



SOUTH ASIA
BIOSAFETY PROGRAM

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SABP

The South Asia Biosafety Program (SABP) is an international developmental program initiated with support from the United States Agency for International Development (USAID). The program is implemented in India and Bangladesh and aims to work with national governmental agencies to facilitate the implementation of transparent, efficient and responsive regulatory frameworks for products of modern biotechnology that meet national goals as regards the safety of novel foods and feeds and environmental protection.

SABP is working with its in-country partners to:

- Identify and respond to technical training needs for food, feed and environmental safety assessment.
- Develop a sustainable network of trained, authoritative local experts to communicate both the benefits and the concerns associated with new agricultural biotechnologies to farmers and other stakeholder groups.
- Raise the profile of biotechnology and biosafety on the policy agenda within India and Bangladesh and address policy issues within the overall context of economic development, international trade, environmental safety and sustainability.

BANGLADESH GOVERNMENT APPROVES NATIONAL INSTITUTE OF BIOTECHNOLOGY ACT

The long awaited Bangladesh National Institute of Biotechnology (NIB) Act was approved in a cabinet meeting of Ministers held November 5, 2009, which was presided over by the Prime Minister. It is expected the bill will be passed in the next session of Parliament.

After struggling for more than two years to get the NIB Act approved, this is good news for the Bangladesh biotechnology community. Special thanks are due to the Global Network of Bangladeshi Biotechnologists (GNOBB) forum and Bangladeshi Young Biotechnologists for their continuous effort in this regard. Following the transfer of NIB to the Revenue Budget, it is hoped all vacant posts, including those for heads of the divisions, will be filled quickly and research work related to the economic development of Bangladesh will be fully launched before long. The autonomous status of the Institute will enable it to offer higher salaries and other benefits to the non-resident Bangladeshis commensurate with their qualifications and experience under the umbrella of a public-private-partnership program. A detailed report on the National Institute of Biotechnology appeared in the August issue of SABP Newsletter (Vol. 5, No. 8, 2009).

For more information about the NIB please contact: Dr. Md. Saidul Islam, Director General, NIB; Tel: 880-2-7701458; Fax: 880-2-7701636.

BANGLADESH HOLDS SEMINAR ON DEVELOPMENT OF SALT TOLERANT RICE AND COLD TOLERANT JUTE

Prof. Zeba Islam Seraj and Prof. Haseena Khan of the Department of Biochemistry and Molecular Biology, University of Dhaka presented their research findings on salt tolerant HYV rice and cold tolerant jute respectively at a seminar held November 4, 2009 at the Centre of Excellence at University of Dhaka.

Special guests at the seminar included Begum Matia Chowdhury, Bangladesh Minister for Agriculture and Prof. A.A.M.S. Arefin Siddique, Vice Chancellor, Dhaka University.

Prof. Seraj described the results of her group's research on the development of a salinity tolerant HYV rice variety using marker assisted breeding. She went on to say that her breeding population is now at the advanced stage of selection in saline soil of Satkhria region of Bangladesh. She is hopeful she will be able to hand over the seeds of this salt tolerant breeding line to the Bangladesh Rice Research Institute at the end of November 2009 for further trial and their subsequent release to farmers.

Prof. Haseena presented her data on the cold tolerance capacity of the various jute varieties available at the Gene Bank of Bangladesh Jute Research Institute (BJRI). She said most of the jute varieties cultivated in Bangladesh cannot be germinated below 16°C. She was able to select some cold tolerant jute varieties from the BJRI gene bank. Using marker assisted breeding she located the cold tolerant gene that can be transferred in the jute varieties cultivated in Bangladesh.



While expressing satisfaction at the quality of research work at Dhaka University, the Minister, who is in favour of new technologies, advised the scientists not to become complacent. She urged them to extend the horizon of their research activities to cover other crops

like stress tolerant maize and more salt and drought tolerant rice cultivars for salt and in drought-prone areas of Bangladesh. She stressed the need to provide food for an ever increasing population and the role of new technologies in growing more food in limited land space. She went on to say that although there is much debate about the use of GM technology Bangladesh is in favour of its safe use. She reminded the audience that there was also debate on the hybrid technology when Bangladesh first approved hybrid crop varieties. She expressed hope that the debate about GM crops would also lessen once proven to be safe for human and animal health and the environment. The Minister assured the scientists she would be looking into the difficulties faced by research scientists and redress their grievances.

