer
Disease Tolerance : Moderately resistant to little leaf and fruit borer in field conditions
Pest Management : Two to three spray of insecticide to control shoot and fruit borer
Price of Seed : Rs 4500
Special Feature(s) : It is superior in yield, shape and size and colour than other recognised varieties fruit are round, soft in texture, less seeded

Profitability : Cost benefit ratio 1:8
Other Feature(s) : Early in maturity, leaves purple green, average fruit weight 200gm

Dr. YS Parmar University of Horticulture and Forestry
Nauni, Solan, Himachal Pradesh-173230, India

Name of the Crop : Capsicum (Bell pepper)
HYV Name : Solan Hybrid-I
Scientist(s) Involved : SN Peshin; AK Joshi and PP Sharma
Year of Release : 1994
Sowing Time : April (Summer Season)
Flowering Time : June to July
Germination Time : 10-12 days
Maturity Time : 90-110 days
Ripening Time : 45 days
Yield per Hectare : 350-400 qtls
Climate Required : Sub-temperate Climate, prolonged growing season, 20-25° C is optimum
Soil Type : Loam soil
Fertilizer Doses : 150-160 kg N, 110 kg P₂O₅ , 80-85 kg K₂O and 15 tons of FYM per ha
Irrigation Schedule : Irrigation at weekly interval, waterlogging should be avoided.
Disease Tolerance : Sensitive to *Phytophthora* blight
Price of Seed : Rs400 per 10 gm seed
Special Feature(s) : Tall plants, fruits 3-4 lobed, blocky prolific bearer, 20-25 fruits per plant, Average yield 350-400 qtls per ha and as early as 8 days to standard *Bharath* hybrid of IAHS - Bangalore

Name of the Crop : Capsicum (Bell pepper)
HYV Name : Solan Hybrid - II
Scientist(s) Involved : SN Peshin; AK Joshi; PP Sharma and UK Kohli
Year of Release : 1995
Sowing Time : April to May (summer season)
Germination Time : 10-12 days
Flowering Time : June to July
Maturity Time : 85-110 days
Ripening Time : 40-45 days
Yield per Hectare : 340 qtls
Climate Required : Sub-temperate climate, prolonged growing season, 20-25° C
Soil Type : Ordinary loam soil
Fertilizer Doses : 140-150 kg N, 100-110 kg P₂O₅ , 100 kg K₂O and 12-15 tones of FYM per ha
Irrigation Schedule : Sensitive to waterlogging, low and frequent irrigation is required

Disease Tolerance : Sensitive to *Phytophthora* blight and *Anthraco*se
Pest Management : Tolerant to viral complex disease
Price of Seed : Rs400 per 10 gm seed
Special Feature(s) : Plant tall, early by 8 days to Solan Hybrid-1 fruits 3-4 lobed, rectangular shape of 8.5 x 7.5 cm, prolific bearer, tolerant to fruit rot and viral disease complex

Name of the Crop : Capsicum (Bell Pepper)
HYV Name : CH-1
Scientist(s) Involved : UK Kohli and Ashok Kumar
Year of Release : 1996
Sowing Time : April - May (summer season)
Germination Time : 7-12 days
Flowering Time : Mid June to July end
Maturity Time : 105-115 days
Ripening Time : 55 days
Yield per Hectare : 70-80 tons
Climate Required : Sub-temperate climate, prolonged growing season
Soil Type : Ordinary loam soil
Fertilizer Doses : 175-180 kg N, 120 kg P₂O₅ , 80-100 kg K₂O and 16-18 tones of FYM per ha
Irrigation Schedule : At 7-10 days intervals irrigation is required, plant is highly sensitive to waterlogging conditions
Disease Tolerance : Tolerant to fruit rot and viral complex disease
Price of Seed : Rs 400 per 10 gm seed
Special Feature(s) : Erect and tall plants, prolific bearer fruits 3-4 lobed, require long growing season

Name of the Crop : Cucumber
HYV Name : Solan Hybrid Khira-1
Scientist(s) Involved : HR Sharma; RS Rattan; SK Gupta and UK Kohli
Year of Release : 1995
Sowing Time : May-June (Mild Summer and Rainy Season)
Germination Time : 7-10 days
Flowering Time : Mid July, first flowering after 55 days
Maturity Time : 75 days
Ripening Time : 30-35 days
Yield per Hectare : 300-400 qtls
Climate Required : Sub-temperate to tropical conditions
Soil Type : Ordinary Loam Soil
Fertilizer Doses : 150-160 kg N, 75 kg P₂O₅ , 45 kg K₂O and 15-20 tons of FYM per ha
Irrigation Schedule : As and when required

Disease Tolerance : Sensitive to powdery mildews and *Anthracnose*
Pest Management : Sensitive to fruit fly
Special Feature(s) : Smooth and uniform fruit shape, dark green in colour, early and prolific bearer, fruit 12-14 cm long

Name of the Crop : Tomato
HYV Name : Solan Sagun
Scientist(s) Involved : UK Kohli, RS Rattan and HR Sharma
Year of Release : 1993
Sowing Time : March (summer season)
Germination Time : 7-8 days
Flowering Time : 20 June to 30th July
Maturity Time : 100-105 days
Ripening Time : 45-50 days
Yield per Hectare : 500 qtls
Climate Required : Sub-temperate region
Soil Type : Ordinary Loam Soils
Fertilizer Doses : 150 kg N, 112.5 kg P₂O₅, 82.5 kg K₂O and 37.5 tons of FYM per ha
Irrigation Schedule : Frequent irrigation at the time of transplanting and followed by weekly interval
Disease Tolerance : Sensitive to fruit rot, *Alternaria*, and blight/ spot disease
Pest Management : Fruit flies and fruit borers should be controlled
Price of Seed : Rs 350 per 10 gm of seed
Special Feature(s) : Plant semi-indeterminate, thick dark green foliage, 5-6 fruits per cluster, 65 gm fruit, TSS-60B, ready for harvest after 100-105 days after sowing of seed

Fruit Research Station
Himayat Bagh, Aurangabad - 431005
Maharashtra, India

Name of the Crop : Tomato
HYV Name : ATH-1 (AC2549 x Hawaii 7992)
Scientist(s) Involved : ST Berikar; SG Lonkar; LD Barbind and associates
Year of Release : 1985; By state variety release committee, Government of Maharashtra, Mumbai
Sowing Time : Kharif: June-July; Rabi: Sept-October
Germination Time : 6-7 days
Flowering Time : 60-65 days
Maturity Time : 105-110 days
Ripening Time : 45 to 60 days
Yield per Hectare : 500-550 qtls

Climate Required	: 10-35 ° C
Soil Type	: Medium black well drained with 6-7 pH
Fertilizer Doses	: 50Kg N, 50Kg P ₂ O ₅ , 50Kg k ₂ O per hectare as basal dose; 25 Kg N per ha top-dressing is required after 21 days of transplanting and 25 kg N as 2nd top dressing after 21 days of 1st top dressing
Irrigation Schedule	: Irrigation interval of 8 to 10 days during winter (Rabi) season, overwatering is harmful
Disease Tolerance	: Tolerant to diseases early blight and spotted wilt virus
Pest Management	: i. Application of phorate@ 1kg per ha between the lines after sowing is necessary. ii. Two sprayings of Nuvacron (1.25 ml per liter of water) and Dithane M-45 is required (30.0 gm per liter of water) with interval of 10-15 days, three weeks after transplanting
Price of Seed	: Rs 9000 per kg
Special Feature(s)	: It has given 45% more yield than both the checks i.e. Pusa Ruby and Karnataka hybrid. The hybrid also possesses good transport and keeping quality. As the hybrid (ATH-1) is developed by using positional male sterile line AC-2549 (closed anther mutant) 50-60% labour is saved in seed production
Profitability	: Rs 8000-10,000 per ha (net profit)

Horticulture College and Research Institute

Regional Research Station, Paiyur, Tamil Nadu Agricultural University, Coimbatore-3, India

Name of Crop	: Okra
HYV Name	: CO.2(F1)
Year of Release	: 1987
Sowing Time	: June-August; February-March
Germination Time	: 3-7 days
Flowering Time	: 20-25 days after planting
Maturity Time	: 90 days
Ripening Time	: 5-7 days after flowering
Yield per Hectare	: 16-18 tons
Climate Required	: Requires warm climate
Soil Type	: Sandy loam to clayey loam
Fertilizer Doses	: FYM 25 tons 40 kg N, 50 kg P ₂ O ₅ , 30 kg K ₂ O per ha
Irrigation Schedule	: Once in a week
Disease Tolerance	: Susceptible to yellow vein mosaic Powdery mildew wet table sulphur 1 kg per ha
Pest Management	: Fruit borer: Spray carbaryl 50 WP 1 kg per ha or Endosulphan 35 EC/Lit per ha; Sucking pests: Monocrotophos or 750 m per ha Dimethoate 1 lit per ha; Nematode: Carbofuran 3 @ 1 kg ai per ha + Neem cake 200 kg; yellow mosaic virus: Spray monocrotophos 500 m.

Price of Seed : Rs 120/-
Special Feature(s) : Suitable for kitchen garden and commercial besides as on intercrop. Susceptible to yellow vein mosaic
Profitability : 1:2.8 to 3.0 F1 hybrid between, AE.180X Pusa sawani
Other Feature(s) : Fairly Long fruits, surface is less hairy, green Incobr with a better consumers appeal and market preference

Name of the Crop : **Okra**
HYV Name : CO.3(F1)
Organization : Department of Olericulture, Faculty of Horticulture, Tamil Nadu Agricultural University, Coimbatore-3
Scientist(s) Involved : Veeraraghavathatham and Th.N Ragupathi
Year of Release : 1991
Sowing Time : Feb-June, June-August, July- September
Germination Time : 3-7 days
Flowering Time : 20-25 days after planting
Maturity Time : 90 days
Ripening Time : 5-7 days after flowering
Yield per Hectare : 16-18 tons
Climate Required : Requires a warm climate
Soil Type : Sandy loam to clayey loam
Fertilizer Doses : FYM 25 tons 40 kg N, 50 kg P₂O₅ , 30 kg K₂O per ha
Irrigation Schedule : Once in a week
Disease Tolerance : Moderately resistant to yellow vein mosaic disease powdery mildew wettable sulphur 1 kg per ha
Pest Management : Fruit borer: Spray carbaryl 50 WP. 1 kg per ha or Endosulfan 35 EC/lit per ha; Sucking pests: Monocrotopos 750 m per ha Dimethoate 1 lit per ha; Nematode: carbofuran 3 G @ 1kg ai per ha + Neem cake 200 kg; Yellow mosaic virus: Vector spray monocrotophos 500 m.
Price of Seed : Rs 120/-
Special Feature(s) : Suitable for growing kharif as well as summer moderately resistant to yellow vein mosaic
Profitability : 1:2.8 to 3.0 F1 hybrid between Parbhani Kranti X MDU.1
Other Feature(s) : Frutis are dark green medium in size and suits to fresh market

Name of the Crop : Chilli
HYV Name : PKM.1
Scientist(s) Involved : IR Suthanthirapandian; Ilulappan; NChvezhian; KG Shanmugavelu
Year of Release : 1990
Sowing Time : January-February; June-July-September
Germination Time : 5-7 days
Flowering Time : 35-45 day after transplanting
Maturity Time : 180 days

Ripening Time : 25-35 days after flowering
Yield per Hectare : 3.08 tons dry fruit
Climate Required : Requires a warm climate (20-40 ° C)
Soil Type : Well drained lomy soil rich in organic matter
Fertilizer Doses : FYM 25 t per ha 75:35:35 kg of NPK per ha
Irrigation Schedule : Once in a week after establishment
Disease Tolerance : As in Chilli K.2
Pest Management : As in Chilli (for K.2 chillies)
Price of Seed : Rs 600/-
Special Feature(s) : Suitable for irrigated condition
Profitability : P:2.8 to 3.0
Other Feature(s) : Hybrid derivative of AC.1792 X Co.1 selected in F4 generation and fixed by seeing. Bold fruits work in red in color plants are dwarf

