

# South Asia Biosafety Program

**NEWSLETTER** for private circulation only – not for sale



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## INDIA

### University of Delhi Transfers Technology for *Bt* Cotton to Punjab Agriculture University



Exchange of MoU for transfer of transgenic seeds between Professor Deepak Pental, Director, Centre for Genetic Manipulation of Crop Plants, University of Delhi South Campus, New Delhi and Dr. B.S. Dhillon, Vice Chancellor, Punjab Agriculture University, Ludhiana

The Centre for Genetic Manipulation of Crop Plants and the Department of Genetics, University of Delhi South Campus, have developed and fully characterized a cotton transgenic which contains the *cry1Ac* gene of *Bacillus thuringiensis* (*Bt*). The event named Tg2E-13 contains a single insertion of the transgene and shows high expression of the Cry protein throughout the life cycle of the plant as compared to all the current events being grown in the field. Tg2E-13 has been developed in a Coker 310FR background and has been analyzed for six years. It is now available as a homozygous line in a Coker 310 background. The *cry1Ac* gene used in the construct has six amino acid differences from the *cry1Ab-cry1Ac* hybrid gene used extensively in India. After analysis of a few transgenic events over four to five generations, Tg2E-13 has been selected as an event with a high expression of *cry1Ac* gene and no abnormalities.

Seeds of the event homozygous for the transgene have been transferred to the Punjab Agricultural University (PAU) on May 8, 2015. The transgenic line will be used to transfer the *cry1Ac* gene into high yielding lines and hybrids developed by the PAU through sexual crosses. The Indian Council of Agricultural Research has also shown interest in distributing the seeds of this line to its constituent institutes for diversification into public sector varieties which are well adapted to diverse growing conditions of the three different cotton growing areas of India. The event can be used in breeding programs by different institutions and universities to develop varieties that are specifically adapted to different agroclimatic regions in which cotton is grown in India.

The project on the development of *Bt* cotton was funded by the Department of Biotechnology, Government of India. It is hoped that this event will make public funded research on cotton breeding more meaningful and the seed will be made available to the farmers at a much lower cost than possible today.

## REGISTER TODAY

**3<sup>rd</sup> Annual South Asia Biosafety Conference**  
**September 19-20, 2015 in Dhaka, Bangladesh**

For more information, please see pages 5-6.

## Lessons Learned from the Meeting on the Current Status of GMO Approvals

A meeting on the current status of genetically modified organisms (GMOs) in India was recently held on April 28, 2015, in Hyderabad. The meeting was attended by scientists from research institutions, universities and the seed industry.

Dr. B. Sesikeran, Chairman, Review Committee on Genetic Manipulation (RCGM) and leading expert in nutrition, informed participants that food derived from GMOs is safe and has already been consumed by millions over the last ten years. Dr. P. Ananda Kumar, Director, Institute of Biotechnology, Acharya N.G. Ranga Agricultural University, emphasized the need to approve new GMO crops as regulatory trials have already been completed. Dr. Shivendra Bajaj, Executive Director of Association of Biotech Led Enterprises-Agriculture Focus Group (ABLE-AG), highlighted the potential benefit of biotechnology for other crops.

During the meeting, it was suggested that as the country faces an agrarian crisis, it is necessary that we empower our farmers with the best technology available in the world. Many of India's neighboring countries, such as Bangladesh, Pakistan, Vietnam, China and the Philippines, have started growing GMOs or have made significant



progress in getting ready to approve several GMOs in their country. Large agricultural based countries, such as Argentina, Australia, Brazil, Canada and the United States, have already moved to growing GMOs. These countries currently grow close to 80% of corn, cotton, soybean and canola as GMO crops. The European Union, which has been resisting such a move, has also recently changed its stand and permitted member countries the freedom to grow GMOs. Currently, India has only allowed commercial cultivation of cotton. There is an urgent need to move forward, as many Indian scientists and industry have products in the pipeline.

This April event was facilitated by Amar Immunodiagnostics, who also spoke about their indigenously developed rapid test kit to detect presence of three different genes in cotton plants in less than five minutes.



## 51<sup>st</sup> Founder Memorial Lecture Delivered by Professor Padmanaban

Professor Govindarajan Padmanaban, FNA, former Director and Honorary Professor of the Indian Institute of Science Bangalore, delivered a lecture on the growth of biotechnology in India on April 23, 2015, in New Delhi. This was the 51<sup>st</sup> Founder Memorial Lecture of the Shri Ram Institute for Industrial Research.

During his speech about the developments in biotechnology, Professor Padmanaban mentioned that the biotechnology sector has grown in India with significant involvement of the government through the Department of Biotechnology (DBT). He spoke about various initiatives taken on by DBT in promoting research and development, including setting up new institutions, developing human resources and fostering public-private partnerships.