CALENDAR OF EVENTS

Event	Organized by	Date and Venue	Website
INDIA			
Seminar on 'GM Crops and Food Security'	Kerala Biotechnology Commission, Kerala State Council for Science, Technology & Environment, Govt. of Kerala	November 17, 2009 Thiruvananthapuram, Kerala	http://www.kscste.kerala.gov.in/index.htm
National Seminar on Bioengineered Foods: Strategies and Perspective	Department of Food Engineering & Technology, Sant Longowal Institute of Engg. & Technology	November 20 - 21, 2009 Sangrur, Punjab	http://www.sliet.ac.in/
Symposium on Bio-safety and Environmental Impact of Genetically Modified Organisms and Conventional Technologies for Pest Management	The Academy of Environmental Biology, Lucknow, and International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)	November 20 - 21, 2009 Patancheru, AP	http://www.icrisat.org/
National Symposium on Bt Cotton: Opportunities and Prospects	Central Institute of Cotton Research (CICR)	November 17 - 19, 2009 Nagpur	http://www.cicr.org.in/
7th Pacific Rim Conference on the Biotechnology of <i>Bacillus thuringiensis</i> and its Environmental Impact	Indian Council of Agricultural Research, Department of Biotechnology, Calcutta University and All India Crop Biotechnology Association	November 25 - 28, 2009 New Delhi	http://7btconference.org/
Winter School on Transgenic Development in Crop Plants	National Research Centre on Plant Biotechnology	December 1 - 10, 2009, New Delhi	http://www.nrcpb.org/
National Symposium on Recent Developments in the Management of Plant Genetic Resources	Indian Society of Plant Genetic Resources and National Bureau of Plant Genetic Resources	December 17 - 18, 2009 New Delhi	http://www.nbpg.ernet.in/
National Symposium on Climate Change, Plant Protection & Food Security Interface	Association for Advancement in Plant Protection Plant Health Clinic Laboratory, Directorate of Research, Bidhan Chandra Krishi Viswavidyalaya	December 17 - 19, 2009, Kalyani, West Bengal	http://www.aappbckv.org
	ILSI – India, New Delhi and ILSI International Food Biotechnology Committee, Washington DC	December 2009, New Delhi	http://www.ils-i-india.org/activities-events/forthcoming-activities.htm
BANGLADESH			
Annual Botanical Conference 2009	Department of Botany, Chittagong University & Bangladesh Botanical Society	January 9 – 10, 2010	www.bdbotsoc.org

POTENTIAL BENEFITS OF BIOTECH CROPS: BT BRINJAL: AN EXAMPLE

Dr. K.C. Bansal Professor & Principal Scientist, National Research Centre on Plant Biotechnology, Indian Agricultural Research Institute, New Delhi

Modern tools of biotechnology are being applied globally to further bring about genetic improvement in plants of economic and agricultural importance. Application of biotechnology has become necessary to increase food production to feed the ever-increasing global population, which is projected to be nine to ten billion by 2050. Estimates reveal that two to three fold increases in food production will be required over the next 20 years to match the population increases, and it may not be possible to achieve this goal through classical breeding methods alone. Plant biotechnology has emerged as a supplemental tool to increase the efficiency of crop production by way of developing transgenic plants with improved traits such as resistance to insect/pests, herbicide tolerance, and disease resistance, abiotic stress tolerance, nutritional quality improvement, extended shelf-life of fruits and vegetables and improvement in their keeping quality.

In India, more than 5 million farmers have benefited from Bt cotton, with an additional Rs 12,800 crore (\$3.2 billion) farm income generated from Bt cotton technology during the period 2002-07. This has been a real farm bonanza for poor

farmers. In 2008, a record 50 lakh small and resource-poor farmers planted Bt cotton in more than 76 lakh hectares, or 82% of the total area used for cotton cultivation, making India the fourth largest adopter of biotech crops in the world. It is noteworthy that for the seven-year period, 2002-08, there was a 150-fold increase in Bt cotton in India, which is more than twice the 74-fold increase in global biotech crops during the 13-year period 1996-08.