Name of the Crop : Onion
HYV Name : CO.4
Year of Release : 1982
Sowing Time : April-May; October-November
Germination Time : 5-7 days
Flowering Time : 60-75 days after sowing
Maturity Time : 65 days
Yield per Hectare : 19.0 tons
Climate Required : Requires a mild season without extremes of heat and cold
Soil Type : Red loam to black soils with good drainage
Fertilizer Doses : FYM 25 t per ha 60:60:30 kg of NPK per ha
Irrigation Schedule : Once in a week after establishment with hold irrigation 10 days before harvest
Disease Tolerance : Lear spot spray moncozeb 1 kg or copper 1.25 kg per ha chloride
Pest Management : Thrips end onion fly Methyl demeton 500 ml. 25 EC + Teapol 250 m per ha or Dimethode 30 EC 500 ml. Monocrotopos 500 ml. 30 NSC
Price of Seed : Rs 20/-
Special Feature(s) : Bulbs are bold in size 8-12 bulbs per dump
Profitability : 1:3.0 to 3.2
Other Feature(s) : Hybrid derivative of AC. 863 X Co.3 Bulbs are attractive light pink, bold in size with good consumer appeal and bulbs store well for 5 months

Name of the Crop : Snakegourd
HYV Name : MDU.1(F1)
Year of Release : 1981
Sowing Time : July-January
Germination Time : 7-10 days
Flowering Time : 85-90 days after sowing

Maturity Time : 145 days
Ripening Time : 25-35 days after flowering
Yield per Hectare : 31.75 tons
Climate Required : Requires a moderate to warm temperature
Soil Type : Sandy loam rich in organic matter with drainage
Fertilizer Doses : FYM 10 kg/pit 16:12:12 of NPK per ha
Irrigation Schedule : Once in a week after establishment
Disease Tolerance : Powdery mildew: carbendazim @ 50 kg per ha, downey mildew: monoozeb or chlorothalonil @ 1 kg per ha
Pest Management : Beetles fruitflies and caterpillars Malathion 50 EC 500 ml. (or) Dimethoate 30 EC 500 ml. (or) Penthion 100 EC 500 m per ha, do not use DDT, BHC Copper and sulphur dust
Price of Seed : Rs 200/-
Special Feature(s) : Suitable for home gardens
Profitability : 1:2.3 to 2.5
Other Feature(s) : F1 Hybrid between Panni Pudal X selection from Thadiyamangalam Medium long fruits with white strips under green back ground. Fairly rich in vit. A and low fibre centre

Name of the Crop : Tomato
HYV Name : Paiyur-1
Year of Release : 1988
Sowing Time : November-February; May-June
Germination Time : 3-4 days
Flowering Time : 20-25 days after planting
Maturity Time : 135-150 days
Ripening Time : 20-30 days after flowering
Yield per Hectare : 30 tons
Climate Required : 15-40 ° C suitable for summmer season
Soil Type : Well drained loamy soils rich in organic matter
Fertilizer Doses : 75 kg N, 60 kg P₂O₅ , 60 kg K₂O per ha + FYM. 25 tons
Irrigation Schedule : After establishment of once in a week
Disease Tolerance : Leaf spot: Zineb or Mancozeb 1 kg per ha. Low incience of leaf spot and leaf curl virus
Pest Management : Furit borer: Pheromone traps @ 12 per ha mechanical damage spray endosulphan 35 EC 1.25 l per ha spray VPV-250 Lb per ha; Root rot nematode: Carbofuran 3 G @ 10 10 g/s.m.
Price of Seed : Rs 600/-
Special Feature(s) : Suitable for rainfed cultivation
Profitability : 1:2.5 to 2.8 Derivative of Pusa Rubu X CO.3
Other Feature(s) : Fruits are round, medium sized, slight ribbing at calyx and with medium firmness ensuring keeping quality and distant transport

Mahatma Phule Krishi Vidyapeeth

Rahuri, Dist- Ahmednagar- 413722

Maharashtra, India

Name of the Crop : Brinjal
HYV Name : Krishna Hybrid
Scientist(s) Involved : KE Lawande; SR Gadakh; PN Kale and associates
Year of Release : 1991
Sowing Time : i. Kharif: June-July; ii. Rabi: September -October; iii. Summer: January-February
Germination Time : 7-10 days
Flowering Time : 50-55 days
Maturity Time : 175-180 days (from sowing to harvesting)
Yield per Hectare : 350-850 qtls per ha
Climate Required : 18 ° C to 35 ° C
Soil Type : Light, medium black, heavy black with well drained
Fertilizer Doses : 100 kg N, 50 kg P, 50 kg K per ha
Irrigation Schedule : Kharif: 10-12 days; Rabi: 8-10 days; Summer: 6-8 days
Disease Tolerance : Tolerant to little leaf
Pest Management : Tolerant to fruit borer
Price of Seed : Rs 5000/kg
Special Feature(s) : Good colour retention and keeping quality, excellent fruit colour, purple with white strips, non-lodging plant habit
Profitability : Rs20,000 to Rs25,000 per ha
Other Feature(s) : Fruits are spiny and face good consumers' preference

Name of the Crop : Tomato
HYV Name : Rajashree
Scientist(s) Involved : RS Patil; RS Wagh; CV Pujari; PN Kale
Year of Release : 1994
Sowing Time : Kharif: June - September; Rabi: October- January
Germination Time : 6 to 8 days
Flowering Time : 85 days
Maturity Time : 175 days
Ripening Time : 15 to 20 days
Yield per Hectare : 880 qtls per ha (range: 601 - 1420 qtls/ ha)
Climate Required : 18-30 ° C
Soil Type : Medium black-well drained
Fertilizer Doses : 225 kg N, 250 kg P, 250 kg K per ha
Irrigation Schedule : Kharif: 7-8 days interval (depending upon rains); Rabi: 5-6 days interval
Disease Tolerance : Comparatively less susceptible to viral diseases

Pest Management	: Fruit borer; aphids; white fly; thrips; jassids; leaf miner
Price of Seed	: Rs15,000/kg
Special Feature(s)	: Excellent foliage, fruit contains high amount of Ascorbic acid i.e. 43 mg/100 g
Profitability	: Net profit: Rs 30,000 to Rs 40,000 per hectare

Main Cotton Research Station

Gujarat Agricultural University
Surat-395007, India

Name of the Crop	: Cotton
HYV Name	: Hybrid-4
Scientist(s) Involved	: CI Patel and Co-workers
Year of Release	: 1971
Sowing Time	: Kharif
Germination Time	: 8-10 days
Flowering Time	: 80-85 days
Maturity Time	: 210-230 days
Ripening Time	: 90-100 days
Yield per Hectare	: 34.00 under high care; 10.75 under normal care
Climate Required	: Dry and warmer climate
Soil Type	: Black cotton soil
Fertilizer Doses	: 320 kg N only per ha
Irrigation Schedule	: Narmally 3-5 irrigation
Disease Tolerance	: Mildly susceptible to Blackarm, tolerant to fusarium wilt mildly susceptible in loamy soil to root rot
Pest Management	: Considering the adverse effects of indiscriminate use of insecticides, the concept of Intergrated Pest Management (IPM) for the control of cotton pests has become increasingly inevitable. Keeping this concept in mind following recommendations have been suggested for effective and economical pest control in the listed varieties of cotton.

Before sowing: i. Selection of healthy seeds of resistant/tolerant varieties, ii. Adopt proper crop rotation - cotton should not be followed by an alternate host like okra, iii. Avoiding monocropping, iv. Summer deep ploughing to expose soil inhibiting insects and pupae of bollworms, v. Removing and destroying the crop residues, vi. Intercropping of cowpea, onion, maize or coriander to conserve natural enemies of the pests, vii. Growing of trap crops like okra, castor, marigold, *Nicotiana rustica*, coriander to divert the pest away from cotton crop, viii. Removing and destroying of weeds which serve as alternate hosts e.g. Chidho, *Hibiscus Sp.* and other **malvaceous** plants in the cultivated area, ix. Synchronized sowing and avoiding staggered sowing and closer spacing. Manage

irrigation and fertilizer, x. Using of acid delinting seeds and certified seeds
xi. Avoiding summer season cotton and ratoon crop so as to reduce the carry over of pink bollworms and whitefly.

Vegetative phase: i. Clipping and destruction of terminal shoots affected by spotted bollworms, ii. Periodical collection and destruction of flowers, squares, buds and bolls containing eggs and larvae of *Heliothis* and *Spodoptera* skeletonized leaves containing early instance of *Spodoptera* and rosette flowers attacked by pink bollworms, iii. Monitoring Earias, *Spodoptera*, *Heliothis* and pink bollworms through pheromone traps and mass trapping with yellow sticky trap used in case of whitefly, iv. Release of *Chrysopa* @ 10000 per ha thrice in a season at weekly interval, v. Release of *Trichogramma* @ 2.5 lakh per ha 5-6 times at weekly interval depending upon pest pressure, vi. Release of *Chilonus blackburni* @ 10000-12000 per ha thrice in a season, vii. Use of Biopesticides like NPV @ 450 LU per ha for *Heliothis* and 250 LU per ha and BT @ 2.0 kg per ha for *Spodoptera*, viii. If sucking pests like aphids, jassids, thrips, whitefly etc. crossed the ETL, spraying of systemic insecticides such as methyl demeton and dimethoate @ 1.0 lit per ha or Phosphamidon @ 0.3 lit per ha is required, xi. When bollworms crossed the ETL, spraying of safer and contact insecticides like Endosulfan @ 2.0 lit per ha, phosalone @ 2.5 lit per ha, Quinalphos @ 2.0 lit per ha, Monocrotophos 1.0 lit per ha is required. Synthetic pyrethroids such as Fenvalerate, Cypermethrin and decamethrin should be restricted by applying them once or twice only during the peak flowering stage

Price of Seed	: Rs 280 per kg
Special Feature(s)	: The 1st successful hybrid for commercial cultivation giving high yield and suitable for cultivation in various soils and climatic conditions
Profitability	: 1:1.26
Name of the Crop	: Cotton
HYV Name	: G.Cot.Hy-6
Scientist(s) Involved	: NP Mehta; SN Badaya; GS Patel
Year of Release	: 1980
Sowing Time	: Kharif
Germination Time	: 8-10 days
Flowering Time	: 60-75 days
Maturity Time	: 190-210 days
Ripening Time	: 60-70 days
Yield per Hectare	: 38.00 under high care; 15.02 under normal care
Climate Required	: Dry and warmer climate
Soil Type	: Black cotton soil
Fertilizer Doses	: 320 kg N only per ha
Irrigation Schedule	: Normally 3-5 irrigation

Disease Tolerance : Resistant to blackarm and alternaria leaf spot
Price of Seed : Rs 280 per kg
Special Feature(s) : Early maturing and better yielding than hybrid-4 superior in fibre strength giving about 10's better spinning than Hybrid-4
Profitability : 1:1.26

Name of the Crop : Cotton
HYV Name : G.Cot.Hy-8
Scientist(s) Involved : NP Mehta; SN Badaya; GSPatel
Year of Release : 1988
Sowing Time : Kharif
Germination Time : 8-10 days
Flowering Time : 50-60 days
Maturity Time : 170-190 days
Ripening Time : 45-60 days
Yield per Hectare : 37.75 under high care; 14.19 under normal care
Climate Required : Dry and warmer climate
Soil Type : Black cotton soil
Fertilizer Doses : 320 kg N only per ha
Irrigation Schedule : Narmally 3-5 irrigation
Disease Tolerance : Resistant to blackarm and alternaria leaf spot
Price of Seed : Rs 280 per kg
Special Feature(s) : Early by 2-3 weeks compared G.Cot.Hy-6 suitable for double cropping and rainfed cultivation
Profitability : 1:1.26

Name of the Crop : Cotton
HYV Name : G.Cot.Hy-10
Scientist(s) Involved : NP Mehta; UG Patel; GS Patel;, PG Patel
Year of Release : 1995
Sowing Time : Kharif
Germination Time : 8-10 days
Flowering Time : 60-70 days
Maturity Time : 190-210 days
Ripening Time : 60-70 days
Yield per Hectare : 38.05 under highcare; 15.12 under normal care
Climate Required : Dry and warmer climate
Soil Type : Black cotton soil
Fertilizer Doses : 240 kg N only per ha
Irrigation Schedule : Narmally 3-5 irrigation
Disease Tolerance : Resistant to root rot and alternaria leaf spot.
Price of Seed : Rs 220 per kg
Special Feature(s) : Higher yield potentiality than existing and spinnable upto 40 to 50's

