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SAARC AGRINEWS

Promotion of Agricultural Research and Development in South Asia

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Highlights

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Climate change and rising population create challenges that only GM can meet

Genetically Modified (GM) products are developed through gene technology that is of two types one is involves genetic modification and another doesn't. Though bio-technology has existed for a longtime, it now has tools to use living organisms to create new products. Further, genetic modification is also of two types. The modification that involves incorporation or deletion of genes to change or add new traits, and the modification that uses material from other species (transgenics). Bt-brinjal-like Bt-cotton-has a gene from soil bacteria, which provides pesticide resistance and in turn, reduces cost, saves the fruit from damage, leads to higher output and reduces environmental pollution. Reduction in the use of chemical pesticides also reduces the damage to human health due to lower presence of pesticide residue in the edible part.

India has passed through along and passionate debate on clearance to Bt-brinjal for cultivation-the first GM food crop in the country. As the public opinion that came forward was loaded against GM food, the government put a moratorium last February on its release for commercial cultivation and decided to gather some more information concerning the safety aspects. Six science academies of the country, that are expected to know much better than a common man about safety and benefits of GM brinjal, were given the task of assessing Bt-brinjal and have declared it to be safe. As the debate on GM crops in general and on brinjal in particular has created a lot of anxiety among the public, there is a need to provide credible information about various aspects of GM crops and products.

The tools for genetic modification are getting more powerful to increase the range and reach of this technology. Things like dealing with climate change by transferring a gene from plant that grows at high temperature under arid environment to a plant that requires moderate temperature and high water seem possible through genetic modification. Indeed, these would be great achievements when they occur. However, along with hope, GM products carry risks. The potential of GM technology to open myriad of options and opportunities for creating newer products looks scary as one thinks of some strange genetic manipulations. There are also fears about unknown consequences of this adventure if they are not effectively regulated countries/groups consider the threats from GM products to be very high and thus totally rejects them. Critics of GM crops raise environmental, food safety and ethical concerns. On the other hand, a large number of responsible researchers assert that risks associated with GM crops are often overblown by those who do not have adequate understanding of these crops, or have a bias against them. The scientific world sees a great potential in GM products increasing productivity and production, quality improvement, disease resistance, tolerance to

(detailed on page 8)

Sustainable use of water resources in South Asia

One Consultation Meeting of SAARC-AusAid project on **"Developing capacity in cropping systems modelling to promote food security and the sustainable use of water resources in South Asia"** was held on 20 August 2010 at SAARC Agriculture Centre (SAC) conference room organized by SAC. Renowned Scientists on Natural Resources Management from SAARC member states took part in the meeting.

This project originated from an initiative by the Australian Government to support the SAARC and funded by AusAid and managed by ACIAR. A project concept note was prepared jointly by AusAid, ACIAR and CSIRO.

The objective of the project to improve water productivity in rain-fed and irrigated smallholder farming systems in South Asia to enhance agricultural production and food security.

During the meeting the scientists revisited the concept note of the proposed project proposal. Dr. Christian Roth, Senior Principal Research Scientist and International Projects Manager presented project.

The meeting highlighted that one of the major emerging threats to food security in South Asia in the decrease in or lack or water available for agriculture and need for improved water productivity in both rainfed and irrigated agriculture and also provided input to make improvement of the project proposal.

Dr. Md. Rafiqul Islam Mondal, Director, Professionals and Technical Officers of the Centre also participated in the meeting.

ADB-SAC four regional workshops

As per recommendations of the Inception workshop on **"SAARC Initiatives on Regional Food Security"** at Dhaka, it was decided that five proposed projects proposals would be again discussed with Governments and potential implementing partners in the member states for regional vetting. Due to this, Asian Development Bank (ADB) and SAARC Agriculture Centre (SAC) organized four regional workshops on the submitted projects proposals in Bangladesh, India, Pakistan and Sri Lanka.

SAC/ADB project formulation team met in the 1st workshop was held at National Centre for Agricultural Economics and Policy Research (NCAP), New Delhi, India during 16-17 September 2010

The 2nd workshop was held at National Agricultural Research Centre, Park Road, Islamabad, Pakistan during 21-22 September 2010. The 3rd workshop was held at Department of Agriculture In-Service Training Institute, Peradeniya, Sri Lanka during 29 September to 1st October 2010. The 4th workshop was held at Bangladesh Agricultural Research Council (BARC), Dhaka, Bangladesh on 9 October 2010.

Scientists; Experts; NGOs; Policy Makers of the SAARC member states; Director, SAC; Team Leader, Consultants of the projects and SAC Professionals attended in the workshops. Potential development partners also participated in the meeting.

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Centre's new window opened

Value chain development on fresh vegetables

Mr. J.M.P.N. Anuradha, Department of Agricultural Extension, Faculty of Agriculture, University of Peradeniya, Sri Lanka participated in the short term research program of SAARC Agriculture Centre around for three months from 1st August to 31 October 2010 under Graduate Research Program for 2010. Mr. Anuradha has been awarded this graduate research fellowship by the Centre.

