VOL 12 NO. 6 JUNE 2015

South Asia Biosafety Program

NEWSLETTER for private circulation only – not for sale

BANGLADESH

Highlights from the Awareness Building Workshop on Agricultural Policies

DR. MIAN SAYEED HASSAN, DIRECTOR, TECHNOLOGY TRANSFER & MONITORING UNIT, AGRICULTURAL RESEARCH COUNCIL, DHAKA

The Bangladesh Agricultural Research Council (BARC) organized a three-day training workshop entitled "Knowledge and Awareness Building on Agricultural Policies of Bangladesh" on May 5-7, 2015 at the BARC Training Building in Farmgate, Dhaka. A total of 40 participants were selected to attend from different National Agricultural Research System (NARS) organizations, including the Department of Agricultural Extension (DAE), the Bangladesh Agricultural Development Corporation (BADC), the Seed Certification Agency (SCA), the Bangladesh Agricultural Research Institute (BARI), the Bangladesh Rice Research Institute (BRRI), the Bangladesh Institute of Nuclear Agriculture (BINA), the Bangladesh Sugarcane Research Institute (BSRI), Bangladesh Jute Research Institute (BJRI), the Cotton Development Board (CDB), the Soil Resources and Development Institute (SRDI), the Bangladesh Sericulture Research and Training Institute (BSRTI), the Bangladesh Academy of Rural Development (BARD), the Ministry of Agriculture (MOA), the Bangladesh Institute of Research and Training on Applied Nutrition (BIRTAN) and BARC.

The training workshop started with a welcoming address given by Dr. Mian Sayeed Hassan, Director of the Technology Transfer & Monitoring Unit of BARC and the coordinator of this workshop. The workshop was inaugurated by the Chief Guest Dr. Md. Abul Kalam Azad, Executive Chairman of BARC.

Twelve papers were presented during the workshop. The topics of these papers included:

- Agricultural Research in Bangladesh: Priorities, Challenges and Opportunities
- Sixth Five-Year Plan: Strategies for Raising Productivity and Agricultural Growth
- National Agricultural Policy, 2013
- Agricultural Extension Policy and Technology Transfer System in Bangladesh
- National Seed Policy, 1993
- Fertilizer (Management) Act, 2006
- Minor Irrigation Policy
- National Biosafety Guidelines & Rules
- Food Safety Act, 2013
- Plant Quarantine Law
- National Crops and Forest Biotechnology Policy Guidelines
- Bangladesh Climate Change Strategies and Action Plan

After the presentation of each topic, there was a lively discussion. The participants thanked the BARC authority for organizing an event for the scientists working in various NARS institutes. At the end of the training, participants received certificates from Dr. Azad.

Key Messages from the Training Workshop for ICAR Institutional Biosafety Officers

DR. MICHAEL WACH, SENIOR SCIENTIFIC PROGRAM MANAGER, ILSI RESEARCH FOUNDATION CENTER FOR ENVIRONMENTAL RISK ASSESSMENT (CERA)

The Indian Council of Agricultural Research (ICAR) is India's preeminent agricultural research organization and undertakes significant work in agricultural biotechnology where it serves in three important capacities: (1) a developer of genetically modified organisms to meet the agricultural needs of India's farmers; (2) an expert organization that provides scientific expertise to regulatory bodies; and (3) a trusted source to address questions of science and safety that may arise from central or state governments, other stakeholders, and from the public at large. ICAR is organized under the Department of Agricultural Research and Education, Ministry of Agriculture, Government of India. ICAR co-ordinates, guides, and manages research and education in agriculture including horticulture, fisheries and animal sciences throughout India. With 100 ICAR institutes and 71 agricultural universities spread across the country, it is one of the largest national agricultural systems in the world.