Profitability : 1:1.26

Name of the Crop : Cotton

HYV Name : G.Cot.DH-7

Scientist(s) Involved : NP Mehta; SN Badaya; GS Patel

Year of Release : 1984

Sowing Time : Kharif

Germination Time : 8-10 days

Flowering Time : 8-90 days

Maturity Time : 180-200 days

Ripening Time : 70-80 days

Yield per Hectare : 29.68 under high care; 16.89 under normal care

Climate Required : Dry and warmer climate

Soil Type : Black cotton soil

Fertilizer Doses : 160 kg N only per ha

Irrigation Schedule : Normally 2-3 irrigation

Disease Tolerance : Highly resistant to blackarm, resistant to leaf spot. Tolerant to root-rot, fusarium wilt mild resistant to grew mildew

Price of Seed : Rs 350 per kg

Special Feature(s) : The first desi hybrid having advantage of maturity, high yield and relative tolerance to pests and diseases

Profitability : 1:1.34

Name of the Crop : Cotton

HYV Name : G.Cot.DH-9

Scientist(s) Involved : NP Mehta; SN Badaya; GS Patel

Year of Release : 1989

Sowing Time : Kharif

Germination Time : 8-10 days

Flowering Time : 70-80 days

Maturity Time : 180-200 days

Ripening Time : 70-80 days

Yield per Hectare : 21.09 under high care; 16.69 under normal care

Climate Required : Dry and warmer climate

Soil Type : Black cotton soil

Fertilizer Doses : 160 kg N only per ha

Irrigation Schedule : Normally 2-3 irrigation

Disease Tolerance : Resistant to blackarm alternaria leaf spot tolerant to root-rot, fusarium wilt mild resistant to grew mildew

Price of Seed : Rs 350 per kg

Special Feature(s) : First extra long staple desi hybrid, early maturing, high yield potentiality and resistant to pests and diseses, particularly sucking pests.

Profitability : 1:1.26

Main Millet Research Station
Gujarat Agricultural University
Jamnagar - 361006, Gujarat, India

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)
HYV Name : HB-2
Scientist(s) Involved : K.V. Pethani and associates
Year of Release : 1966
Sowing Time : Kharif (on-set of monsoon)
Germination Time : 3 to 4 days after sowing
Maturity Time : 80 days
Yield per Hectare : 1.7 tons
Climate Required : 26-30⁰ C
Soil Type : Medium black to light soil
Fertilizer Doses : 80 kg N, 40 kg P₂O₅ per ha
Irrigation Schedule : 1 or 2 life saving irrigation
Disease Tolerance : Downy mildew resistant
Special Feature(s) : Higher grain yield as compared to local variety

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)
HYV Name : HB-3
Scientist(s) Involved : K.V. Pethani and associates
Year of Release : 1968
Sowing Time : Kharif (on-set of monsoon)
Germination Time : 3 to 4 days after sowing
Maturity Time : 79 days
Yield per Hectare : 2.35 tons
Climate Required : 26-30⁰ C
Soil Type : Medium black to light soil
Fertilizer Doses : 80 kg N, 40 kg P₂O₅ per ha
Irrigation Schedule : 1 or 2 life saving irrigation
Disease Tolerance : Downy mildew resistant
Special Feature(s) : Very high grain yield as compared to HB-2 and local variety

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)
HYV Name : GHB-1399
Scientist(s) Involved : K.V. Pethani and associates
Year of Release : 1975
Sowing Time : Kharif (on-set of monsoon)
Germination Time : 3 to 4 days after sowing

Maturity Time : 79 days
Yield per Hectare : 2.4 tons
Climate Required : 26-30⁰ C
Soil Type : Medium black to light soil
Fertilizer Doses : 80 kg N, 40 kg P₂O₅ per ha
Irrigation Schedule : 1 or 2 life saving irrigation
Disease Tolerance : Very high degree of downy mildew resistant as compared to HB-3 and local variety
Special Feature(s) : Higher grain yield

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)
HYV Name : GHB-27
Scientist(s) Involved : HR Dave; KV Pethani; MB Kachrola; Iqbal Hussain
Year of Release : 1981
Sowing Time : Kharif (on-set of monsoon)
Germination Time : 3 to 4 days after sowing
Maturity Time : 81 days
Yield per Hectare : 2.28 tons
Climate Required : 26-30⁰ C
Soil Type : Medium black to light soil
Fertilizer Doses : 80 kg N, 40 Kg P₂O₅ per ha
Irrigation Schedule : 1 or 2 life saving irrigation
Disease Tolerance : Very high degree of downy mildew resistant as compared to existing recommended hybrids
Pest Management : i. Single application of methyl-0-demeton 0.05% (1:4.06) or Endosulfan 0.07% (1:2.98) or Quinalphos 0.05% (1:2.38) or Fenitrothion 0.05% (1:2.35) at 15 days after germination was found effective and therefore, can be recommended for the control of bajra shootfly and stemborer, ii. For the intergrated control of shootfly and stemborer on bajra crop, the treatment of higher seed rate of 5 kg per ha and removing dead hearts was found to be superior and gave the highest ICBR i.e. (1:7.70), iii. For the control of shootfly and stemborer in bajra crop, a single dusting of Methyl-parathion 2% dust @ 20 kg per ha at 15 days after germination (NICBR 1:4.52), iv. Three sprays of Neemark 30 ml in 10 litre of water (ICBR 1:3.8) or Trizophos 0.04% (ICBR 1:3.7) at 10, 20 and 30 days after germination of bajra effective control the shootfly, v. Two dusting of Malathion 5% dust @ 25 kg per ha (ICBR 1:9.4) or two spraying of Neem oil 0.05% with soap (4 g/1) (ICBR 1:8.7) or two spraying of Endosulfan 0.07% (ICBR 1:6.3) at 10 and 20 days after germination is recommended for the control ended for the control of bajra shootfly, vi. Green gram of pigeonpea taken as an inter crop in bajra in ratio of 2:1 found to reduce the incidence of shootfly and *Helicoverpa armigera* and equivalent bajra yield

of 2.56 tons and 2.54 tons per ha (ICBR 1:5.8 and 1:3.0 respectively) as compared to sole bajra crop (2.31 tons per ha)

Special Feature(s) : Higher grain yield and has got superior grain quality. It has got higher fodder yield

Profitability : GHB-27 has given 4 to 30% higher grain yield over check hybrids

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)

HYV Name : GHB-32

Scientist(s) Involved : HR Dave; KV Pethani; Iqbal Hussain; K.V. Buhecha

Year of Release : 1984

Sowing Time : Kharif (on-set of monsoon)

Germination Time : 3 to 4 days after sowing

Maturity Time : 79 days

Yield per Hectare : 2.8 tons

Climate Required : 26-30 ° C

Soil Type : Medium black to light soil

Fertilizer Doses : 80 kg N, 40 Kg P₂O₅ per ha

Irrigation Schedule : 1 or 2 life saving irrigation

Disease Tolerance : It has a high degree of resistance against downy mildew

Special Feature(s) : Higher grain as well as fodder yield. It has long, compact and very attractive earhead

Profitability : It has given 2% higher grain yield and 28% higher fodder yield than BJ-104

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)

HYV Name : GHB-30

Scientist(s) Involved : HR Dave; KV Pethani; Iqbal Hussain

Year of Release : 1986

Sowing Time : Kharif (on-set of monsoon)

Germination Time : 3 to 4 days after sowing

Maturity Time : 79 days

Yield per Hectare : 2.17 tons

Climate Required : 26-30 ° C

Soil Type : Medium black to light soil

Fertilizer Doses : 80 kg N, 40 Kg P₂O₅ per ha

Irrigation Schedule : 1 or 2 life saving irrigation

Disease Tolerance : High degree of downy mildew resistant

Special Feature(s) : Higher grain yield as compared to existing hybrids

Profitability : It has got 10 to 18% higher grain yield as compared to check hybrids

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)

HYV Name : GHB-181

Scientist(s) Involved : HR Dave; KV Pethani; SJ Dholaria

Year of Release : 1989
Sowing Time : Kharif (on-set of monsoon)
Germination Time : 3 to 4 days after sowing
Maturity Time : 79 days
Yield per Hectare : 2.17 tons
Climate Required : 26-30 ° C
Soil Type : Medium black to light soil
Fertilizer Doses : 80 kg N, 40 Kg P₂O₅ per ha
Irrigation Schedule : 1 or 2 life saving irrigation
Disease Tolerance : High degree of downy mildew resistant and better reaction to smut and ergot diseases
Special Feature(s) : Higher gain as well as fodder yield as compared to existing recommended hybrids
Profitability : It has out-yielded all the five checks by 15 to 41% in grain yield

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)
HYV Name : GHB-15
Scientist(s) Involved : HR Dave; KV Pethani; SJ Ukani; SJ Dholaria
Year of Release : 1992
Sowing Time : Kharif (on-set of monsoon)
Germination Time : 3 to 4 days after sowing
Maturity Time : 78 days
Yield per Hectare : 2.17 tons
Climate Required : 26-30 ° C
Soil Type : Medium black to light soil
Fertilizer Doses : 80 kg N, 40 Kg P₂O₅ per ha
Irrigation Schedule : 1 or 2 life saving irrigation
Disease Tolerance : It has got high degree of resistance against downy mildew superior reaction against ergot and almost equal reaction to smut as compared to the recommended hybrids (checks)
Price of Seed : Rs 22 per kg hybrid seed
Special Feature(s) : It has early maturity higher number of effective tillers with higher grain as well as fodder yields as compared to existing recommended hybrids
Profitability : It has given 2 to 24% higher grain yield than check hybrids

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)
HYV Name : GHB-235
Scientist(s) Involved : HR Dave; KV Pethani; SJ Ukani; SJ Dholaria
Year of Release : 1992
Sowing Time : Kharif (on-set of monsoon)
Germination Time : 3 to 4 days after sowing
Maturity Time : 80 days
Yield per Hectare : 2.14 tons

Climate Required : 26-30 ° C
Soil Type : Medium black to light soil
Fertilizer Doses : 80 kg N, 40 Kg P₂O₅ per ha
Irrigation Schedule : 1 or 2 life saving irrigation
Disease Tolerance : It has shown higher degree of resistance against downy mildew and has got almost equal reaction to ergot and superior reaction to smut as compared to checks
Special Feature(s) : Higher grain yield, higher fodder yield as compared to recommended hybrids. It has especially performed very well in North Gujarat, North West Gujarat and South Saurashtra Agroclimatic Zones
Profitability : GHB-235 has out yielded 2 to 22% higher grain yield and 1 to 11% higher fodder yield than check hybrids

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)
HYV Name : GHB-183
Scientist(s) Involved : HR Dave; KV Pethani; RL Joshi and associates
Year of Release : 1993
Sowing Time : Summer season (15th February to 15th March)
Germination Time : 4 to 5 days after sowing
Maturity Time : 83 days
Yield per Hectare : 5.23 tons
Climate Required : 26-30 ° C
Soil Type : Medium black
Fertilizer Doses : 80 kg N, 40 Kg P₂O₅ per ha, it is also high responsive to higher dose of fertilizer i.e. 120:60:00
Irrigation Schedule : Total 8 to 10 irrigation at the interval of 8 to 10 days according to soil types
Disease Tolerance : In summer season there is no problem of diseases in commercial hybrid bajra crop. However, under field condition it is completely free from downy mildew, ergot and almost free from smut infection
Special Feature(s) : It has got acceptable plant and ear type with higher grain and fodder yields as compared to existing hybrids (checks). It is recommended for summer season cultivation
Profitability : It has out-yielded all the checks by 5% to 23% in grain and 17% to 26% in fodder yield as compared to check hybrids

Name of the Crop : Pearl Millet (*Pennisetum glaucum*)
HYV Name : GHB-316
Scientist(s) Involved : KV Pethani; HR Dave; HJ Joshi; SJ Dholaria
Year of Release : 1997
Sowing Time : Kharif (on-set of monsoon)
Germination Time : 3 to 4 days after sowing
Maturity Time : 82 days
Yield per Hectare : 2.1 tons