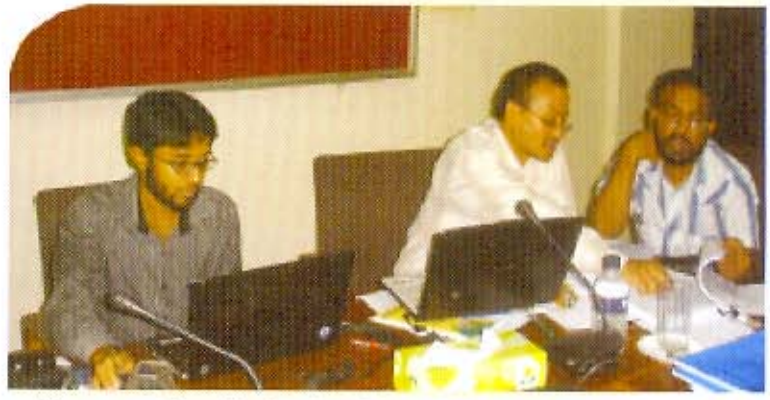
He surveyed on **"Major Domestic Value Chains for fresh Vegetable-A comparative study for Sri Lanka and Bangladesh"**.

During this period, he worked on vegetable sub-sectors in Bangladesh and identified that there is huge potential to achieve a significant economic growth through expansion and sustainable development of vegetables in Bangladesh. This reviewed research is an attempt to comparatively study the major existing domestic vegetables value chains in Sri Lanka and Bangladesh in relation to functional characteristics of the value chain actors, linkages, governance structure and nature of information transfer mechanisms available for vegetables marketing in the respective countries. A comparative study was conducted with a total of 275 value chain actors in five different levels i.e. production assembling, whole sale trade, retailing and consumption.

In order to facilitate marketing decisions and regulate the competitive market processes, it is essential to

(Continued on page 6)

Annual Audit for the financial year 2009 of SAC



The annual audit for the financial year 2009 of the SAARC Agriculture Centre (SAC) was conducted by a Joint Audit Team (JAT) 2009 during 5-6 July 2010. The JAT 2009 audited the annual accounts and related statements of receipts and payments of the Centre.

The JAT 2009 found out that necessary accounts were appropriately maintained by the Centre. The two members audit team, Mr. Mohamed Zaeem, Asstt. Director General, Auditor General's Office, Male, Maldives and Mr. Tempa Gyeltshen, Asstt. Auditor General, Royal Audit Authority, Royal Government of Bhutan.

SAARC Forestry Centre

A team consists Director, Professionals of the SAARC Forestry Centre (SFC), Bhutan visited SAARC Agriculture Centre (SAC) on 1st August 2010. During visit, the Centre organized a meeting for sharing ideas, objectives of the visits especially climate change in South Asia, common issues between two SAARC Centres. Director, Professionals and Technical Staff of SAC attended in the Meeting.

New initiatives on common goal

IRRI- SAARC MoU

This agreement is made between the SAARC Agriculture Centre, Dhaka, Bangladesh hereinafter referred to as "SAC" the first regional agricultural centre of the South Asian Association for Regional Cooperation (SAARC) on the one part, and the International Rice Research Institute, nonprofit international research center with its headquarter Manila, Philippines, hereinafter referred to as "IRRI" on the other part.

SAC and IRRI (hereinafter referred to as the parties) inspired by their common goals and objectives, hereby agreed to promote and accelerate expansion and dissemination of improved research technologies and package of practices to enhance the livelihood of the poor farmers in a mission mode approach have decided to come into this agreement and agree as herein contained:

- **Areas of collaboration**

Promote the development of cooperation in the fields of research and training in abiotic stress tolerant rice and improvement of production techniques and extension thereof in South Asia region through:

a. work together on policy development and alternation, thereof on mutually agreed issues such as:

- exchange of seeds of germplasm, breeding lines and released varieties for research purpose;
- sharing of released breeding material and technology dissemination;
- joint evaluation and release of varieties in more than one country for similar agro-ecological conditions;
- common seed policy for varietal evaluation and release; early release of varieties developed through marker assisted backcrossing (MABC) in the background of local popular varieties; pre-release evaluation (across countries) and seed multiplication;

b. promotion and extension of improved technologies through SAARC resource mechanism and networking;

c. training of SAC officials, and national scientists, trainers, extension workers and farmers in improved technologies;

d. exchange of scientific literature, information, material and methodologies on rice research development generated by IRRI and NARS through SAC in member countries;

e. joint organization of training, meeting and workshop;

f. participation of officials/scientists in the training, meeting and workshop organize by IRRI and SAC;

g. regular review of the progress and recommendations for the improvement, thereof;

h. translation of scientific literature into local languages for better understanding of the information;

i. any other issue mutually agreed by both the parties.