ICAR has played a pioneering role in ushering Green Revolution and subsequent developments in agriculture in India through its research and technology development that have made a significant impact on national food and nutritional security. It has also played a major role in promoting excellence in higher education in agriculture. Its internationally recognized scientists are engaged in cutting edge research, and it is a trusted national source of information regarding science and technology. Several ICAR research institutions and scientists conduct research in the development and safety testing of genetically engineered organisms (GEOs) including microorganisms, plants, trees, insects, and animals.

Currently, over 30 ICAR institutes have active research programs using GE plants, covering over 80 species. Because ICAR is committed to compliance with biosafety regulations concerned with GEOs, it has partnered with SABP to initiate a series of biosafety capacity building activities across the institutions for research programs engaged in the development of GE plants. The first major activity is to initiate a pilot program in ten ICAR institutions actively working to develop new GE plants:

- Indian Institute of Vegetable Research
- Indian Institute of Millets Research
- Central Potato Research Institute
- Indian Institute of Pulses Research
- Directorate of Rapeseed Mustard Research
- Indian Institute of Horticultural Research
- National Research Centre of Plant Biotechnology
- Indian Institute of Rice Research
- Indian Institute of Oilseeds Research
- Central Institute for Cotton Research

Two individuals were selected from each of the above facilities to become Institutional Biosafety Officers (IBOs). After their initial training, the IBOs would be working together over the next 18 months to create all the materials necessary for a functioning institutional biosafety program, including standard operating procedures, staff training materials, and processes for facility biosafety audits.

On May 27-28, Dr. Michael Wach, from the ILSI Research Foundation CERA, led a workshop in New Delhi, India, entitled: "Training Workshop for Institutional Biosafety Officers." The workshop was held at the National Academy of Agricultural Sciences complex. There were a total of 18 participants.

The welcoming address was given by Dr. J.S. Sandhu, Deputy Director General (Crop Science). Dr. Sandhu expressed ICAR's commitment to biosafety as a means to ensure that GE plants are safely developed and commercialized. Dr. Vibha Ahuja, BCIL, gave a presentation on the Indian regulatory system for GE plants, and Dr. Wach gave the remaining presentations, focusing on risk assessment and management and the role of IBOs in their institutions. Dr. Wach also gave a presentation on quality assurance in the development of new GE crops and how biosafety plays a key role. There were three group exercises: one on risk assessment and management, one on biosafety process development, and one on the intersection of biosafety and quality assurance. The participants worked together very well and reached the desired outcomes of the exercises.

The last half day of the workshop was spent in a drafting exercise. The participants were divided into groups and asked to develop biosafety SOPs for a series of related lab activities: storage of callus cultures in a growth chamber, transfers of sterile shoots from callus to rooting medium, and potting the rooted plantlets for transfer to the greenhouse. One of the four groups dealt with the various movements of GE plant materials between the above three stages. The exercise resulting in several SOPs that could be put into practice.

Throughout the two days, there was a great deal of discussion regarding the duties of an IBO, including how to convince a researcher to adopt new safety procedures, how to deal with compliance failures, and how to begin to form a professional network of IBOs across the ICAR system. Pursuant to the last topic, the newly fledged ICAR IBO Network web portal was introduced to the group. Dr. Wach discussed planned future additional functionality to the portal (currently the portal houses a biosafety resource library), to include an collaborative environment to develop new SOPs, and a blog-type interface for IBOs to share experiences and ask questions to others across the ICAR system. The web portal will facilitate the IBOs development of the biosafety resources needed for the pilot project.

The Biosafety Research in Pakistan Grants Program: Dr. Naveed's Project Update

The Biosafety Research in Pakistan Grants Program (BRPGP) supports laboratory, field, and literature research that will significantly advance knowledge relevant to environmental risk assessment of genetically engineered plants in Pakistan.