Specific to the agricultural biotechnology sector, he mentioned that India has developed quality protein maize using marker assisted selection (MAS). Rice resistant to bacterial blight has also been developed using MAS.

Currently, Bt cotton is the only transgenic crop that has successfully been cultivated in India. It has converted India from a cotton importing country to a cotton exporting nation. Despite activism against genetically modified (GM) crops, there is evidence that Bt cotton has substantially benefited Indian farmers.

Professor Padmanaban indicated that it is important for India to vigorously pursue technology to increase productivity in agriculture. India will soon exceed China in population. He informed the audience that the biotechnology industry is growing at 20%, with revenues over 4 billion US dollars currently in India. It has been projected that India should be aiming for a turnover of 100 billion USD in the next 10 years. It is necessary to choose the best technology option based on the crop, trait, sustainability and affordability. Professor Padmanaban suggested using MAS, GM or a combination of strategies such as the use of crop rotation, organic and non-pesticide use technologies in the future.

## Highlights from the Video Conference Lecture on New Plant Breeding Techniques

ADNAN BASHIR, IT COORDINATOR, PAKISTAN ACADEMY OF SCIENCES, ISLAMABAD

Through the Biosafety Research in Pakistan Grants Program (BRPGP), Dr. Anwar Nasim, President, Pakistan Academy of Sciences and Dr. Andrew Roberts, Director, ILSI Research Foundation Center for Environmental Risk Assessment (CERA), have initiated a video conference lecture series. The main objective of the series is to educate scientists in Pakistan about recent developments in the regulatory procedures and biosafety aspects of transgenic crops.

The second video conference lecture was held on April 30, 2015. The topic of the lecture was new plant breeding techniques. The lecture was delivered by Dr. Boet Glandorf from the National Institute of Public Health and the Environment, Netherlands. Dr. Glandorf is a senior risk assessor and has hands on experience with accessing applications of

genetically modified (GM) plants on an international level.

The audience included grantees from several major cities of Pakistan, scientists, representatives of research and development institutes, researchers, and young scholars. More than 15 locations from Islamabad, Lahore, Faisalabad and Multan, were remotely connected through the video conference. A large group of more than 20 scientists gathered at the Central Cotton Research Institute Multan in order to listen to the lecture together.

During the lecture, Dr. Glandorf discussed the recent developments with plant breeding and genetic modification techniques. She informed the audience that an expert working group was established in 2007

*Continued on page 3*



by 21 member states. The main purpose of the working group was to discuss the regulatory status of techniques under genetically modified organism (GMO) regulation in Europe.

Dr. Glandorf then described the plant breeding techniques discussed in the expert working group, including zinc finger nuclease technology, oligonucleotide-directed mutagenesis, cisgenesis/intragenesis, RNA-dependent DNA methylation, grafting, reverse breeding and agro-infiltration. She explained the pros and cons of each technique in detail. She also explained that the working group report was submitted to the

Competent Authority of the member states in 2012. The report was also shared with the Joint Research Center, a scientific institute in Europe which performed the study of economic impact of these techniques on industry.

In the end, the discussion mainly focused on the use of plant breeding techniques in developing countries and the cost for equipment.

To access the lecture from this event, please visit:

<http://youtu.be/4QJCWvJyTk>

## BANGLADESH

### Key Messages from the Training Program on the Biosafety Measures of Transgenic Crops

DR. MD. AZIZ ZILANI CHOWDHURY, MEMBER-DIRECTOR (CROPS), BANGLADESH AGRICULTURAL RESEARCH COUNCIL (BARC), DHAKA



On March 30-31, 2015, a two-day training program on the biosafety measures of transgenic crops was organized by the Crops Division of the Bangladesh Agricultural Research Council (BARC). The objectives of this training were to develop skills and awareness on biosafety measures as well as to identify the constraints in biotechnology crop research. Dr. Abul Kalam Azad, Executive Chairman, BARC, inaugurated the training as the Chief Guest and Dr. Paresh Chandra Golder, Member-Director (Planning and Evaluation), BARC, was present in the inaugural ceremony as the Special Guest. Dr. Md. Aziz Zilani Chowdhury, Member-Director (Crops), BARC, presided over the inaugural ceremony. Dr. Md. Abdus Salam, Principal Scientific Officer (Crops), BARC, delivered the welcome address. Approximately 40 participants from the 10 National Agricultural Research System (NARS) Institutes, 5 public universities and 4 private sector representatives attended the workshop.

In his opening speech, Dr. Kalam Azad emphasized the proper implementation of biosafety measures in transgenic crop research and development. He said that it is a new area for us and to face the challenges, we need to strengthen biotech crop research. Dr. Md. Aziz Zilani Chowdhury stressed on genetically modified crop development for food and nutritional security. The Chairperson mentioned that we have so many problems but our resources are limited. First, we need to prioritize the problems and then develop a road map for implementation. He also noted that for biotech research there are specific rules and regulations we need to follow.