- **Contribution of IRRI**

a) share released stress tolerance rice material and cultivation technologies generated through IRRI and NARS with SAC;

b) share the data generated through NARS system to facilitate the varietal release and dissemination;

c) organize the exposure visits for officials of SAC and member countries on related new rice technologies relevant to the farmers of the region;

d) facilitate pre and post departure formalities of the nominated participants and meet the local hospitality at IRRI headquarters in Philippines;

e) provide technical assistance and resource person for the training of SAC scientists;

f) exchange information on the latest rice production technologies and package of practices;

- **Contribution of SAC**

a) share SAARC network for variety evaluation and dissemination in the member countries and data generated thereof;

b) coordinate to promote the release of varieties across the countries depending on their agro-climatic conditions;

c) assist in impact assessment;

d) nomination of officials for the exposure visit and training organize by IRRI, and provide the financial support for their air-travel, visa, life insurance coverage and allowances, if any with the help of national system;

e) help in establishing linkages with the governments of member countries for implementation and facilitation

(continued on page 6)

Necessity to planting date palm resisting subversive effect of calamity

Changing of climate is rising with its parameters and sea level day by day, this is the high time to face it through possible one possible technique planting of huge date palm in vulnerable areas in South Asia. Asia, Africa, America, Middle East require thousand thousand tones dates. Bangladesh needs 30 thousand tones dates. Among 12 date producing countries, Pakistan is in the 5th position and 11% percent dates has been produced of total dates. Almost 90 thousand tones are exporting from Pakistan. USA, UK, Australia, Dubai, Canada, Germany, Indonesia and Malaysia, African countries, Middle East including different other country even in India and Pakistan is producting dates excepted Bangladesh. Reproduction of date palm from *Phoenix dactylifera* is almost impossible through any type of insects, bee and air. So, it needs to transfer pollen artificially by hand or by mechanical way. Cross section or transferring pollen have to transfer the pollen of male tree's flower to female flower that the petal have to reaped at a point. If this procedure has done consecutively 2/3 times during 2/3 days interval then it gives better efforts. For necessary cases, it required to import the powder of male plant from Saudi Arabia. This powder could be stored within -4°C to -18°C for almost 2/3 years. Any characteristics will not be lost. This date tree grows in unfertile land as well as high saline areas. Lifetime of a date palm is almost 150 years and it is strong. It's root almost 2 meter deep of soil. So, this tree is not broken easily by strong storm or high wind. Date plant is life guard and environment friendly for sea side and alluvial land. It looks beautiful aside sea area and both side of the highway, which easily attract the visitors and the great feature is- it needs less water, long life time, higher productivity. The date palm is delicious and sweet valuable items. Muslims around the world have date palm during Ramadan and it is nutritious.

Annually 14 lakh tons date leaf comes from the Middle East. Those leaves help to meet fuel supply, to create housing mates and various types of handicrafts. This tree helps to create agricultural friendly environment and resist from soil erosion and it grows in salt affected and drought-prone areas. So, we need to produce huge date trees to resist water erosion, reduce temperature, even ensure food security.

Nutritional status: Important nutrients as glucose, fructose, iron, potassium (150 M.gm in 100gm) magnesium, sulfur, copper, calcium and phosphorus are available in the dates. Besides, different vitamin i.e.- thiamin, riboflavin, biotin, folic and ascorbic acid also available. Date palm contains 13.8% water and around 3% carbohydrate. Whenever any one eat dates then it gives 3 thousand and 470 k.cal. energy for body. Our local soil is suitable for growing date palm. The scientific name of this date palm is *Phoenix dactylifera*. So, it is possible to grow in our country. Since, date is producing in Valuka of Mymensingh district so, at present at greater Faridpur and Jessore and in future in all parts of Bangladesh date palm will be seen very soon. About 10/12 offshoot grow from the root of this type of date palm. Date grows within 3/4 years. But to bear fruits in seed's seedlings it takes 5/7 years. Date juice and molasses could be collected from this.

Cultivation process: Actually date tree grows any types of land but sandy loam soil with water holding capacity and drainage system in suitable.

Seedling from the seeds: Soil or media for seedlings from the seeds. To mix one third sand, some ash, rotten

(Continued on page 6)

Necessity to planting date palms

(from page 5)

dung, compost. It has to mix 500 gm organic matter for 100 kg of soil. The seeds have to germinate for 24-84 hours. Those seeds have to put inside that soil into half inch deep. Water level must have to lower as if don't seems as muddy. Water have to spray for 2-3 days per week. Seedlings will grow within 21-30 days. Mixed 100 gm urea with 1 litter of water then it has to spray after 3 months interval.