The Biosafety Research in Pakistan Grants Program is managed by the ILS Research Foundation Center for Environmental Risk Assessment (CERA) as part of the biosafety component of the Pakistan Strategy Support Program (PSSP). The PSSP is financially supported by the US Agency for International Development (USAID) through the International Food Policy Research Institute (IFPRI), which manages PSSP. The Biosafety Research in Pakistan Grants Program recognizes the need for biosafety research as part of a broader effort to support science-based decision-making and policy development and will fund research aimed at addressing the effects of agricultural biotechnology, particularly transgenic crops, on the environment and biodiversity in Pakistan.

Grantees come from agricultural or environmental research institutions and universities in Pakistan. All grantees work must:

- Address the effects of genetically engineered (transgenic) crops on the environment.
- Be relevant to Pakistan and take place in Pakistan.
- Demonstrate applicability to environmental risk assessment of transgenic plants and regulatory decision-making in Pakistan.

In this month's SABP newsletter, we will be featuring an update on Dr. Naveed's project.

GRANTEE: Dr. Muhammad Naveed

JOB TITLE: Scientific Officer and Cotton Entomologist

ORGANIZATION: Central Cotton Research Institute Multan

PROJECT TITLE: "*Earias spp.* survival to transgenic *Bt* cotton strains having different protein levels"

PROJECT UPDATE: The use of transgenic cotton in Pakistan is rapidly increasing although many of the varieties are unapproved by regulatory authorities. The expression of the "Cry protein" in *Bt* cotton grown in the country is highly variable. This variability may result in better survival and development of target pests, escaping direct or high doses of the toxin.

A major challenge for planting *Bt* cotton for pest control is the potential for insects to evolve to become resistant to *Bt* toxins. If insect resistance occurs to *Bt* cotton, it would be a catastrophic crisis to 1.3 million cotton farmers in Pakistan in the future.

Research was conducted to correlate the development of the *Earias spp* (*Earias insulana* & *E. vittella*), synonymously known as spotted bollworms, on six transgenic cotton cultivars that contained different levels of the Cry1Ac endotoxin from the soil bacterium *Bacillus thuringiensis* Berliner and three non transgenic cultivars. The spotted bollworm larvae were collected from okra and reared on an okra and artificial diet. Larvae that was forty hours old were exposed to leaves, squares, flowers and small bolls. This exposure was also done at 50-70, 80-100, 110-130, and 150-180 days after seedling emergence.

Cry1Ac expression was 1.36-2.85 µg/g in the upper canopy leaves at 30 days after emergence (DAE) and dropped gradually to <0.12 µg/g at 180 DAE. Correlation between the percentage of mortality and the Cry1Ac toxin in leaves was significant (R^2= 0.723) at an exponential correlation (y= 34.91x + 19.27). The mortality ranged from 10 to 50% at Cry1Ac protein levels of 0.5-10 µg/g, 50 to 70% at 0.65-1.08 µg/g and 90-100% at 1.36-2.85 µg/g. Spotted bollworm larval survival on fruiting parts was >31% on squares and >45% on flowers at 90 DAE.

The implications of variability in the Cry1Ac expression and the seasonal decline on bollworm management were discussed. It is recommended to shift to transgenic cotton simultaneously expressing two or more insecticidal protein with different modes of action.

CALENDAR OF EVENTS

EVENT	ORGANIZED BY	DATE	WEBSITE
INDIA			
Media Workshops on Communicating Science and Biosafety	Indian Institute of Mass Communication (IIMC)	July 22-23, 2015, Ahmedabad July 28-29,2015, Chandigarh	www.iimc.nic.in
2nd World Congress on Biotechnology	Bright International Conferences & Events Organization	June 29-30, 2015 Hyderabad	www.rsc.org/events/detail/17047/2nd-world-congress-on-biotechnology-2015
National Symposium on Germplasm to Genes: Harnessing Biotechnology for Food Security and Health	Society for Plant Biochemistry and Biotechnology, National Research Centre on Plant Biotechnology, and Indian Agricultural Research Institute	August 9-11, 2015 New Delhi	www.nrcpb.org
6th World Congress on Biotechnology	OMICS Group Conferences	October 5-7, 2015 New Delhi	www.biotechnologycongress.com/india/index.php
INTERNATIONAL			
7th Asia Pacific Biotech Congress	Omics International	July 13-15, 2015 Beijing China	www.biotechnologycongress.com/asia-pacific/
3rd Annual South Asia Biosafety Conference	South Asia Biosafety Program (SABP)	September 19-20, 2015 Dhaka, Bangladesh	http://sabc.biotech.co.in
Biosafety Workshop 2015: Scientific and Technical Approaches in GMO Decision-Making	International Centre for Genetic Engineering and Biotechnology (ICGEB) Biosafety Unit	October 19-23, 2015 Trieste, Italy	www.icgeb.org/trieste-biosafety-workshop-2015.html

