



SOUTH ASIA
BIOSAFETY PROGRAM

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NEWSLETTER

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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.

ENVIRONMENTAL RISK ASSESSMENT WORKSHOP: NON-TARGET ORGANISM TESTING OF GM CROPS

Dr. Zeba I. Seraj, workshop participant and regulator from Bangladesh

A technical training environmental risk assessment (ERA) workshop on non-target organism testing of transgenic crops was conducted June 24 - 28, 2013 in Ames, Iowa, USA. Organized by the Center for Environmental Risk Assessment (CERA), in cooperation with the Corn Insects and Crop Genetics Research Unit of the Agricultural Research Service, United States Department of Agriculture and DuPont Pioneer the workshop's purpose was to provide regulatory scientists and environmental risk assessors a practical sense of laboratory and field testing of the effects of GM crops and specific insecticidal toxins on non-target organisms (NTOs). Previous efforts to build technical capacity in assessing the potentially adverse environmental impacts of transgenic plants were lecture-based and did not provide actual experience in tiered testing of NTOs. Scientists involved in studying the regulation of GM crops have long felt that hands-on training is necessary to complement and reinforce conceptual understanding of the environmental risk to NTOs.

Conducting laboratory experiments on GM and non-GM leaf feeding assay for the target insect, European Corn Borer, was not only a good learning experience but enjoyable too. Many of the participants, some of whom are regulators, had never worked with insects before. The death of the target insect on the GM leaf and its vigorous growth on the non-GM control was interesting to monitor. Likewise it was good to actually observe that the non-target insect, Ladybird Beetle or *C. Maculata*, survived feeding on an artificial diet containing the same toxin

We had a very pleasant time visiting the GM corn field twice, once to set up the pitfall traps for ground dwelling and mobile arthropods as well as sticky traps for flying insects and then again to collect them. The caps and boots we had with us turned out to be handy but the latter proved difficult to clean afterwards. But our organizers had the foresight to arrange for polythene shoe covers, which were even more convenient! We managed to collect an unexpectedly large number of arthropods and insects and found no difference in their quality or quantity when comparing GM fields with non-GM fields. The experience of actually being able to collect a large number of insects and arthropods in a GM field made us fully realize how specific Bt toxins are to their targeted insects and gave us confidence as regulators.

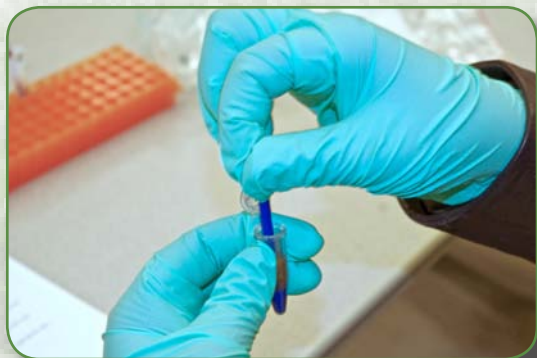
The lectures were very informative and topics ranged from conduction of bioassays, field techniques, suitable test organisms, tiered testing of NTOs and problem formulation for ERA. Speakers included Dr. Jorg Romeis from Agroscope, in Zurich, Switzerland; Dr. Richard Hellmich from the Corn Insects and Crops Genetics Research Unit, and Dr. Royce Bitzer, both from the Department of Entomology at Iowa State University (ISU). From DuPont Pioneer, the speakers were Drs. Ray Layton, Chad Boeckman and Nick Schmidt. From CERA, we heard from Drs. Michael Wach and Andrew Roberts.



In addition to the lectures, labs and field work, participants reviewed a variety of proprietary studies submitted as part of regulatory dossiers and were asked to identify key information related to the risk assessment as well as to assess the quality of the studies, identifying strengths and weaknesses. This was both a useful and successful activity as evidenced by the participants' post exercise presentations.

One of the most important lessons for the regulators attending the workshop was the concept of *problem formulation in the context of ERA and non-target organism assessment*, which was elegantly explained by the Deputy Director of CERA, Dr. Andrew Roberts and is summarized below:

(continued on page 2 - see ERA)



ERA - continued from page 1

1. What are we trying to protect in the environment and why are we trying to protect it?
2. Do we have enough information on the likely impacts of GM crops on NTOs?
3. If not, what sort of experiments will be most informative in obtaining the information we need, keeping in mind the limitations of NTO studies?

Among those attending were scientists and regulators from East Africa, including Kenya, Tanzania and Uganda as well as scientists from South American countries including Argentina, Paraguay and Uruguay. Asian scientists from Vietnam in addition to myself from Bangladesh were also

in attendance.