Seedlings planting method: Distant from one plant to another plant will be 25 feet to 30 feet. It has to create scope to have sunshine for 5 to 8 hours per day wherein it will boost the plant firstly. In winter season this tree grows slow. So, it will not be plant more than 100 to 121 trees per acre. It may be mentioned that if necessary, 1 2degree of more temperature then we could use 1 feet layer of sand to of the land.

Preparing hole: Dug hole of 3 feet deep, 3-feet long and 3 -feet wide. Put upper soil to lower and lower soil to upper. If possible - it needs to absorb sunshine for 1/2 day(s). For protecting from the insecticide poisonous powder could be use.

Fertilizer management: Some amount of crash bone powder at the root of the tree along with 8/10 kg. rotten or dry dug powder to be mixed. Mixed fertilizer could be provided after 10 to 15 days of planting seedlings. After planting seedlings let it be never dry. Besides this huge water could not be sprayed so much it does not became so muddy.

Muhammad Shafiqul Islam

Value chain development on fresh vegetable

(from page 3)

strengthen the linkages along the value chains for fresh vegetables in such a way the value chain actors could exchange information necessary for them to act competitively in the market. A strong public and private sector intervention is needed to upgrade the value chains for fresh vegetables in Sri Lanka and Bangladesh as a strategy to contribute to economic growth at the macro level. Value chains and value chain development work at domestic level should be encouraged in South Asian countries as a strategy to achieve sustainable alleviation of poverty and ensure food security.

IRRI- SAARC MoU

(from page 4)

of the program; clearance for organizing meeting, monitoring visit and participation of the national scientists in IRRI organized visit, meeting; and exchange of scientific material and literature.

- **Expected Output**

a) network developed for upscaling seed production and adoption in SAARC region;

b) accelerated diffusion of stress tolerant rice varieties and technologies;

c) maximized targeting of farmers in the shortest possible time;

d) enhanced and stabilized rice productivity in stress prone areas;

e) enhance the livelihood of rural poor through development and dissemination of rice varieties tolerant to abiotic stresses.

- **Intellectual Property Rights and Publications**

a) Results of the collaborative research will be jointly published in the public interest as mutually agreed upon.

b) All research materials used in the collaboration will be transferred using Material Transfer Agreements (MTA). Further, the transfer of biological materials, including breeding materials and germplasm, will be subject to pertinent biosafety and bioprospecting laws, rules, and regulations. Either party may use such materials, but will give full credit to the source of the materials.

c) It is also agreed that all outcomes of the activities, including all intellectual property rights (IPR), shall be jointly owned by both parties. As such, they shall remain publicly accessible and shall be available to the partners and to end-users.

We would appreciate hearing from you and look forward to your response through e-mail at sac@saarcagri.net

Prospects of tea cultivation in Pakistan

Tea, being one of the most important beverages used in the world is the third largest item after petroleum and edible oil in the import list of Pakistan. . The trend of tea drinking in the country is tremendously increasing due to popularity of the drink and rapid growth in population. During 2009-10 Pakistan imported 95219 tons of black tea costing Rs. 21622 million with highest share from Kenya (60.95%) while the green tea import was 913.72 tons with 64.46% from China.

Tea plantation in Pakistan: Tea plantation was first introduced by Pakistan Tea Board in 1958 at village Baffa, District Mansehra in the Khyber Pakhtunkhwa province (KPP). But its cultivation did not prove fruitful as the country was self sufficient in tea at that time. Tea plantation assignment was entrusted to Pakistan Agricultural Research Council (PARC), Islamabad in 1976-77. PARC not only started systematic research on 1.5 acre tea plantation at Baffa but also established its first Experimental Tea Garden on 2.5 at village Daively. Based on the successful experimentation, a four member team of Chinese Tea Experts was invited by Government of Pakistan. Pak-China team surveyed the northern parts of KPP on the basis of topography; soil conditions, rainfall and its distribution, temperature and its variation etc. and explored an area of about 64000 ha in Hazara and Malakand Divisions. A lot of more area is available to be identified as suitable for tea plantation in rest of the part of the province. On the recommendations of survey/feasibility report National Tea Research Station was established in 1986 on 50 acres land at Shinkiari, of District Mansehra (KP). The station was up-graded to the level of Institute in 1996.

Prospective Areas: Pakistan is an agricultural country and has a lot of potential tea growing area in its northern parts of districts Mansehra, Battagram and Abbottabad in Hazara Division and district Swat in Malakand Division in the Khyber Pakhtunkhwa Province (KPP) and some parts of Azad Jammu Kashmir (AJK). All these areas more or less lie in a moderately contiguous belt between 34° 13' and 35° 14' N latitude and 72° 46' to 74° 07' E longitude.