Climate Required : 26-30 ° C
Soil Type : Medium black to light soil
Fertilizer Doses : 80 kg N, 40 Kg P₂O₅ per ha
Irrigation Schedule : 1 or 2 life saving irrigation
Disease Tolerance : Higher degree of downy mildew resistant
Special Feature(s) : Higher grain as well as fodder yields as compared to recommended checks hybrids. Attractive grain colour, shape and stable over wide range of environment. Responsive to fertilizers, acceptable plant an ear type. Good fodder quality and Rotala taste
Profitability : GHBV-316 has yielded 9% to 25% higher grain yield than check hybrids

Main Sorghum Research Station

Gujarat Agricultural University
Surat-395007, India

Name of the Crop : Sorghum
HYV Name : Gujarat Sorghum Hybrid-1
Scientist(s) Involved : KR Desai; RH Patel; SMU Kukadia; SBS Tikka and SDT Desai
Year of Release : 1982
Sowing Time : July, Kharif and late kharif
Germination Time : One week
Flowering Time : 70 days
Maturity Time : 108 days
Yield per Hectare : 4700 grain and 9500 stover kg per ha
Climate Required : Moderate
Soil Type : All types
Fertilizer Doses : 80 kg N, 40 kg P₂O₅ per ha
Disease Tolerance : Moderately resistant to grain mold
Pest Management : Moderately resistant to eared worm
Price of Seed : Rs 30 kg
Special Feature(s) : Early hybrid
Other Feature(s) : It possesses white pearly grains. The parents were 2077-A x NVS-13 and was recommended for kharif cultivation

Nimbkar Agricultural Research Insitute

PO Box 44, Phaltan-415523 (MS)

Name of the Crop : Sweet Sorghum (bicolor L.)
HYV Name : Madhura
Scientist(s) Involved : AR Ghanekar; N Nimbkar; V Singh
Year of Release : 1990

Sowing Time	: Monsoon (Kharif): Anytime during the month of June; Winter (rabi): Last week of September to first week of October
Germination Time	: 4-5 days
Flowering Time	: 70-75 days after sowing
Maturity Time	: 110-120 days in kharif and 120-130 days in rabi season
Ripening Time	: 40-50 days
Yield per Hectare	: 30-40 tons
Climate Required	: It can be grown in all climatic conditions but is well suited to moderate day and night temperature conditions in rabi and kharif seasons
Soil Type	: Medium to deep black cotton soil is preferred
Fertilizer Doses	: A dose of 100 kg N, 50 kg P ₂ O ₅ and 50 kg K ₂ O per hectare is recommended N to be given in split doses
Irrigation Schedule	: This crop can be grown under rainfed conditions wherever the rainfall is assured. In Kharif 4 to 6 irrigations at an interval of 10-15 days are required but in winter 5 to 7 irrigations and in summer 6 to 8 irrigations should be given
Disease Tolerance	: Susceptible to leaf blight (<i>Helminthosporium turcicum</i>)
Pest Management	: Sorghum shootfly, stem borer and sorghum midge are the major insect pests which can drastically reduce yields of grain and stalk. To control shootfly, a systemic insecticide such as Disyston 5G or Carbofuran 3G at the rate of 2.0 kg a.i. per hectare should be applied in soil before sowing. Timely planting in kharif before the end of June can significantly reduce shootfly attack. For the control of stem borer the crop should be sprayed with 0.05 to 0.07 Endosulfan 15 days after germination
Price of Seed	: Rs 25 per kg
Special Feature(s)	: Higher grain and stalk yield than other recognized variety
Profitability	: Very much depends on whether stalk juice is utilized for getting by products such as alcohol syrup or jaggery or whether stalks are used for fodder

Paddy Breeding Station

Department of Rice Centre for Plant Breeding and Genetics
Tamil Nadu Agricultural University, Coimbatore-3, India

Name of the Crop	: Paddy
HYV Name	: CORH 1 (MGR)
Scientist(s) Involved	: M Rangaswamy; MN Prasad; SS Virmani; EA Siddiq and associates
Year of Release	: 1994
Sowing Time	: May-June
Germination Time	: 5 days
Flowering Time	: 85 days
Maturity Time	: 115 days

Ripening Time	: 30 days
Yield per Hectare	: 6 tons
Climate Required	: Average temp 28-32 ° C
Soil Type	: Clay soil
Fertilizer Doses	: 150 kg N, 60 kg P ₂ O ₅ , 60 kg K ₂ O per ha
Irrigation Schedule	: Irrigated garden land and Wetland conditions
Disease Tolerance	: Moderately resistant to RTV, Brown spot, Sheath rot
Pest Management	: Moderately resistant to BPH, WBPH, GLH
Price of Seed	: Rs 50/kg
Special Feature(s)	: 1 tonne increased yield over IR 50, highly responsive to Bio-fertilizers
Profitability	: Rs 3000/- per ha
Other Feature(s)	: The grain is medium slender, white rice and has acceptable quality characters

Pulses Research Unit

Panjabrao Deshmukh Krishi Vidyapeeth,
Akola 444104, India

Name of the Crop	: Pigeonpea
HYV Name	: AKPH-4101
Scientist(s) Involved	: KB Wanjari and AN Patil
Year of Release	: 1997
Sowing Time	: June-July (Rainy season)
Germination Time	: 4-5 days after sowing
Flowering Time	: 80 to 90 days
Maturity Time	: 135 to 145 days
Ripening Time	: 35 to 60 days
Yield per Hectare	: 17 to 20 qtls
Climate Required	: Tropical climate
Soil Type	: Deep soil, clay or clay loam
Fertilizer Doses	: 20 Kg N + 40 kg P ₂ O ₅ per ha
Irrigation Schedule	: One or two irrigation at flowering and or pod development (if stress occurs)
Disease Tolerance	: Tolerant to <i>Fusarium</i> wilt
Pest Management	: IPM against Helicoverpa
Special Feature(s)	: Short duration, high yielding, medium bold (8.3 gm/100 seed) red seed
Profitability	: Distinct yield superiority 25 over ICPH-8 (Check)
Other Feature(s)	: Fairly good in reaction to diseases than ICPH-8, Synchrony in flowering and maturity of its parents

Name of the Crop	: Pigeonpea
HYV Name	: AKPH-2022

Scientist(s) Involved : KB Wanjari and AN Patil
Year of Release : 1977
Sowing Time : June-July (Rainy season)
Germination Time : 4-5 days after sowing
Flowering Time : 125 to 135 days
Maturity Time : 180 to 200 days
Ripening Time : 40 to 60 days
Yield per Hectare : 18 to 20 qtls
Climate Required : Tropical climate
Soil Type : Deep soil, clay or clay loams
Fertilizer Doses : 25kg N + 50kg P₂O₅ per ha
Irrigation Schedule : One or two irrigations at flowering and or pod development (if stresses occurs)
Disease Tolerance : Tolerant to Fusarium wilt
Pest Management : IPM against Helicoverpa
Special Feature(s) : Medium duration, high yielding, medium bold (10 gm/100 seed) red seed
Profitability : Distinct yield superiority 35 over BDN-2, 29 over C-11 and 25 over ICPL-87119
Other Feature(s) : Suitable for kharif as well as late kharif (Sept. sowing) in vidarbha region of Maharashtra State. Suitable for intercropping with cotton, sorghum

Name of the Crop : Muskmelon
HYV Name : Punjab Hybrid
Scientist(s) Involved : KS Nandpuri; Surjan S; Tarsem Lal
Year of Release : 1981
Sowing Time : i. Direct sowing: Mid February onward ii. Sowing in polythene bags (14x10 cm size): Last week of January to 1st week of February
Germination Time : One week
Flowering Time : April
Maturity Time : Second week of May (75 days)
Ripening Time : 35 days
Yield per Hectare : 160 qtls/ ha
Climate Required : Summer season (February-June)
Soil Type : Loam or sandy loam
Fertilizer Doses : 125 kg N, 62 kg P₂O₅ , 62kg k₂O per ha
Irrigation Schedule : 9-11 irrigation, during fruit maturity, irrigate only when needed
Disease Tolerance : Tolerant to powdery mildew, susceptible to downy mildew
Pest Management : i. Five sprays of fungicides for controlling downy mildew, ii. two sprays for controlling powdery mildew, and iii. 3-4 sprays of insecticide are required for controlling the attack of red pumpkin beetle fruit fly and mite
Price of Seed : Rs3000/-per kg

Special Feature(s) : Early maturity, high and stable TSS
Profitability : Rs25,000-30,000 per ha
Other Feature(s) : Hybrid seed production has been economized by the use of monogenic recessive male sterility. Seed yield is 75 kg per ha

Name of the Crop : Muskmelon
HYV Name : MH-10
Scientist(s) Involved : Tarsem Lal; KS Nandpuri; MS Dhaliwal
Year of Release : 1995
Sowing Time : Direct: Mid February onwards, sowing in polythene bags (14x10 cm size) last week of January to 1st week of February
Germination Time : One week after sowing
Flowering Time : 30-35 days
Maturity Time : 60-70 days from transplanting
Ripening Time : 30-35 days
Yield per Hectare : 240 qtls
Climate Required : Summer season (February to June)
Soil Type : Loam or loamy sand
Fertilizer Doses : 125 kg N, 62 kg P₂O₅ , 62 kg K₂O per ha
Irrigation Schedule : 9-11 irrigation; irrigation is also required during fruit maturity
Disease Tolerance : Sensitive to powdery downy mildew
Pest Management : i. Five sprays of fungicides for controlling downy mildew, ii. two sprays for controlling powdery mildew, and iii.3-4 sprays of insecticides are required for controlling the attack of red pumpkin beetle fruit-fly and mite
Price of Seed : Rs 2000 per kg
Special Feature(s) : Early maturity, high yield and good transportability of fruits
Profitability : Rs 20,000-25,000 per ha
Other Feature(s) : Gynoecism has been exploited for hybrid seed production. Seed yield is 100-125 kg per ha

Name of the Crop : Chili
HYV Name : CH-1
Scientist(s) Involved : JS Hundal and DS Khurana
Year of Release : 1992
Sowing Time : Sowing: October - November; transplanting: February - March
Germination Time : 15 to 20 days
Flowering Time : June - August
Maturity Time : 90 days
Ripening Time : 40 days
Yield per Hectare : 250 qtls (red ripe fruit)
Climate Required : 30-35° C and rain free

Soil Type : Sandy Loam
Fertilizer Doses : 60 kg N, 30 kg P₂O₅ , 30 kg K₂O per ha
Irrigation Schedule : 5-6 days interval during hot and 8-10 days during cool season
Disease Tolerance : Tolerant to viral and fungal diseases
Pest Management : Two sprays of insecticide to central aphid borer mite etc. and two sprays of fungicide
Price of Seed : Rs 4000 per kg
Special Feature(s) : High yield, tolerant to diseases, High adaptability, High pungency and good colour, Long duration
Profitability : Highly profitable
Other Feature(s) : It has become very popular in Punjab State. A Number of farmers are producing seed of this hybrid or commercial scale. Also highly suitable for dry as well as for paste on oleoresin production. seed is produced by using male sterility. Seed yield is about 95 to 100 kg per ha

Name of the Crop : Brinjal
HYV Name : BH-1
Scientist(s) Involved : SS Bal; ML Chadha; AS Sidhu
Year of Release : 1994
Sowing Time : Sowing of seed- Oct, Nov, Feb, and June Transplanting - Nov, Feb, March, and July
Germination Time : 7-10 days in Summer, 15-20 days in Winter
Flowering Time : August-September
Maturity Time : 52 days
Ripening Time : 20-25 days
Yield per Hectare : 615 qtls
Climate Required : Warm season crop susceptible to severe frost
Soil Type : Light Sandy for early crop while clay loam and silt loam for higher yield
Fertilizer Doses : 125 kg N, 62 kg P₂O₅, 30 kg K₂O hectare
Irrigation Schedule : Immediately after transplanting during summer 4-6 days interval during winter 10-14 days interval
Disease Tolerance : Tolerant to fruit borer
Pest Management : Brinjal pests and symptoms of attack: (i) Jassid (*Amrasca sp*) and white fly (*Bamisia tabaci*) ii) Fruit borer (*Helicoverpa armigera*). The larval stage attacks the fruits and cause holes and rotting Control measures: Spraying of 400 ml of Malathion 50 EC in 80-100 litres of water is required before fruiting. Three sprays at 2 week intervals starting from the initiation of flowers with any of the following insecticides using 100 litres of water per acre are required; i.Thiodan 35 EC (Endosulfan) 800 ml ii.Sevin/Hexavin 50 Wp (Carbaryl) 800 g iii.Sumicidin 20 EC (Fenvalcrate) 100 ml iv. Ripcord 17 EC (Cypermethrin) 200 ml v) Decls 2.8 (Decamethrin) 160 ml
Price of Seed : Rs 3000 per kg