Interested in contributing to the SABP Newsletter?

The SABP Newsletter, published monthly, is distributed to over 4000 regulators, scientists, policy makers and other stakeholders interested in agricultural biotechnology in South Asia. Each edition includes editorials, information about biosafety regulation and policy developments in India, Bangladesh and Pakistan, SABP and other capacity building activities in the region, and related science or news stories.

All contributions to the newsletter should have a clear connection to the mission of SABP, relate to South Asia and cannot be promotional. For more information or for your article to be considered, please email Libby Williams at lwilliams@ilsi.org.

SOUTH ASIA BIOSAFETY PROGRAM

The South Asia Biosafety Program (SABP) is an international developmental program implemented in India, Bangladesh and Pakistan with support from the United States Agency for International Development. SABP aims to work with national governmental agencies and other public sector partners 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.

USAID FROM THE AMERICAN PEOPLE

Center for Environmental Risk Assessment

IFPRI

CONTACT SABP

BANGLADESH
Prof. Dr. M. Imdadul Hoque
Department of Botany
University of Dhaka
Dhaka - 1000
Bangladesh
Email: mimdadul07@yahoo.com

INDIA
Dr. Vibha Ahuja
Chief General Manager
Biotech Consortium India Limited
Anuvrat Bhawan, 5th Floor
210, Deendayal Upadhyaya Marg
New Delhi 110 002 India
Email: vibhaahuja.bcil@nic.in

PAKISTAN
Dr. Anwar Nasim, S.I.
President
Pakistan Academy of Sciences
3-Constitution Avenue, G-5/2
Islamabad, Pakistan
Email: dranwarnasim@gmail.com

OTHERS
Mrs. Libby Williams
Communications and Program Specialist
Center for Environmental Risk Assessment
ILSI Research Foundation
1156 Fifteenth Street N.W., Suite 200
Washington, D.C. 20005-1743 USA
Email: lwilliams@ilsi.org
Twitter: @CERA_ILSI

To receive an electronic copy of this newsletter send your name, institutional information and e-mail address to: vibhaahuja.bcil@nic.in

Registration Form
3rd Annual South Asia Biosafety Conference

September 19-20, 2015

BRAC Centre Inn, Dhaka, Bangladesh

BCIL

SOUTH ASIA BIOSAFETY PROGRAM

Registrations are limited to 100 for the conference. Registrants that cannot be accommodated will be added to a waitlist, and notified if space becomes available.

Attach mailing label from brochure,

or your business card.

Name Preferred on Badge _____

Complete the following if the information on the mailing label is incorrect or no label is provided.

Registrant is:

Gender ☐ Male ☐ Female

Title ☐ Mr. ☐ Mrs. ☐ Ms. ☐ Dr.