Hazara Division: The cultivated area of district Mansehra; with an average farm size of about 1 ha, mostly lie in the valleys i.e. Pakkhal, Konsh, Chatter plains and Agror (popular for growing rice, wheat, maize ,barley, and other crops) ranging from 1,000 to 5,500 feet above sea level. The Pakkhal plains are about 3,000 feet above the sea level, 17.6 km. from north to south and 16 km. On the north side, the mountains of Allai are also important because of vast grasslands on the higher slopes. The length of growing season in the central area of the district Mansehara spread over 150 to 200 days. Although the cultivated area of district Battagram is not enough with the average farm size of less than 1 ha, even then some area is available to bring under tea with annual length of growing season of not less than 180 days. In district Abbottabad a few level tracts or with gentle slopes towards north-eastern side of the district, are considered suitable for tea plantation with growing season of 180 days.

The identified area of upper Mansehra district receives annual rains of 1200 to 1400 m.m. with average day relative humidity of 55 to 60 %. Most of the winter rains fall in the form of snow which decreases the temperature to the lowest minimum as 0°C in January while it goes up to the highest maximum 34°C in May/June. Crops are mostly grown on terraced and a few level tracts of land many of which are irrigated whereas some are rainfed and spring irrigation in the valleys. The main source of the irrigation in the central parts is river Kunhar & Siran.

The farming communities in the prospective tea growing area in Hazara Division comprised 6 to 14 family members and of them 2 to 5 members are involved in farming while many others migrated to urban areas in search of jobs. In Hazara division the labour force constitutes about 24 % of the population, of which 80 % is engaged in agriculture.

Malakand Division: A sizeable area, suitable for tea cultivation, has also been identified in district Swat in Malakand Division which can be brought under commercial tea production. These areas are located among the foothills of the Hindukush with varying elevation ranging from 2000-5000 feet. The area of district Swat receives the average annual rains ranging from 1000 to 1200mm.

(Continued on page 8)

Prospects of tea

(from page 7)

In Swat the Urban to Rural population ratio is 13.83: 86.17 respectively. Roughly 50% of the employed population is involved in the skilled agriculture, forestry, hunting and fishing trades; 14% in community, social and personal services; 12% in wholesale, retail trade, restaurant and hotel businesses; 11% in construction and around 6% are engaged in transport, storage and communications.

Area in AJK: The total area of AJK is 1,330,220 ha with cultivated area of about 170,787 ha; with average farm size of about 1ha and elevation of 1200 to 21062 feet from south to north respectively. The area is mostly hilly and mountainous with numerous valleys and stretches of plains. NTRI, surveyed about 4,000 ha area in the districts; Poonch, Bagh and valleys: Neelum and Jhelum and identified the area mostly suitable for tea cultivation. The plains of Jhelum valley are fertile with reasonable land holdings. The area receives average rains of about 1500 mm. annually. Besides, the main rivers: Jhelum, Neelum and Poonch are sources for irrigating the cultivated areas.

The total population of AJK comprised 2.915 m. of which 88 percent is rural and 12 percent urban. The rural population is engaged in agriculture, trade, hotel business and livestock etc.

Impact on economy: Based on increasing demand of tea in the country, it is expected that Pakistan will be the largest tea consuming country in the world in near future. Tea production in the prospective tea growing areas of Pakistan has a vast scope for the investors to produce quality tea on higher altitude to earn huge profit.

Source: Dr. F.S. Hamid, Director, and Malik Naseer Ahmad, PSO, National Tea Research Institute, Shinkiari, Pakistan

GM Crops (from page 1)

abiotic stresses, and for achieving several other goals for human welfare.

It is interesting that despite strong opposition from several quarters, area under transpenic crops has increased rapidly during the last 10-15 years. Globally, genetically modified canola, maize, cotton soybean are grown on large areas and Bt-cotton has almost swept the cotton-growing area in India. Some GM products have already entered into India's food chain and, so, it is not possible to keep the country free of GM foods. The worldwide trends also indicate that it would be very difficult for non-biotech crops to compete with biotech crops. So a country like India faces a big challenge if it decides to keep GM crops away. Domestic demand for food is bound to rise under the pressure of population and growth in income with shrinking resource base, stressful production environment and threatening climate change with unclear consequences. All of this would require that we use all options at our command, including GM technology. Let there be no doubt that GM crops are not a panacea but we have few choices that can give better results.

The strongest opposition to GM crops relates to concerns for human health and environment. But this is never compared with the hazards associated with the use of chemicals and growth hormones being used in food production using conventional technology.

Like any other technology, there are some potential dangers associated with GM organisms and transgenics. Because of these dangers there should not be out-right rejection of these highly promising technologies. The fact that there may be risks along with benefits with the use of GM technology necessities that we put in place a strong GM technology regulator for assessing, monitoring and managing these potential risks and carefully harness the potential.