Special Feature(s) : 40 higher yield over check early in maturity 7-10 days over check
Profitability : Varies from season to season due to market fluctuations
Other Feature(s) : Manual hybridization is an economical exercise due to large number of seeds per pollination. 100-125 kg of seed may be obtained per acre

Name of the Crop : Brinjal
HYV Name : BH-2
Scientist(s) Involved : AS Sidhu; SS Bal; ML Chadha
Year of Release : 1994
Sowing Time : Sowing of seed - Oct, Nov, Feb, and June transplanting - Nov, Feb, March and July
Germination Time : 7-10 days in summer, 15-20 days in winter
Flowering Time : August-September
Maturity Time : 62 days
Ripening Time : 20-25 days
Yield per Hectare : 585 qtls
Climate Required : Warm season crop susceptible to severe frost
Soil Type : Light sandy for early crop while clay loam and silt loam for higher yield
Fertilizer Doses : 125 kg N, 62 kg P/2 O/5, 30 kg K/2 P hectare
Irrigation Schedule : Immediately after transplanting during summer 4-6 days interval during winter 10-14 days interval
Disease Tolerance : Tolerant to fruit borer
Price of Seed : Rs 3000/-
Special Feature(s) : 35 higher yield than other variety very dark purple colour and large size fruit
Profitability : Variable due to market fluctuations
Other Feature(s) : Mechanical hybridization is economical exercise due large number of seeds/per pollination yield per 100-125 kg/acre

Name of the Crop : Tomato
HYV Name : TH-2312
Scientist(s) Involved : KS Nandpur; Surjan Singh; DS Cheema; R R Mahajan; AS Sidhu
Year of Release : 1991
Sowing Time : Sowing Mid-Oct, Transplanting-End Nov
Germination Time : 10-12 days
Flowering Time : March-April
Maturity Time : 180 days
Ripening Time : 30-40 days
Yield per Hectare : 660 QTLS per ha
Climate Required : Min 6 ° C - 25 ° C Max 15 ° - 40 ° C
Soil Type : Loamy clay-sandy loam
Fertilizer Doses : 55 kg N, 25 kg P/2 O/5, 25 kg K/2 O

Irrigation Schedule : Winter 7-10 days Summer 4-7 days depending on soil type
Disease Tolerance : Resistant to root-knot nematode (*Meloidogyne incognita*)
Price of Seed : Rs 16,000/-
Special Feature(s) : It has the ability to set fruit under high temperature conditions
Profitability : It is variable due to market fluctuation

Name of the Crop : Tomato
HYV Name : TH-802
Scientist(s) Involved : Singh; DS Cheema; R Mahajan
Year of Release : 1996
Sowing Time : Sowing- mid Oct, Transplanting- end Nov
Germination Time : 10-12 days
Flowering Time : March-April
Maturity Time : 170 days
Ripening Time : 30-40 days
Yield per Hectare : 650 qtls
Climate Required : Min 6 ° C - 25 ° Max 15 ° C - 40 ° C
Soil Type : Loamy clay, sandy loam
Fertilizer Doses : 55 kg N, 25 kg P₂O₅, 25 kg K₂ O
Irrigation Schedule : Winter 7-10 days Summer 4-7 days, depending on soil type
Disease Tolerance : Resistant to Root knot nematodes (*Meloidogyne incognita*)
Price of Seed : Rs 16,000/-
Profitability : Has been recently released in Nov 1996

**Sugarcane Breeding Institute (SBI)
and Sugarcane Research Station (SRS)
Tamil Nadu Agricultural University (TNAU)
Coimbatore-7 Cuddalore, India**

Name of the Crop : Sugarcane
HYV Name : COC 671 (Co 63 X Co 775)
Year of Release : 1975
Sowing Time : December-January, early
Germination Time : 30-35 days
Flowering Time : October-November
Maturity Time : 10 Months
Ripening Time : 60 days
Yield per Hectare : 123.5 tons per ha
Climate Required : High temperature, bright sunshine-during tillering and growth. Low temperature and dry weather during maturity
Soil Type : Sandy Loam, Clayey Loam
Fertilizer Doses : 275 kg N, 65 kg P₂O₅, 115 kg K₂O per ha

Irrigation Schedule : Light irrigation 3 days after planting Germination (35 days) once in 7 days, Tillering (36-100 days) once in 10 days, Growth (101-270 days) once in 7 days maturity (271-365 days) once in 15 days

Disease Tolerance : Susceptible to red rot and smut

Pest Management : Moderately susceptible to ESB and Borers

Price of Seed : Rs 613 per ton

Special Feature(s) : High quality and high yielder CCS = 13.0, CCS=16.0 t per ha

Profitability : (Rs 10,000/acre) Rs 25,000 per ha

Other Feature(s) : Suitable for early crushing, good ratooner

Name of the Crop : Sugarcane

HYV Name : COC 771 (Co 419 X Co 658)

Year of Release : 1977

Sowing Time : December-January, early

Germination Time : 30-35 days

Flowering Time : October-November

Maturity Time : 10-12 months

Ripening Time : 60 days

Yield per Hectare : 130 tons per ha

Climate Required : High temperature, bright sunshine -tillering and growth phase. Low temperature, dry weather-ripening

Soil Type : Sandy Loam, Clayey Loam

Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha

Irrigation Schedule : Germination (35 days) once in 7d, Tillering (36-100d) once in 10d, Growth (101-270d) once in 7d, Maturity (271-365d) once in 15d

Disease Tolerance : Moderately tolerant to red rot, moderately resistant to smut

Pest Management : Moderately susceptible to early shoot borer

Price of Seed : Rs 613 per ton

Special Feature(s) : Suitable for tannery effluent area, saline and sodic soils, CCS=12.5 CCS=16.3 t per ha

Profitability : Rs 25,000 per ha

Other Feature(s) : Suitable for early crushing, non lodging, non arrowing, good ratooner

Name of the Crop : Sugarcane

HYV Name : COC 772 (Co 740 x Co 658)

Year of Release : 1977

Sowing Time : December-January, Early

Germination Time : 30-35 days

Flowering Time : October-November

Maturity Time : 10-12 months

Ripening Time : 60 days

Yield per Hectare : 133.0 tons per ha
Climate Required : High temperature, bright sunshine-tillering and growth phase. Low temperature, dry weather-ripening
Soil Type : Sandy loam, Clayey loam
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) once in 7d, Tillering (36-100d) once in 10d, Growth (101-270d) once in 7d, Maturity (271-365d) once in 15 days
Disease Tolerance : Moderately tolerant to red rot, ms to smut
Pest Management : Ms to ESB
Price of Seed : Rs 613 per ton
Special Feature(s) : Fertilizer responsive, High yielding, high quality, non-lodging, non arrowing, good ratooner
Profitability : Rs 25,000 per ha
Other Feature(s) : CCS - 13.0 CCS=17.39 t per ha

Name of the Crop : Sugarcane
HYV Name : COC 8001 (POJ 2878 x Co 658)
Year of Release : 1980
Sowing Time : December-January, Early
Germination Time : 35 days
Flowering Time : October-November
Maturity Time : 10-12 months
Ripening Time : 60 days
Yield per Hectare : 102.9 tons per ha
Climate Required : High temperature, bright sunshine-tillering and growth phase. Low temperature, dry weather - ripening
Soil Type : Sandy loam, Clayey loam
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) once in 7 days, tillering (36-100d) once in 10d, growth (101-270d) once in 7d, maturity (271-365d) once in 15 days
Disease Tolerance : MS to red rot, MR to smut, MR to self rot
Pest Management : MR to Borers
Price of Seed : Rs 613 per ton
Special Feature(s) : Drought tolerant, Non-lodging
Profitability : Rs 10,000/ac, Rs 25,000 per ha
Other Feature(s) : High tillering, easy to trash, good ratooner CCS=12.9 CCS=13.3 t per ha

Name of the Crop : Sugarcane
HYV Name : COC 85061 (Co 6304 GC)
Year of Release : 1985
Sowing Time : December-January, Early
Germination Time : 35 days

Flowering Time : October-November
Maturity Time : 10-12 months
Ripening Time : 60 days
Yield per Hectare : 135.4 tons per ha
Climate Required : High temperature, bright sunshine-tillering and growth. Low temperature, dry weather-ripening
Soil Type : Sandy loam, Clayey loam
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) once in 7d, tillering (36-100d) once in 10d, Growth (101-270d) once in 7d, Maturity (271-365d) once in 15d
Disease Tolerance : MR to red rot and smut
Pest Management : MR to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : High germination, vigorous growing, drought tolerant, suitable for all soil type
Profitability : Rs 25,000 per ha
Other Feature(s) : CCS=12 CCS=16.8 t per ha, Non-lodging non-arrowing, suitable for early and mid-late, good ratooner moderately fibre content (13)

Name of the Crop : Sugarcane
HYV Name : COC 86062 (MS 68/47 GC)
Year of Release : 1986
Sowing Time : December-January, early
Germination Time : 35 days
Flowering Time : October-November
Maturity Time : 10-12 months
Ripening Time : 60 days
Yield per Hectare : 128.5 tons per ha
Climate Required : High temperature, bright sunshine - tillering and growth. Low temperature, dry weather - ripening
Soil Type : Sandy loam, Clayey loam
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35 days) once in 7d, tillering (36-100d) once in 10d, Growth (101-270d) once in 7d, Maturity (271-365d) once in 15 days
Disease Tolerance : HS to red rot
Pest Management : MS to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : Long internode, high yielder and high quality, suitable for jaggery, tall cane, vigorous growing
Profitability : Rs 25,000 per ha
Other Feature(s) : CCS=13.0, CCS=16.7 t per ha, Good ratooner

Name of the Crop : Sugarcane
HYV Name : COC 90063 (Co 6304 x Coc 671)
Year of Release : 1990
Sowing Time : December-January, Early
Germination Time : 35 days
Flowering Time : October-November
Maturity Time : 10-12 months
Ripening Time : 60 days
Yield per Hectare : 128 tons per ha
Climate Required : High temperature, bright sunshine - tillering and growth. Low temperature, dry weather - ripening
Soil Type : Sandy loam, clayey loam
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) once in 7 days Tillering (36-100d) one in 10d, Growth (101-270d) once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : MR to red rot and smut
Pest Management : MR to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : Solid erect cane, non-lodging, non- arrowing
Profitability : Rs 25,000 per ha
Other Feature(s) : CCS=12.6 CCS= 16.2 t per ha. Good ratooner

Name of the Crop : Sugarcane
HYV Name : CO 8021 (Co 740 X CO 6806)
Year of Release : 1990
Sowing Time : December-January, Early
Germination Time : 35 days
Flowering Time : October-November
Maturity Time : 10-12 months
Ripening Time : 60 days
Yield per Hectare : 130.0 tons per ha
Climate Required : High temperature, bright sunshine - tillering and growth, Low temperature, dry weather - ripening
Soil Type : Suitable for all soils
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : MR to Red rot, Smut wilt
Pest Management : Moderately Susceptible to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : Suited for early and mid late, high yielder
Profitability : Rs 25,000 per ha
Other Feature(s) : Susceptible to drought, good tillering, CCS=11.8, CCS=15.5 t per ha

Name of the Crop : Sugarcane
HYV Name : COC 91061 (COC 779 GC)
Year of Release : 1991
Sowing Time : December-January, Early
Germination Time : 35 days
Flowering Time : October-November
Maturity Time : 10-12 months
Ripening Time : 60 days
Yield per Hectare : 131.0 tons per ha
Climate Required : High temperature, bright sunshine for tillering and growth; low temperature and dry weather for ripening
Soil Type : Suitable for all soils
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : MR to Red rot, Smut
Pest Management : MS to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : It is also suitable for jaggery making good tillering, non-flowering
Profitability : Rs 25,000 per ha
Other Feature(s) : CCS=12.8, CCS= 16.8 t per ha good ratooner