First Name _____

Middle Initial _____

Last/Surname _____

Job Title _____

Employer/Company/Institution _____

_____

Address _____

Street _____

City _____

State/Province _____

Zip/Postal Code _____

Country _____

Telephone _____

Facsimile _____

E-mail _____

Registration*

Category	Fee	
	INR	US$
Industry	Rs. 5,000/-	$85
Research Institution Universities Individual experts	Rs. 3,000/-	$50
Students	Rs. 2,000/-	$35
BCIL Biotech Club Members	25% discount	
Additional delegates from same organization (except students)	25% discount	
Government departments and ministries	No fee up to two nominations and Rs. 2,000/- each for additional nomination	

*In case you face difficulty in online registration, please download the registration form and send it to us along with payment through bank transfer. The details for Bank Transfer are as follows:

Beneficiary Name: Biotech Consortium India Limited

Account Number : 00032320008527

IFSC Code : HDFC0000003 (HDFC Bank Limited)

Cancellation/Refund Policy

Registration cancellations must be made in writing and received by BCIL no later than September 1, 2015. Cancellations received by this date are subject to a 20% processing fee. Registration and ticketed event cancellations received after September 1, 2015, are NOT subject to a refund.

Registration forms should be sent to:

Dr. Vibha Ahuja, Chief General Manager

Biotech Consortium India Limited (BCIL)

Anuvrat Bhawan, 5th Floor

210, Deen Dayal Upadhyaya Marg

New Delhi - 110 002

Telephone Number +91-11-23219064-67 (Ext. 204; 205); 23219059(D)

Fax Number +91-11-23219063

Email: vibhaahuja@biotech.co.in; vibhaahuja.bcil@nic.in

Poster Program Abstract Submission Form
3rd Annual South Asia Biosafety Conference

September 19-20, 2015
BRAC Centre Inn, Dhaka, Bangladesh

THE 3RD ANNUAL SOUTH ASIA BIOSAFETY CONFERENCE POSTER PROGRAM is a new opportunity for individuals to share their research, findings and achievements with colleagues at the conference. Presenting a poster is a noteworthy way to share expertise or accomplishment, and poster presenters will have a dedicated time to present and discuss their work with the diverse group of attendees.

All poster abstracts must convey relevance to biosafety research, risk assessment, or regulation of genetically modified organisms (including programs or activities to improve capacity and knowledge generation).

The following are some suggestions about poster abstracts that will contribute to ensuring the readability and quality of the submission. Abstracts of accepted posters will be included as part of the conference onsite program and will be published as submitted, without content editing.

- Check for proper spelling and grammar.
- Use a standard typeface such as Times Roman with a font size of 12.
- Begin sentences with words (not numbers).
- Standard abbreviations may be used without definition, but nonstandard abbreviations/acronyms should be placed in parentheses after the first use of the terminology. It is important to keep nonstandard abbreviations/acronyms to a minimum, to allow for readability and understanding.
- Do not include tables, figures, or graphs in the abstract. Such content is appropriate for the poster.
- Limit the abstract to 300 words.
- Try to organize the abstract with the following headings where appropriate: purpose, methods, results, conclusions (e.g., for research projects) OR purpose, description, evaluation and outcomes (e.g., for capacity building projects).

Space is limited. Posters will be considered on a first come, first served basis, based on the relevance to the program.

ABSTRACT SUBMISSION FORM FOR POSTER PROGRAM

PLEASE COMPLETE THE FORM BELOW AND E-MAIL IT TO lwilliams@ilsi.org AND COPIED TO vibhaahuja.bcil@nic.in.

You will receive a return email acknowledging receipt of your abstract and subsequently a second email informing you if your poster has been accepted for the conference poster program.

I. Lead Presenter

First Name: _____

Last Name: _____

Institution and Address: _____

E-mail: _____

Telephone Number: _____

(NOTE: Poster Presenters must register for the 3rd Annual South Asia Biosafety Conference. If an abstract is received from an author who is not registered, the abstract will NOT be included in the review process).

II. Poster Title: _____

Poster Authors: _____

(NOTE: list all poster authors including their name, organization, address and e-mail. Separate authors with a semi-colon and please INCLUDE the lead presenter also).

III. Poster Abstract (maximum 300 words)

_____ _____

_____ _____