Source: Dr. Romesh Chand, Director, National Centre for Agricultural Economics and Policy Research, New Delhi, India and Honorable Governing Board member, SAC.
(These are his personal views)

The SAARC AgriNews can be downloaded from the content page of our website

Agarwood

In the forests of Southeast Asia an evergreen known as the Aquilaria tree grows. Roughly 1 % will become infected by a fungus, which spreads from deep within the heart of the wood. As natural properties resist the fungus, a dark brown - often black - thick resinous core is formed. This resin is known as Agarwood which, for centuries, has been one of the most prized and valued aromatic resins in the world.

Agarwood has been a premium export of Southeast Asia since the mid 16th Century when Nguyen Hoang, ruler of the central provinces of current day Vietnam would market it primarily to China and Japan. At the time, a single pound could be exported for 15 taels and then resold on the market for 600 taels. The demand for agarwood has waivered little since and its value remains high.

Value of Agarwood: Sweet Smell of Success

Agarwood is not just valued for the wood itself but also for the properties found in its unique, aromatic resin. Once processed, Agar provides a scent unlike any other in the world and is a staple for luxury perfumes, soaps, incense, spiritual and religious ceremonies and more. For many in the Middle East there is no acceptable substitute for the use of Agar in their ceremonies. Chips are burned for their distinct fragrance and wood gifted to show wealth. Agar has also been in demand for medicinal purposes for thousands of years throughout Southeast Asia. In the West leading manufacturers of perfumes, soaps and fragrances are constantly seeking out reliable sources. No less than Yves St. Laurent insist on Agar Oil as an additive for their more premium brands. In Japan, Agar incense is used regularly during Koto or "incense ceremonies." Oil distilled from agarwood can cost as much as US$30,000 per kilogram depending on the grade and demand.

Uses

- Incense
- Soaps
- Perfume
- Medicinal

Solving the 1% Agarwood Problem

Only 1 % of Aquilaria trees contain the rich Agar resinous core so valued throughout the world. Adding to the problem is the fact that since 1995 Aquilaria malaceenis, the primary source of Agarwood, has been protected by the Convention of International Trade in Endangered Species of Wild Fauna and Flora. Now, imagine a solution whereby every single tree contained the rich resinous core, the maturation period was enhanced dramatically and the process by which each tree was harvested met all environmental guidelines and regulations. This would represent an exciting opportunity. According to the University of Minnesota, new scientific processes and microbiologic research mean high quality agarwood can be produced in under two years.

Submit research or review papers to SJA

SAARC Journal of Agriculture (SJA), a half yearly publication from the SAARC Agriculture Centre is envisaged to serve as platform exchange of latest knowledge on breakthrough topics that are of current concern for researchers, extensionists, policy makers and students. It aims to capture the first-hand knowledge on research achievements in the field of agriculture, fisheries, livestock, forestry and allied subjects from the SAARC member countries.

You can publish your research or review papers in our esteemed journal without any page charges or other processing cost.

For author's guide lines, please visit our website: www.saarcagri.net.

You are requested to submit your manuscript in electronic form via e-mail: sja@saaragri.net or via post addressing to Editor, SAARC Journal of Agriculture (SJA), SAARC Agriculture Centre, BARC Complex, Farmgate, Dhaka-1215, Bangladesh.

Effective management of soil fertility

Several varieties of almost all crops with high-yield and high-quality potentials have been developed for cultivation. However, these varieties can grow and perform to their maximum genetic potentials, only if they are cultivated in the productive soils. The soil can be productive only if it is fertile and healthy. The soils can be fertile and healthy only if they are supplied with all the essential macro and micronutrients in sufficient amounts and desirable proportions, besides being free from any toxic substance.

Very small dosages

Iron, manganese, zinc, copper, boron, molybdenum and chlorine are required by plants in very small amounts as much essential and important for the normal growth of the crops as the major nutrients of carbon, oxygen, hydrogen, phosphorous, potassium, calcium, magnesium and sulphur needed by the crops comparatively in large quantities at percentage levels.

Limiting nutrient

The growth and yield of a crop will be limited to the amount of the nutrient that is available to the crop in the least amount, as dictated by the Law of minimum concept. If one micronutrient needed at the least level becomes deficient, the crop cannot grow normally, even if all the other nutrients are supplied in sufficient amounts. As we have been cultivating high yielding varieties of different crops under intensive agriculture over the years, the reserves of many of the micronutrients have been depleted in the soils as they have not been replenished through the appropriate manure - fertilizer schedules including the micronutrients too. The fertility and productivity of our arable lands cannot be restored without suitable balanced fertilization programmes.

Rectify deficiency

The growth and the yield of the crop will be limited to the amount of the nutrient present and available to the crop in the least amount irrespective of the availability of all other nutrients in relatively higher amounts. Unless we rectify the deficiencies of micronutrients, continuous application of major nutrients alone cannot improve the performance of the crops under cultivation.

Source: The Hindu, India

New variety of BARI

Recently Bangladesh Agricultural Research Institute (BARI) released two varieties: one BARI Soybean-6 another BARI Begun-10

BARI Soybean-6

Identifying character: Plant height 50-55 cm, Seed colour cream, 2-3 seed/pod, Seed size medium, medium tolerant to mosaic.