Name of the Crop : Sugarcane
HYV Name : COC 92061 (CO 7314 GC)
Year of Release : 1992
Sowing Time : December-January, Early
Germination Time : 35 days
Flowering Time : October-November
Maturity Time : 8-12 months
Ripening Time : 60 days
Yield per Hectare : 133.5 tons per ha
Climate Required : High temperature, bright sunshine - tillering and growth, Low temperature, dry weather - ripening
Soil Type : Suitable for all soils
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, Tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : HS to Red rot, MR to Smut
Pest Management : MS to borers
Price of Seed : Rs 613 per ton

Special Feature(s) : High quality and high yielder, suited for jaggery making, short duration cane
Profitability : Rs 25,000 t per ha
Other Feature(s) : CCS=13.2, CCS=17.5 t per ha, non-lodging, non-arrowing

Name of the Crop : Sugarcane
HYV Name : Co 6304 (Co 419 X Co 605)
Year of Release : 1970
Sowing Time : February-March, Mid-Season
Germination Time : 35 days
Flowering Time : November-December
Maturity Time : 1 year
Ripening Time : 60 days
Yield per Hectare : 135 tons per ha
Climate Required : High temperature, bright sunshine for tillering and growth; low temperature and dry weather for ripening
Soil Type : Suitable for all soils
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, Tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : HS to Red rot, MR to Smut
Pest Management : MS to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : Drought tolerant, Good ratooner, High yielder
Profitability : Rs 25,000 per ha
Other Feature(s) : CCS=11.5, CCS=15.5 t per ha, Non-Arrowing

Name of the Crop : Sugarcane
HYV Name : COC 774 (CCO 785 X Co 658)
Year of Release : 1977
Sowing Time : February-March, Mid-Season
Germination Time : 35 days
Flowering Time : November-December
Maturity Time : 12-13 months
Ripening Time : 60 days
Yield per Hectare : 129.8 tons per ha
Climate Required : High temperature, Bright Sunshine - tillering and growth; Low temperature, dry weather - ripening
Soil Type : Sandy loam, Clayey loam, suitable for all soils
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, Tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days

Disease Tolerance : MR to Red rot, Smut
Pest Management : MS to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : High yielding, more suitable for heavy and medium soils
Profitability : Rs 25,000 per ha
Other Feature(s) : Flowering in sparse, long internode, CCS=11.97 and CCS=15.5 t per ha

Name of the Crop : Sugarcane
HYV Name : COC 775 (Co658 X Co 1305)
Year of Release : 1977
Sowing Time : February-March, Mid -Season
Germination Time : 35 days
Flowering Time : November-December
Maturity Time : 12-13 months
Ripening Time : 60 days
Yield per Hectare : 112.5 tons per ha
Climate Required : High temperature, bright sunshine - tillering and growth, Low temperature, dry weather - ripening
Soil Type : Sandy loam, clayey loam, suitable for all soils
Fertilizer Doses : 275 kg N, 65 kg P₂O₅, 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, Tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : MR to Red rot, Smut
Pest Management : MS to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : High yielder of quality cane, suitable for mid crushing, withstands drought, non-lodging'
Profitability : Rs 25,000 per ha
Other Feature(s) : CCS=12.1, CCS=14.5 t per ha, Good ratooner

Name of the Crop : Sugarcane
HYV Name : CO 8362 (Co 6304 X COC 671)
Year of Release : 1992
Sowing Time : February-March, Mid -Season
Germination Time : 35 days
Flowering Time : November-December
Maturity Time : 11-12 months
Ripening Time : 60 days
Yield per Hectare : 129.4 tons
Climate Required : High temperature, bright sunshine, rainfall, high humidity tillering and growth; Low temperature, dry weather - ripening

Soil Type : Sandy loam, Clayey loam
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, Tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : MS to Red rot
Pest Management : MS to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : High cane yielder and high juice quality
Profitability : Rs 25,000 per ha
Other Feature(s) : CCS=12.9, CCS=16.6 t per ha

Name of the Crop : Sugarcane
HYV Name : COO 777 (Co 419 x Co 853)
Year of Release : 1977
Sowing Time : April-May, Late season
Germination Time : 35 days
Flowering Time : November-January
Maturity Time : 12-13 months
Ripening Time : 60 days
Yield per Hectare : 131.3 tons per ha
Climate Required : High temperature, humidity Sunshine, Rainfall - Tillering and Growth, Low temperature, Dry Weather - Ripening
Soil Type : Sandy loam, Clayey loam, Suitable for all soils
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, Tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : MR to Red rot, Smut
Pest Management : MS to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : High yielding cane with moderate quality suitable for late crush. Good in germination and tillering
Profitability : Rs 25,000 per ha
Other Feature(s) : CCS=11.8, CCS=15.5 t per ha, Good ratooner

Name of the Crop : Sugarcane
HYV Name : COC 778 (Co 419 x Co 853)
Year of Release : 1977
Sowing Time : April-May, Late Season
Germination Time : 35 days
Flowering Time : November-December
Maturity Time : 12-13 months

Ripening Time : 60 days
Yield per Hectare : 135.5 tons per ha
Climate Required : High temperature, bright sunshine, rainfall, high humidity for tillering and growth; and low temperature, dry weather for good maturity
Soil Type : Sandy loam, clayey loam
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, Tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : MR to Smut and Red rot
Pest Management : MS to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : Suitable for late crush, High yielding cane with moderate quality
Profitability : Rs 25,000 per ha
Other Feature(s) : Good in germination and tillering, Good ratooner, CCS=11.0, CCS=15.0 t per ha

Name of the Crop : Sugarcane
HYV Name : COC 779 (Co 419 x Co 853)
Year of Release : 1977
Sowing Time : April-May, Late Season
Germination Time : 35 days
Flowering Time : November-December
Maturity Time : 12-13 months
Ripening Time : 60 days
Yield per Hectare : 134.6 tons
Climate Required : High temperature, bright sunshine, rainfall, humidity - tillering and growth; Low temperature, dry weather - ripening
Soil Type : Sandy loam, clayey loam
Fertilizer Doses : 275 kg N, 65 kg P₂O₅ , 115 kg K₂O per ha
Irrigation Schedule : Germination (35d) - once in 7 days, Tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance : MR to Red rot, Smut
Pest Management : MS to borers
Price of Seed : Rs 613 per ton
Special Feature(s) : High yielding cane with moderate quality, suitable for late crush.
Profitability : Rs 25,000 per ha
Other Feature(s) : Good in germination and tillering, Good ratooner, CCS=11.8, CCS=15.8 tons per ha

Name of the Crop : Sugarcane
HYV Name : COC 8201 (Co 740 x Co 62174) Common Name "Adiyaman"
Year of Release : 1982

Sowing Time	: April-May, Late season
Germination Time	: 35 days
Flowering Time	: November-December
Maturity Time	: 12-13 months
Ripening Time	: 60 days
Yield per Hectare	: 133.6 tons
Climate Required	: High temperature, bright sunshine, rainfall, high humidity for tillering and growth; Low temperature, dry weather for ripening
Soil Type	: Sandy loam, Clayey loam
Fertilizer Doses	: 275 kg N, 65 kg P ₂ O ₅ , 115 kg K ₂ O per ha
Irrigation Schedule	: Germination (35d) - once in 7 days, Tillering (36-100d) - once in 10 days, Growth (101-270d) - once in 7 days, Maturity (271-365d) once in 15 days
Disease Tolerance	: MR to Red rot
Pest Management	: MS to borers
Price of Seed	: Rs 613 per ton
Special Feature(s)	: Suitable for mid and late season high yielder and quality cane, suitable for jaggery making
Profitability	: Rs 25,000 per ha
Other Feature(s)	: CCS=11.8, CCS=15.8 t per ha, Good ratooner

Vegetable Research Project

Gujarat Agricultural University, Anand Campus
Anand-388110, Dist. Kheda, Gujarat, India
Phone: 77171 (O), 77072 (R), Fax: 02748-77002/77009

Name of the Crop	: Brinjal (<i>Solanum melongena</i>)
HYV Name	: Gujarat Brinjal Hybrid-1 (GBH-1)
Scientist(s) Involved	: SA Patel; MN Patel, MM Bhatt; PR Godhani
Year of Release	: 1993
Sowing Time	: Kharif: June-July; Summer: Feb-March
Germination Time	: 6-7 days; age of 25 days seedling to be transplanted
Flowering Time	: 45-65 days onwards and continues
Maturity Time	: 240 days (total crop duration)
Ripening Time	: 10-12 days (22 to 25 picking at an interval of 3 days)
Yield per Hectare	: 601 qtls
Climate Required	: 25° - 31° C; hot and humid;
Soil Type	: Sandy loam to medium black, well drained
Fertilizer Doses	: 100 kg N, 50 kg P ₂ O ₅ , 50 kg K ₂ O per ha
Irrigation Schedule	: Kharif: as and when require; Summer: 8-10 days
Disease Tolerance	: Tolerant to little leaf disease

Pest Management : i.Jassids, white fly; ii.Shoot and fruit borer can be controlled by spraying of i.Monochrotophos-0.04% and ii.Endosulphan - 0.05%

Price of Seed : Rs 2000 per kg (approx)

Special Feature(s) : Better biochemical properties and high yielding potential (about 12%.) higher over local variety Doli-5

Profitability : Rs 25000-30000 per hectare

Name of the Crop : Okra (*Abelmoschus esculantus*)

HYV Name : Gujarat Okra Hybrid-1 (GOH-1)

Scientist(s) Involved : SA Patel; PR Godhani; SN Badaya and associates

Year of Release : 1993

Sowing Time : Kharif : June-July; Summer: Feb-March

Germination Time : Within one week after sowing

Flowering Time : 45-50 days onwards and continues

Maturity Time : 120 days (total crop duration)

Ripening Time : Flowering to fruiting: 5 days, (25-30 picking at interval of alternate days)

Yield per Hectare : 12-15 tons

Climate Required : 25° - 31° C; hot and humid

Soil Type : Sandy loam to medium black; well drained)

Fertilizer Doses : 60kg N, 30 kg P₂O₅ per ha

Irrigation Schedule : Kharif: as and when required; Summer: every 10 days

Disease Tolerance : Resistant to YVMV

Pest Management : Aphids, jassids and white flies can be controlled by spraying of Monochrotophos 0.04% and fruit borer by Endosulphan 0.05%

Price of Seed : Rs 250 per kg

Special Feature(s) : High yielding potential (32%), more number of pods (15-18%), pod length and girth

Profitability : Rs 25000-30000 per hectare

Vegetable Research Station

CSA University of Agricultural and Technology
Kalyanpur, Kanpur, Uttar Pradesh, India

Name of the Crop : Brinjal

HYV Name : Azad Hybrid (Round)

Scientist(s) Involved : ND Singh; BP Srivastava; JP Srivastava

Year of Release : 1991

Sowing Time : June-July

Germination Time : Nursery 25-30 days

Flowering Time : 40-45 days

Maturity Time : 70-75 days, Edible maturity from transplanting

Ripening Time	: 45-50 days from edible maturity
Yield per Hectare	: 450 qtls average, 800 qtls maximum
Climate Required	: 32-35° C for growth of plant followed by winter for heavy fruiting
Soil Type	: Loam
Fertilizer Doses	: Linear response up to 120 Kg N, 50 kg P ₂ O ₅ , 50 kg K ₂ O per ha
Irrigation Schedule	: As and when required
Disease Tolerance	: Moderately resistant to little leaf and blight
Pest Management	: Less susceptible to shoot and fruit borer
Price of Seed	: Rs800 per Kg
Special Feature(s)	: Compact, well branched, round purple calyx green, high fruit rate (10-12 fruits/ plant), mean fruit weight: 190 - 200g, fruiting span: 125-130 days, and highly responsive to fruit plucking
Profitability	: Capable of giving high returns in economic terms
Other Feature(s)	: It has shown better yield performance than most of the varieties. Fruits are attractive, with firm flesh, smooth skin and have better shelf life