During the two technical sessions, eight papers on biosafety measures were presented. Resource persons were selected from the NARS Institutes, Department of Environment (DoE) and from the universities.



Dr. Md. Aziz Zilani Chowdhury gave an overview on the global perspectives of transgenic crops. Dr. Md. Abdullah Yousuf Akhond, PSO, Biotechnology Division, BARI, presented his paper on different techniques of plant genetic transformation. Dr. Partho Sharothi Biswas, PSO, Plant Breeding Division, BRRI, presented two papers on contained and confined field trials of genetically modified crops as well as field monitoring and management. Dr. Md. Khalequzzaman A. Chowdhury, Former Member Director (Crops), BARC, highlighted the elements of biosafety rules and guidelines of Bangladesh. Prof. Dr. M. Imdadul Hoque, Dean, Faculty of Biological Sciences and Bangladesh Country Coordinator of the South Asia Biosafety Program (SABP), gave a presentation on risk assessment of genetically modified crops. Mr. Mohammed Solaiman Haider, Deputy Director, DoE & Member Secretary, Biosafety Core Committee (BCC), described the development of biosafety regimes in Bangladesh as well as the international obligations on biosafety related issues. The last presentation was given by Dr. Md. Al-Amin, Former CSO, Biotechnology Division, BARI. He presented his paper on the journey to *Bt* brinjal commercialization in Bangladesh.

During the closing ceremony, there was a lively discussion with questions and answers. Most of the participants from the NARS Institutes as well as from the public and private universities expressed that through this training they received a lot of information on the development of agricultural biotech and biosafety in the country as well as globally. They proposed to hold training courses more frequently so that more awareness may be created among the scientists, researchers and academics.



EVENT	ORGANIZED BY	DATE	WEBSITE
<b>INDIA</b>			
Media Workshops on Communicating Science and Biosafety	Indian Institute of Mass Communication (IIMC)	May 22-23, 2015, Bhopal June 2-3, 2015, New Delhi July 22-23, 2015, Ahmedabad	<a href="http://www.iimc.nic.in">www.iimc.nic.in</a>
Short Course on "Emerging Trends in Hybrid Vegetable Seed Production for Temperate Regions"	Indian Agricultural Research Institute	May 21-30, 2015 Kullu, Himachal Pradesh	<a href="http://www.iari.res.in/files/Latest-News/Training_Katrain-23042015.pdf">http://www.iari.res.in/files/Latest-News/Training_Katrain-23042015.pdf</a>
Training Workshop on Monitoring Confined Field Trials for Regulatory Compliance	Ministry of Environment, Forest and Climate Change, Government of India	May 25-26, 2015, New Delhi June 3-4, 2015, Hyderabad	
2 <sup>nd</sup> World Congress on Biotechnology	Bright International Conferences & Events Organization	June 29-30, 2015 Hyderabad	<a href="http://www.rsc.org/events/detail/17047/2nd-world-congress-on-biotechnology-2015">www.rsc.org/events/detail/17047/2nd-world-congress-on-biotechnology-2015</a>
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	<a href="http://www.nrcpb.org">www.nrcpb.org</a>
6 <sup>th</sup> World Congress on Biotechnology	OMICS Group Conferences	October 5-7, 2015 New Delhi	<a href="http://www.biotechnologycongress.com/india/index.php">www.biotechnologycongress.com/india/index.php</a>
<b>INTERNATIONAL</b>			
IOSBC/WPRS Group "GMOs in Integrated Plant Production"	Agroscope	June 1-3, 2015 Sofia, Bulgaria	<a href="http://www.eigmo.info/content/home">www.eigmo.info/content/home</a>
7 <sup>th</sup> Asia Pacific Biotech Congress	Omics International	July 13-15, 2015 Beijing China	<a href="http://www.biotechnologycongress.com/asia-pacific/">www.biotechnologycongress.com/asia-pacific/</a>
3 <sup>rd</sup> Annual South Asia Biosafety Conference	South Asia Biosafety Program (SABP)	September 19-20, 2015 Dhaka, Bangladesh	<a href="http://www.cera-gmc.org/Upcoming_Meetings_&amp;_Events">www.cera-gmc.org/Upcoming_Meetings_&amp;_Events</a>



**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.



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



# Registration Form

## 3<sup>rd</sup> Annual South Asia Biosafety Conference

September 19-20, 2015

BRAC Centre Inn, Dhaka, Bangladesh



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

## 3<sup>rd</sup> Annual South Asia Biosafety Conference

September 19-20, 2015

BRAC Centre Inn, Dhaka, Bangladesh

**THE 3<sup>RD</sup> 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 [lwiliams@ilsa.org](mailto:lwiliams@ilsa.org) AND COPIED TO [vibhaahuja.bcil@nic.in](mailto: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 3<sup>rd</sup> 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)

\_\_\_\_\_  
\_\_\_\_\_