Duration: 100-110 days

Yield (ton/ha): 1.8-2.10

Sowing time: Mid December-mid January

Harvesting time: March-April

Major diseases and Management: Yellow mosaic. Management: Rouging out and buried the diseased plant from the field immediately after appearance of the disease.

Major insect/pest and Management: Hairy caterpillar. Management: Leaves of infested plant should be destroyed. Nogos 100EC/Marshal 20EC should be sprayed @2ml/lit.water.

BARI Begun-10

Identifying character: Heat tolerant line suitable for growing round the year, Long cylindrical shaped fruits having round tip. Attractive shiny deep brick purple fruit skin colour. Intermediate growth habit having few prickles (3-5) on leaves. Plants moderately resistant to bacterial wilt, soil nematodes aphid and jassid.

Crop duration: 150 days

Yield: 50-55 (t/ha)

Fruit size: Long cylindrical

Contribute to SAARC AgriNews

SAARC AgriNews is a widely circulated Newsletter devoted for disseminating agricultural research and development findings as well as information on applied technology for the farmers of South Asian region.

SAARC Agriculture Centre has been publishing this Newsletter (formerly SAIC Newsletter) since 1991 and distributing it to about 7,000 readers in SAARC member countries. The Centre has been distributing SAARC AgriNews to the relevant agricultural institutions, scientists and extension service providers of SAARC member countries for better livelihood of the farmers free of cost. Please send your articles, success stories and news on applied research, extension activities, proceedings and/or recommendations of seminars, symposium, consultations and workshops in the field of agriculture with relevant photographs either by post or through e-mail. Please note that unaccepted articles are not returned to the authors.

The insect is brown colour

Control of coconut leaf beetle

Both the larvae and adults of the Coconut leaf beetle (*Brontispa longisimma*) inhabit the developing spears where they cause decay and drying of affected parts which prevent the tree from bearing fruits. When the infestation reaches the pith, the palm eventually dies.

Recently the National Bureau of Agriculturally Important Insects, Bangalore, has sensitised the Plant Protection Scientists and Quarantine officials to be vigilant against this alien pest.

Emergency measures

If the pest is noticed anywhere, apart from treatment of affected palms, emergency measures have to be taken to prevent its spread.

The beetle is generally brown in colour with bright orange thorax. The damage symptom caused by this pest is almost similar to that of coconut black headed caterpillar.

Burnt appearance

If the tree is seen from far, the dried fronds appear burnt. But the only way their damage can be differentiated is that, coconut leaf beetle attacks the top young fronds while black headed caterpillar prefers middle and lower fronds.

At present, mechanical, biological and chemical methods are employed to eradicate this pest. In young palms, cutting down and burning of the affected plants is recommended.

For older palms, chemical control should be applied by using systemic pesticide injected into the trunk of the palm.

Biological method

Biological method, involves the use of natural predators such as earwig, green muscardine fungus, and white muscardine fungus to paralyze and eventually kill the pest.

The eggs of this beetle are difficult to detect because they are inserted in between leaflets. So, there is a need for thorough inspection of planting materials intended for transport to uninfected areas.

With the movement of international passengers carrying palm seedlings inadvertently and import of various palm seedlings, the risk of this pest entering our country is more. Hence, scientists, farmers, quarantine officials, coconut industry stakeholders must join hands in preventing the entry of this pest.

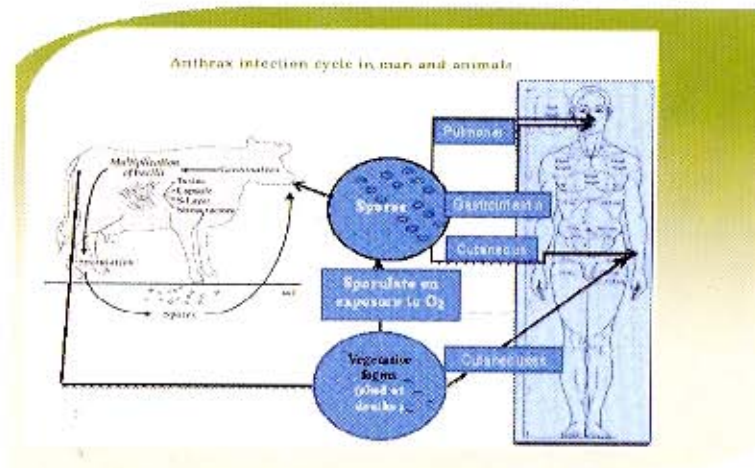
Source: The Hindu, India

Anthrax outbreak in Bangladesh

Anthrax is a bacterial disease caused by *Bacillus anthrasis*, a gm +ve spore forming organism which has a zoonotic importance to spread between animals and human being.