Vivekananda Parvatiya Krishi Anusandhan Sansthan

Almora 263601, Uttar Pradesh, India

Phone: 30060, Fax: 31539

Email: vpkas@x400.necgw.nic.in

Name of the Crop	: Maize (<i>Zea mays</i> L.)
HYV Name	: VL Makka 42
Scientist(s) Involved	: VP Mani; Sri HC Joshi
Year of Release	: 1972 and 1988
Sowing Time	: Mid-June in Kharif season (mid hills)
Germination Time	: 3-5 days (mid hills)
Flowering Time	: 47-49 days (50% silking)
Maturity Time	: 80-85 days (in mid-hills)
Ripening Time	: 35-40 days, 50% silking to seed ripening
Yield per Hectare	: 40 qtls per ha (rainfed)
Climate Required	: Himalayan region and peninsular India
Fertilizer Doses	: 80 kg N, 60 kg P ₂ O ₅ and 40 kg K ₂ O per ha
Disease Tolerance	: Tolerant to leaf blight (<i>H turcicum</i>) and stem borer
Price of Seed	: Rs 15.50 per kg
Special Feature(s)	: Extra-early yellow flint double cross hybrid

Name of the Crop	: Onion (<i>Alium cepa</i> L.)
HYV Name	: VL Piaz 67
Year of Release	: 1973

Sowing Time : November/Rabi season
Flowering Time : 150-160 days (from bulb planting to flowering)
Maturity Time : 150-160 days (Transplanting to bulb lifting)
Yield per Hectare : 550-1000 qtls per ha
Climate Required : UP hill and plain regions (rabi season)
Soil Type : Loam and sandy loam
Fertilizer Doses : 100 kg N, 50 kg P₂O₅, 100 kg K₂O per ha
Irrigation Schedule : 2 or 3 time
Disease Tolerance : Tolerant to purple blotch disease
Price of Seed : Rs 213 per kg
Special Feature(s) : Red round shape, tight skin, average weight of bulb is 80-150 gm, very good keeping quality

Name of the Crop : Maize (*Zea mays* L.)
HYV Name : Him-129 (Himalayan Hybrid Makka 129)
Scientist(s) Involved : VP Mani, Sri KS Koranga, SK Pant, and associates
Year of Release : 1997
Sowing Time : June-July/Kharif season
Germination Time : 3-5 days in Kharif season
Flowering Time : 49-51 days, 50% silking mid hill in Kharif season
Maturity Time : 85-90 days
Yield per Hectare : 40-55 qtls per ha
Climate Required : Himalayan region, stages of Rajasthan, Madhya Pradesh and Gujrat
Soil Type : Sandy loam
Fertilizer Doses : 80 kg N, 60 kg P₂O₅ and 40 kg K₂O per ha
Disease Tolerance : Tolerant to leaf blight, Br stripe downy mildew
Price of Seed : Rs 15.50 per kg
Special Feature(s) : Very-early maturing, yellow flint double top cross hybrid

Agricultural Research Institute
 Office of the Wheat Botanist, Sariab Quetta
 Balochistan, Pakistan

Name of the Crop : Wheat
HYV Name : Zarghoon-79; Zamindar-80; Zardana-89
Scientist(s) Involved : Sher Muhammad; Abdul Salam; and Muhammad Iqbal
Year of Release : 1979; 1980; 1992
Sowing Time : Uplands: 15th October to 31st December; Lowlands: 1st November to 31st December
Germination Time : Uplands: 7 to 9 days; Lowlands: 5 to 7 days
Ripening Time : 170-210 days

Maturity Time	: Uplands: Last week of June to 1st week of July; Lowlands: 2nd week of April to 3rd week of April
Yield per Hectare	: Max 7 tons, Average 2.7 tons
Climate Required	: Cool humid 20° C at grain development
Soil Type	: Silty loam to silty clay loam
Fertilizer Doses	: 120 kg N, 90 kg P ₂ O ₅ , 60 kg K ₂ O per ha
Irrigation Schedule	: 4-6 (20-25 days after germination, tillering, heading and grain development stages)
Disease Tolerance	: Zarghon-79 is resistant to all the three rust diseases; Zamindar-80 is Moderate resistant to leaf and yellow rust; and Zardana-89 is resistant to leaf rust and moderate resistant to yellow rust
Pest Management	: Tolerant to drought, frost, birds damage, lodging and shattering losses.
Price of Seed	: Rs 10 per kg (certified seed)
Special Feature(s)	: The varieties have general adaptability under different climatic conditions of the province with also having good baking quality
Profitability	: These varieties played an important role in increase of yield per unit area from 1.2 tons per ha to 2.5 tons per ha on an average basis in the province.
Other Feature(s)	: These varieties have shown good response to heavy doze of fertilizer.

Agricultural Research Station

Mingora Swat, NWFP

Peshawar, Pakistan

Name of the Crop	: Sunflower
HYV Name	: Rahim - 96
Scientist(s) Involved	: Mohammad Rahim
Year of Release	: 1996
Sowing Time	: Autumn; Spring
Germination Time	: 7 days
Flowering Time	: 55-75
Maturity Time	: Autumn = 90-100 days spring 105-120 days
Ripening Time	: One month
Yield per Hectare	: 3.5 tons
Soil Type	: All Types
Fertilizer Doses	: 100:50:25
Irrigation Schedule	: 4-6 times/ season
Disease Tolerance	: All disease and pest
Pest Management	: Through sprays
Price of Seed	: Rs 300/kg
Special Feature(s)	: Profusely branched from mid to top, comparative with longer heads thus other branched type restorers
Profitability	: Two crops/year, low duration and more economical

Agriculture Research Institute
Sariab Quetta, Balochistan, Pakistan

Name of the Crop	: Wheat
HYV Name	: Sariab-92
Scientist(s) Involved	: MM Saleem; Manghal Saleem Sheikh
Year of Release	: 1992
Sowing Time	: 20th September to 15th November under; Sailabacondition January-February under rainfed conditions in uplands
Germination Time	: Under upland conditions 7-10 days dependson (temperature)
Flowering Time	: May
Maturity Time	: 15th of June up to 1st week of July
Ripening Time	: 60 days
Yield per Hectare	: 4 tons; under rainfed 1800 kg
Climate Required	: Cool 15 to 20 ° C
Soil Type	: Loamy soils
Fertilizer Doses	: 46:46:00
Irrigation Schedule	: Rainfed
Disease Tolerance	: Highly resistant to drought, frosts wheat diseases
Price of Seed	: Rs 15/ kg
Special Feature(s)	: For the first time in the history of Balochistan this highly drought, Frost and disease resistant variety was evolved which doing very well in sailaba and rainfed areas of Balochistan.
Profitability	: This variety is playing an important role in increasing wheat yield per unit area
Other Feature(s)	: This variety is highly resistant in to drought frost and diseases of wheat it also lodging resistat. The <i>Bhosa</i> is very good, having a fair baking quality.

Cereal Crops Research Institute (CCRI)
NWFP Agricultural University, Peshawar, Pakistan

Name of the Crop	: Maize (<i>Zea mays</i> L)
HYV Name	: Double Cross Hybrid (Quaid) Yellow Parents (AU 239 x AU 82) x (AU 71 x AU 121)
Scientist(s) Involved	: Muhammad Saleem
Year of Release	: 1993
Sowing Time	: Kharif Season; June-July to September-Ocotober
Germination Time	: 4-5 days
Flowering Time	: 47 days to mid-silking
Maturity Time	: 90-95 days

Ripening Time : 45-46 dyas
Yield per Hectare : 7 tons
Soil Type : Loam preferable
Fertilizer Doses : 250 kg N and 50 kg P per ha
Irrigation Schedule : 7 irrigations, 1st irrigation after 2-3 weeks of emergence, 3 irrigations during vegetable stage/3-4 irrigation during flowering and grain filling
Disease Tolerance : Tolerant to *H. maydis* leaf blight
Pest Management : Use granular/WP or EC insecticides for the control of maize stem borer
Price of Seed : Rs 60/kg (from public institutions only)
Special Feature(s) : High yielding and short duration and eisease resistant. Excellent residene stalks for animals
Profitability : Very profitable
Other Feature(s) : Aslo suitable for spring planting

Name of the Crop : Maize (*Zea mays* L)
HYV Name : Three-way Hybrid (Shahbaz) Yellow Parents: (AU 151 x AU 102) x AU 7
Scientist(s) Involved : Muhammad Saleem
Year of Release : 1993
Sowing Time : Spring season/ late February to June
Germination Time : 8-10 days
Flowering Time : 50-55 days
Maturity Time : 95-100 days in spring season
Ripening Time : 45 days
Yield per Hectare : 8 tons
Climate Required : Subtropical low land to 800 masl in spring only
Soil Type : Clay Loam
Fertilizer Doses : 250 kg N and 50 kg P per ha
Irrigation Schedule : 10 irrigations total, 5 irrigations during flowering and grain felling
Disease Tolerance : Tolerant to Leafblight
Pest Management : Control Shoot fly/use EC insecticide spray
Price of Seed : Rs 70/kg (public institutions only)
Special Feature(s) : High yield, disease resistant, and tolerant to stresses
Profitability : Very profitable
Other Feature(s) : Also suitable for Kharif/June-July swoing

Sugarcane Research Station
 Agricultural Research System
 Mardan, Peshawar, Pakistan

Name of the Crop : Sugarcane
HYV Name : Abid - 96

Scientist(s) Involved : Gulzar Ahmad; Imran
Year of Release : 1996
Sowing Time : September to March
Germination Time : 7-10 days
Maturity Time : 300 days
Yield per Hectare : 72.50 tons per ha
Climate Required : About 30 ° C
Soil Type : Clay Loam
Fertilizer Doses : 120;100;50 NPK
Irrigation Schedule : 18-20 imgal
Disease Tolerance : Frost and Diseases
Pest Management : Tolerant
Price of Seed : Rs 1.25/kg
Special Feature(s) : The variety produces white and crystalline gur
Profitability : More profitable then other crop

Sugarcane Research Station
Bannu- NWFP, Peshawar, Pakistan

Name of the Crop : Sugarcane
HYV Name : Bannu-I
Scientist(s) Involved : Gulzar Ahmmad; Imran; Said Rahman
Year of Release : 1996
Sowing Time : September to March
Maturity Time : 300-320 days Mid season
Yield per Hectare : 106 tons per ha
Climate Required : Abore 30 ° C
Soil Type : Clay Loam
Fertilizer Doses : 150-50-50 NPK per ha
Irrigation Schedule : 18-20 Irrigations
Disease Tolerance : Tolerant all discuss and pests
Pest Management : Tolerant
Price of Seed : Rs 50/40 kg or Rs 1.25/kg
Special Feature(s) : The variety is drought tolerant
Profitability : More profitable than any other crop

Division of Vegetables
Horticultural Crops Research and Development Institute
Peradeniya, Sri Lanka

Name of the Crop : Tomato
HYV Name : Vihara
Scientist(s) Involved : KDA Perera; A Palamakumbura; EH Balasubramanium; M Perera; KHS Peiris; SN Jayawardena
Year of Release : 1993
Sowing Time : November/May
Germination Time : 3-4 days
Flowering Time : Dry climatic condition (22-28 ° C)
Maturity Time : 75-95 days
Ripening Time : about 30 days
Yield per Hectare : 40-50 tons
Climate Required : Below 30 ° C
Soil Type : Fertile soil
Fertilizer Doses : Urea 35kg, TSP 275kg, MP 125kg
Irrigation Schedule : Flood irrigation (every five days)
Disease Tolerance : Tolerant to Bacterial wilt
Pest Management : Moderately tolerant to fruit fly
Special Feature(s) : High yield and uniform fruits
Profitability : Additional 30-40% income is expected

Defence Agricultural Research Laboratory
Pithoragarh-262501, Uttar Pradesh,
India

Name of the Crop : Cucumber (*Cucumis sativus* L.)
HYV Name : DARL-1
Scientist(s) Involved : Z Ahmed; V Pandey and N Kumar
Year of Release : 1997
Sowing Time : Feb-March in protected condition; April-June in open condition
Germination Time : 7-8 days
Flowering Time : 45-55 days
Maturity Time : 55-65 days (in mid hills of central Himalayas)
Ripening Time : 10-12 days
Yield per Hectare : 522.5 qtls; 396 qtls
Climate Required : 27-34 ° C
Soil Type : Sandy loam
Fertilizer Doses : 100 kg N, 60 kg P₂O₅ , 60 kg K₂O per ha

Irrigation Schedule : 12-15 (protected condition) in open condition, irrigation varied with rainfall

Disease Tolerance : Susceptible to powdery mildew

Pest Management : (i) Ash dusting and spray of quonodon for Red pumpkin beetle (ii) Spray of Bevistin and Diathane M-45 for powdery mildew