After the success of Bt cotton, the emphasis has now shifted towards vegetable crops such as brinjal, okra, cabbage and cauliflower.

Fruit and Shoot Borer (FSB), the most damaging pest for brinjal, causes farmers to spray 25 to 65 rounds of pesticides during each growing season, depending on the degree of infestation. Estimated financial loss to the country as a whole, because of the 50 to 70 per cent of crop damage caused by the FSB, is equivalent to Rs. 1,000 crore per annum.

Since 2002, about 25 studies, including environmental biosafety and food/feed safety studies have been done on Bt brinjal. This ensures that Bt brinjal is an absolutely safe edible vegetable, which will have multiple positive effects, including the following:

(continued on page 4 - see Bt Brinjal)

CREAM OF THE (WEB) CROP

harvesting the best from the worldwide web



THIS MONTH'S PICK:

Biotech Consortium India Limited

<http://www.bcil.nic.in>

Biotech Consortium India Limited (BCIL) was established with the objective of providing necessary linkages among different stakeholders to facilitate accelerated commercialization of biotechnology. BCIL has been actively involved in technology transfer, project consultancy, fund syndication, information dissemination, manpower training and placement related to biotechnology over the last decade and a half. BCIL has assisted hundreds of clients including scientists, technologists, research institutions, universities, first generation entrepreneurs, corporate sector, national and international organizations, central government, various state governments, banks and financial institutions.

BCIL acts as a nodal agency providing linkages among Central and State Governments; universities research institutes, industry, entrepreneurs, experts and international organizations.

The major areas of BCIL's operation are:

TECHNOLOGY TRANSFER

BCIL acts as a bridge between the research institutes and industries to facilitate commercialization of biotechnologies. BCIL has transferred more than 15 technologies developed in national research institutes and universities particularly through sponsorship from Department of Biotechnology (DBT) during the last six to seven years.

BCIL has also been continuously monitoring the process of technology transfer and commercialization of these technologies with a view to assist in trouble shooting and expeditious commercialization.

BCIL has established linkages with a number of reputed biotech companies who have developed biotechnologies which were commercially successful and are willing to transfer these technologies to interested entrepreneurs through BCIL.

Working closely with the research scientists and the industry in this process, BCIL has gained a deep insight into the problems in translation of laboratory scale biotechnologies from the laboratories into commercial ventures.

BIOSAFETY

BCIL actively engages in projects on biosafety issues related to GMOs. It works in close association with the nodal ministries, i.e., Ministry of Environment and Forests(MoEF), DBT and Ministry of Agriculture(MoA), the regulatory bodies for Biosafety, It also engages with international funding agencies such as Environment Canada, USAID, AGBIOS Inc., Canada, UNEP, World Bank, etc., in capacity building activities for various stakeholders through preparation of well researched publications, organizing international events, national workshops/consultations, technical training and series of countrywide events.

In addition to capacity building, BCIL disseminates information widely through various communication tools such as

websites, newsletters and publications. BCIL has set up four websites including India's Biosafety Clearing House (BCH) and Indian GMO Research Information System (IGMORIS), which it maintains and updates regularly through countrywide networking with key institutions and experts in this area. BCIL is presently assisting the DBT in preparing a detailed plan for establishment of the National Biotechnology Regulatory Authority (NBRA).

Consultancy

The consultancy activities include preparation of feasibility studies, detailed project reports for setting up biotechnology projects, insight into status of bio-industry sectors, market surveys, etc.