The spores can remain dormant for years until they find their way into a host — usually wild or domestic livestock. Most human cases of anthrax occur as a result of exposure to infected animals or their meat or hides. All kinds of domestic animals including cows, goats, sheep and buffaloes are susceptible and transmit it to humans. Lack of awareness and inadequate supply of vaccine are cause of rapid anthrax outbreak and government authorities are claiming nothing to fear as immediate treatments can cure easily.

The anthrax outbreak in Bangladesh was detected on August 2010 at NorthWestern part of Bangladesh. Became infected after consuming beef from sickened cows, it then spread to neighboring districts and till 23 September 599 *Cutaneous anthrax* were detected in different districts. According to the institute of epidemiology, disease control and research (IEDCR), 33 cows and 17 goats died by the disease, and another 217 animals had been infected since outbreak in Bangladesh.



Fair

A two days Rice Fair of International Rice Research Institute (IRRI) was held at Bangobandhu International Convention Centre, Dhaka during 13-14 July 2010 in connection with celebration of 50th Anniversary of IRRI.

SAARC Agriculture Centre participated with a stall in Rice Fair. Begum Matia Chowdhury, Honourable Agriculture Minister, Ministry of Agriculture, Government of Bangladesh opened the fair. A number of Centre's products was sold during the fair.

Annual Scientific Conference

The 8th Annual Scientific Conference on "One Health One World-Bangladesh Initiative" jointly organized by One Health Bangladesh and Chittagong Veterinary and Animal Sciences University (CVASU) held during 23-25 September 2010 at Hotel Agrabad, Chittagong. One Health Bangladesh is a national coordinating body to promote the growing popular global "One Health" movement focused to alleviate sufferings of human and animals at the same time as taking necessary steps towards conservation of the environment. Dr. M. A. Sattar Mandal, Vice Chancellor, Bangladesh Agricultural University and Dr. Shah Md. Monir, Director General, Health Services attended as Guests in the inaugural session of the conference. Dr. Md. Afsarul Ameen, Honorable Minister, Ministry of Primary and Mass education attended as a Chief Guest in the closing occasion. A good number of renowned animal scientists, human scientist, Agriculturist and Environmentalist from local and abroad attended the conference and presented their papers. Md. Nure Alam Siddiky, Programe Officer (Livestock), SAARC Agriculture Centre also attended the meeting.

Bhutanese expert present paper

SAARC Agriculture Centre organized a Seminar on "Agriculture in Bhutan" was held on 21 August 2010 at SAC Conference Room. Dr. Mahesh Ghimiray, Research Specialist, RNR, Bhutan delivered his presentation during seminar. He described on Bhutan agriculture present situation. Dr. Rafiqul Islam Mondal, Director, SAC was presided over the seminar. Scientists from Bangladesh, Professional and Technical Staff of SAC attended in the meeting.

Workshop on New Look to Program Development Process of SAC

A two days workshop was held during 30th June to 1st July 2010 at In-service Training Institute, Gannoruwa, Peradeniya, Sri Lanka organized by the Governing Board member for SAC from Sri Lanka which was sponsored by the Department of Agriculture, Peradeniya, Sri Lanka. The objective of the workshop was regional vetting on five years programs on crops, livestock, fisheries and production economics sectors submitted by SAC. About 40 participants from various departments related to Agriculture attended and presented their proposals on the submitted programs of the Centre. In addition, the sixteen proposals on crops, 13 proposals on fisheries and livestock from Sri Lanka were presented in the workshop. Dr. M. Nurul Alam, Senior Programme Specialist (Priority System & Programme Development), SAC and Dr. Hemal Fonseka, Senior Programme Specialist (Crops), SAC attended the workshop.

Visit abroad

■ WorldFish Centre organized a seminar on Harnessing the development Potential Aquatic Agriculture System for the Poor and Vulnerable" was held on 19 July to 21 July 2010 at Penarg, Malaysia. Dr. Rafiqul Islam Mondal, Director, SAARC Agriculture Centre attended the seminar.

SAC Provides ABIS through e-mail

SAARC Agriculture Centre has been providing Agricultural Bibliographic Information Service (ABIS) on different CD-ROM database. The following CD-ROM databases are available with SAC: CROP CD (2007/07), HORT CD (2008/06), VET CD (2003/11), PLANT GENE CD (2008/08), SOIL CD (2007/04), PARASITE CD (2005/07), FSTA (2007/10), CAB ABSTRACT (2005/11), TREE CD (2004/10), FOREST SCIENCE CD (2008/07), ANIMAL PROD. CD (2008/11), VETEARINARY CD (2008/8), AGRICOLA CD (2007/6) is also subscribed for renewal.

If you wish to avail ABIS, please send your reque st to **abis@saarcagri.net** addressing the Director, SAC. Please mention the keywords, title of CD-ROM database and the range of years for which you need the references.

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