Price of Seed : Rs 3600/- per kg

Special Feature(s) : NA

Profitability : Higher yielding than green long and poinsett

Other Feature(s) : (i) Suitable for hill agriculture (ii) Higher protein percentage (0.99)

Panjabrao Deshmukh Krishi Vidyapeeth
Akola (MS), India

Name of the Crop : Sorghum

HYV Name : CSH-14

Scientist(s) Involved : VB Shekar; RS Wadhokar; SK Jilani, NR Potdukhe; NG Solanke

Year of Release : 1992

Sowing Time : Kharif 3rd week of June to 1st week of July

Germination Time : 4 days

Flowering Time : 55-58 days

Maturity Time : 103-105 days

Ripening Time : 45-48 days

Yield per Hectare : 46-48 qtls per ha and 95-100 qtls per ha

Climate Required : Semi arid

Soil Type : Medium heavy

Fertilizer Doses : 80 kg N, 40 kg P₂O₅ , 40 kg K₂O per ha; 40 N+full dose of P and K at sowing and 40 kg N per ha after 28-30 days

Irrigation Schedule : Rainfed crop but can be applied as and when required

Disease Tolerance : Tolerent to foliar diseases and also to grain mold

Pest Management : 1) Early sowing in 1st week of July avoid shootfly. However, one spraying of Endosulphan 35 EC @ 1.5 ml/lit of water at 7-10 days of sowing is essential to protect the crop from shootfly damage. 2) At 30-40 days one spraying of Endosulphan 35 EC @ 2 ml/lit of water to protect crop stem borer and army worm. 3) At 50-55 days one dusting of Carbaryl 10 to check Army worm hoppers and eared worms

Price of Seed : Rs 60/kg

Special Feature(s) : Early maturity; No discoloration of grain; Higher grain and fodder yield per ha; Fits well in double cropping; Better suited for intercropping; Suitable for ratooning

Profitability : Best Hybrid for rainfed i.e. dryland agriculture. However, irrigation may raise the yield substantially.

Other Feature(s) : Tested all over the locations of world and found more potential under varied climates

Name of the Crop : Sorghum
HYV Name : SPH-388
Scientist(s) Involved : VB Shekar; RS Wadholkar; SK Jilani and associates
Year of Release : 1988
Sowing Time : Kharif 3rd week of June to 1st week of July
Germination Time : 4 days
Flowering Time : 68-72 days
Maturity Time : 115-120 days
Ripening Time : 47-50 days
Yield per Hectare : 45-48 qtls per ha grain; 125-130 qtls per ha
Climate Required : Semi arid
Soil Type : Medium heavy
Fertilizer Doses : 80 kg N, 40 kg P₂O₅ , 40 kg K₂O per ha; 40 N+full dose of P and K at sowing and 40 kg N per ha after 30 days
Irrigation Schedule : Rainfed crop but can be applied as and when required
Disease Tolerance : Tolerent to foliar diseases but sensitive to Ergot disease
Pest Management : 1) Early sowing in 1st week of July avoid shootfly. However, one spraying of Endosulphan 35 EC @ 1.5 ml/lit of water 7-10 days of sowing is essential to protect the crop from shootfly damage. 2) At 30-40 days one spraying of Endosulphan 35 EC @ 2 ml/lit of water to protect crop stem borer and army worm. 3) AT 50-60 days one dusting of Carbaryl 10 to check army worm hoppers and eared worms
Price of Seed : Rs 60/kg
Special Feature(s) : More grain and fodder production potential
Profitability : Potential hybrid of dryland agril.

Name of the Crop : Sunflower (*Helianthus annuus* L.)
HYV Name : PKVSH-27
Scientist(s) Involved : AR Kshirsagar; DG Weginwar; VN Patil
Year of Release : 1996
Sowing Time : Kharif (July), Rabi (October) Summer (February)
Germination Time : 5-6 days after sowing
Flowering Time : 50-52 days for 50 flowering
Maturity Time : 80 to 85 days from sowing
Ripening Time : From flowering to ripening 30-35 days
Yield per Hectare : 13 to 16 tons
Soil Type : Medium black
Fertilizer Doses : 80 kg N, 60 kg P₂O₅ per ha

- Irrigation Schedule** : In rabi: After sowing and 15 to 20 days interval; In sum: Feb. 8-10 days interval, Mar. 6-8 days interval, Apr. and May 4-6 days interval
- Disease Tolerance** : Fairly resistant to *alternaria* and downy mildew
- Pest Management** : Jassids to be managed by spray of monocrotophos 36 EC 700 ml/500 litre of water/hectare
- Price of Seed** : Rs 125/kg certified seed of hybrid
- Special Feature(s)** : Leaf shape is cordate, red pigmentation on both stem and petiole at early stage of flowering. Head inclination - 135 °. Main stem droops with curvature of 20 to 25 total main stem
- Profitability** : Rs 5,000 to Rs 8,000 per ha
- Other Feature(s)** : Early maturing hybrid, most suitable for late kharif season and for sequence and double cropping system

Tamil Nadu Agricultural University
Coimbatore-3, India

- Name of the Crop** : Chilli
- HYV Name** : K.2
- Year of Release** : 1975
- Sowing Time** : January-February; June-September
- Germination Time** : 5-7 days
- Flowering Time** : 35-45 after planting
- Maturity Time** : 210 days
- Ripening Time** : 25-35 days after flowering
- Yield per Hectare** : 1.9 tons of dry fruits
- Climate Required** : Requires warm climate (20-40 ° C)
- Soil Type** : Well drained sandy loam rich in organic matter
- Fertilizer Doses** : 75:35:35 kg of NPK per ha, FYM 25 t per ha
- Irrigation Schedule** : Once in a week after establishment
- Disease Tolerance** : Leaf spot Moncozeb 1 kg powdery mildew-wettable sulphur 1 kg eback and fruit rot mancozeb 1kg
- Pest Management** : Aphids: Methyl dematon (or) 500 ml. Dimethoate: 750 ml per ha Aphids 750 ml per ha (or) Phosalone 1 lit per ha Fruit: Carbaryl borer 50 WP:2.5 kg per ha yellow: Dicofol mite 18 EC:2.5 lit per ha Ethion: 2.lit per ha Root rot nematodes 50 WP Carbofuran 3G 10 g/sq m
- Price of Seed** : Rs 600/-
- Special Feature(s)** : Increased yield of 29 over K1 variety
- Profitability** : 1:2.8 to 3.0 Hybrid derivative of B.70.4 X Sattur Samba
- Other Feature(s)** : Stem is green in color when young and grey on maturity green chillies turn to red on ripening firmly attached calyx compressed base and pointed beak

Directorate of Agriculture Research
Agriculture Research Institute, Tandojam (Sindh), Pakistan

Name of the Crop : Sunflower
HYV Name : C - 206
Scientist(s) Involved : Aijaz Ahmed Shaikh
Year of Release : 1990
Sowing Time : September (Autumn) and January (Spring)
Germination Time : One Week
Flowering Time : 50 days
Maturity Time : 95 days
Ripening Time : 45 days
Yield per Hectare : 2.4 tons
Climate Required : 20 - 25⁰ C
Soil Type : Clay loam
Fertilizer Doses : 112-50-0 NPK kg per ha
Irrigation Schedule : 3-4 irrigations at fortnightly intervals
Disease Tolerance : Head Rot
Pest Management : 2 sprayings at one month interval against sucking pest complex provide effective control
Price of Seed : Rs 16/- per kg
Special Feature(s) : Early maturing, resistant against Biotic and Abiotic stresses
Profitability : 10% more income than existing varieties
Other Feature(s) : Could be used for future breeding strategies to develop new strain of sunflower

Cereal Crops Research Institute (CCRI)
NWPP Agricultural University
Peshawar, Pakistan

Name of the Crop:Maize (Zea mays L)
HYV Name:Double Cross Hybrid (Quaid) yellow Parents
(AU 239x AU 82) x (AU 71 x AU 121)
Scientist(s) Involved : Muhammed Saleem
Year of Release:1993
Sowing Time:Kharif Season-June to July and September to october
Germination Time:4-5 days
Flowering Time:47 days to mid silking
Maturity Time:90-95 days
Ripening Time:45-46 days
Yield per Hectare:7 tons
Soil Type: Preferably loam Soil

Fertiliser Doses :250 N and 50 kg P per ha

Irrigation Schedule:7 irrigation, 1st irrigation after 2-3 weeks of emergence, 3 irrigation during vegetative stage and 3-4 irrigation during flowering and grain filling stage.

Disease management: Tolerent to H. maydis leaf blight

Pest Management: Granular/WP or EC insecticide are used for controlling of maize stem borer

Price of Seed:Rs 60 per kg (for public institution only)

Special Feature(s) : The variety is high yielding and short duration and disease resistant. It produces excellent uality of residue stalks for farm animals

Profitability: Very profitable

Other features(s):Also suitable for spring planting

Name of the Crop:Maize (Zea mays L)

HYV Name:Three-way Hybrid (Shahbaz) Yellow Parents
(AU 151x AU 102) x AU 7

Scientist(s) Involved : Muhammed Saleem

Year of Release:1993

Sowing TimeSpring Season-late February to June

Germination Time:8-10 days

Flowering Time:50-55 days

Maturity Time:95-100 days

Ripening Time:45 days

Yield per Hectare:8 tons

Climate Required :Subtropical climate

Soil Type: Silty loam

Fertiliser Doses :250 N and 50 kg P per ha

Irrigation Schedule:Total 10 irrigation, 5 irrigation during flowering and grain filling.

Disease management: Tolerent to leaf blight

Pest Management: r EC insecticide sppray is required to control shoot fly

Price of Seed: Rs 70 per kg (for public institution only)

Special Feature(s): High yielding, disease resistant and tolerant to stresses.

Profitability: Very profitable

Other features(s): Also suitable for Kharif (June-July) sowing

Sugarcane Research Station

Agricultural Research System

Mardan, Peshawar, Pakistan

Name of the Crop: Sugarcane

HYV Name: Abid-96

Scientist(s) Involved: Gulzar Ahamed :Imran
Year of Release: 1996
Sowing Time: Kharif September to March
Germination Time: 7-10 days
Maturity Time: 300 days
Yield per Hectare: 72.50 tons
Climate Required: Above 30 C
Soil Type: Clay loam
Fertiliser Doses: 120 kg N, 100 kg P and 50 kg K per ha
Irrigation Schedule: 18-20 irrigation
Disease management: Frost and disease tolerant
Price of Seed: Rs 1.25 per kg
Special Feature(s): The variety produces white and crystalline gur, which is very popular
Profitability: More profitable than other crop

Sugarcane Research Station
Bannu, NWFP, Peshawar, Pakistan

Name of the Crop: Sugarcane
HYV Name: Bannu-1
Scientist(s) Involved: Gulzar Ahamed ;Imran; Said Rahman
Year of Release: 1996
Maturity Time: 300-320 days
Yield per Hectare: 106 tons
Climate Required: Above 30 C
Soil Type: Clay loam
Fertiliser Doses: 150 kg N, 50 kg P and 50 kg K per ha
Irrigation Schedule: 18-20 irrigation
Disease management: Tolerant to all major diseases and pests
Price of Seed: Rs 1.25 per kg
Special Feature(s): The variety is draught tolerant
Profitability: More profitable than other crop

Division of Vegetables
Horticultural Crops Research and Development Institute (HORDI)
PO Box 11.Gannoruwa, Peradeniya, Sri Lanka

Name of the Crop: Tomato
HYV Name: Vihara

Scientist(s) Involved : KDA Perera ;A Palamakumbura : EH Balasubramanium and associates

Year of Release:1993

Sowing Time:November-Mayr

Germination Time:3-4 days

Flowering Time:February-July

Maturity Time:75-95 days

Ripening Time:about 30 days

Yield per Hectare:40-50 tons

Climate Required :Below30 C

Soil Type: Preferably fertile Soil

Fertiliser Doses :Urea 35 kg, TSP 275 kg, MP 125 kg per kg

Irrigation Schedule:Flood irrigation at every five days or sprinkler irrigation at every two days

Disease management: Tolerent to bacterial wilt

Pest Management: Moderately tolerant to fruitfly

Special Feature(s) High yielding and uniform fruit size

Profitability: Due to high yield, additional 30-40 % income is expected