OTHER

- BCIL's information services include the management of the Distributed Information Sub-Centre of DBT 15 years. This centre creates databases for the industry, three biotechnology periodicals and runs a Biotechnology Club that provides its members with information on the latest developments in biotechnology through its publications and events. It also organizes awareness-building workshops concerning the commercialization of biotechnology
- BCIL coordinates the Biotech Industrial Training Programme on behalf of DBT. For 15 years this six month-long program has provided training to about 500 biotechnology postgraduates. The trainees are exposed to the industrial environment, which enhances their suitability for serving the industry.
- BCIL offers technical, administrative and financial management of long term biotech projects of national relevance.
- DBT has designated BCIL as its Accreditation Unit and Project Monitoring Unit for certification of tissue culture production facilities and accreditation of test laboratories.
- BCIL is the recognized Patent Facilitation Cell of the Ministry of Micro, Small and Medium Enterprises (MSME), Government of India.



Bt Brinjal - continued from page 2

- Provide better quality of brinjal, hence more marketable vegetable and more profit to farmers;
- more production per acre, hence more income per acre;
- much less use of pesticides, thus ensuring a saving for the farmer in the purchase cost of pesticides;
- much fewer sprays of pesticides, resulting in lesser health risks for farm labour and lesser environmental pollution.



Eggplant fruit and shoot borer

Extensive field studies over 5 years and 60 locations have shown that with Bt brinjal, farmers would use 70 per cent less insecticide for FSB control and, as a result, about 40 per cent less pesticide overall for control of all insect pests. Studies have shown that this results in a 71 to 97 per cent increase in marketable fruits over conventional hybrids and open-pollinated varieties of brinjal. The higher yield and better quality would result in higher net income for brinjal farmers. Reduction in usage of pesticides would also help in reduction of pesticide residues in brinjal and thus availability of safer products to the consumers. The benefits to the environment from the reduced use of pesticides are also expected to be significant.

India has seen a green revolution in agriculture, a white revolution in milk, a yellow revolution in oilseeds, a blue revolution in fisheries and revolutionary changes in the egg and poultry industry – all of which have resulted in more food on our plates, more incomes for farmers and more food security for the nation.

Globally, GM crops are now into their second decade (2006-2015). More than 13 million farmers in 25 countries planted transgenic crops on 125 million hectares last year. As a result of the consistent and substantial economic, environmental and welfare benefits offered by biotech crops, millions of small and resource-poor farmers around the world continued to plant more hectares of biotech crops in 2008, the thirteenth year of commercialization.

It is thus obvious that there is a new wave of adoption of improved GM crops that are contributing to a broad-based and continuing hectareage growth of agriculture globally.

USING ADVANCED CROP TECHNOLOGY TO INCREASE FOOD OUTPUT

Daily Star (Bangladesh) - November 12, 2009

Against the backdrop of rising number of consumers and shrinking per capita acreage of land for crop production, the issue of food security has come to the fore afresh.

Experts on agriculture, government representatives and journalists at an international workshop held in the Thai capital Bangkok were at one about having a rethink on the existing agricultural practice that depends for food production purely on the amount of arable land we possess.

What is of greater concern is the uncertainties in the seasonal cycles with delayed monsoons, droughts and downpours that have forced a major grain exporting country like India to become a grain importer.

These overriding factors militating against the global food security coupled with the fact that world will have to produce an additional amount of eight to 10 million metric tonnes (MT) of food grain per year to feed the extra 2.2 billion mouths claiming their share of food every day, it is time we had a fresh look at the solutions being provided by science in the field of crop research. Of special interest are the genetically engineered crop seeds, which promise far greater yield per acre as well as better ability to fight and grow in extreme weather conditions.

Though Bangladesh is still on the safe side with its one million ton stock of rice, we can hardly afford complacency given its ever-swelling population coupled with insecurity arising out of vagaries of nature. Especially, the experience of recent past, when even some leading rice exporting neighbours gave us the cold shoulder, should be lesson enough for us to fend for ourselves. But with dwindling size of per head acreage of arable land, we have little option but to multiply our crop production making use of the latest advancement in crop and seed technology available.

With this end in view, our own scientists and more particularly the policymakers in the government need to draw on the experience of developing countries that are already using such advanced scientific knowledge in crop and seed production. Thailand, which has lifted its earlier imposed moratorium on large scale trials of genetically modified rice and is now allowing breeders to conduct experiments on crops with the help of biotechnology, can provide us with an example to learn from.

Read the full article at <http://www.thedailystar.net/newDesign/news-details.php?nid=113649>

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