We also visited the DuPont Pioneer laboratories in Ames where we learned about their research on drought tolerant hybrid corn, their use of DNA markers to ensure the best characteristics in corn (non-GM work); their use of robotics to examine their transgenic events, which may run into thousands of plants/day.

Ames is a beautiful little university town. One of the main attractions is the ISU Reiman Gardens, where we enjoyed a lovely dinner on one of the evenings.

This write-up would not be complete without mentioning Stephanie Carter of CERA, whose organizational skills ensured the smooth as silk functioning of the workshop.

South Asia Biosafety Conference

Please Register Now

September 18 - 20, 2013

Taj Ambassador Hotel, Sujan Singh Park, Subramania Bharti Marg, New Delhi - 110 003

Download the registration form at: <http://cera-gmc.org/index.php?action=news&id=245>

Co-organized by: South Asia Biosafety Program · Biotech Consortium India Limited · Bangladesh Academy of Sciences



SOUTH ASIA
BIOSAFETY PROGRAM

The South Asia Biosafety Program, in cooperation with BCIL and the Bangladesh Academy of Sciences, is pleased to invite registration for the **South Asia Biosafety Conference**. For more information, please contact Dr. Vibha Ahuja, Chief General Manager, BCIL at vibhaahuja@biotech.co.in.

SOUTH ASIA BIOSAFETY CONFERENCE AGENDA

Taj Ambassador Hotel, Sujan Singh Park, Subramania Bharti Marg, New Delhi - 110 003

SEPTEMBER 18, 2013

Session I: Challenges to the Development and Regulation of Genetically Engineered Plants in South Asia

Biosafety Regulation of GE Plants in Bhutan	Mr. Karma Dorji, <i>Bhutan Agriculture & Food Regulatory Authority</i>
A Status Update on Biosafety Regulation in Sri Lanka	Dr. Sirimali Fernando, <i>National Science Foundation, Sri Lanka</i>
GE Plant Regulation in Pakistan	Dr. Anwar Nasim, <i>Pakistan Academy of Sciences</i>
Advances in the Bangladesh Biosafety Regulatory System	Mr. M. Solaiman Haider, <i>Department of Environment</i>
An Update on Biotechnology Regulation in India	Dr. S.R. Rao, <i>Department of Biotechnology, India</i> Dr. Ranjini Warriar, <i>Ministry of Environment and Forests, India</i>

Session II: Regulation of Genetically Engineered Plants in the Context of Biodiversity, Phytosanitary and Food/Feed Safety Laws

Biosecurity as a Unifying Theme for Agriculture and Food Production	Dr. Peter Kearns, <i>OECD, Paris</i>
Weed Risk Assessment and GE Plant Risk Assessment	Dr. Michael Dornbusch, <i>OGTR, Australia</i>
Lessons Learned from Risk Assessment of Biological Control Organisms	Dr. Barbara Barratt, <i>AgResearch, New Zealand</i>
The Intersection of Biodiversity and Biosecurity	Dr. Alex Owusu-Biney, <i>UNEP, Kenya</i>
Panel Discussion and Q&A	

SEPTEMBER 19, 2013

Session III: New Plant Breeding Techniques and Biosafety Risk Assessment

Cisgenics, Intragenics and Site-specific Mutagenesis	Dr. Akhilesh Tyagi, <i>National Institute of Plant Genome Research, India</i>
Zinc Finger Nucleases and Transcription Factors	TBA
"Planting the Future: Opportunities and Challenges for using Crop Genetic Improvement Technologies for Sustainable Agriculture" – a Report from the European Academies Science Advisory Council	Dr. Ervin Balazs, <i>Hungarian Academy of Sciences</i>
Considerations of New Breeding Techniques for Risk Assessment and Regulation in Australia	Dr. Michael Dornbusch, <i>OGTR, Australia</i>
New Breeding Techniques and GE Plant Regulation in the United States	Dr. Andrew Roberts, <i>CERA</i>

Session IV: Post-Approval Considerations for the Commercial Release of Genetically Engineered Organisms

Considerations for the Commercialization of Embrapa's Virus Resistant Common Bean	Dr. Thiago Souza, <i>Embrapa Rice & Beans, Brazil</i>
Bringing Golden Rice to Market in South Asia	Dr. Eric Reynoso, <i>IRRI, the Philippines</i>
The Commercialization of Transgenic Mosquito for Dengue Control	Dr. Aldo Malavasi, <i>Moscamed, Brazil</i>
GM Crops and Integrated Pest Management	Dr. Franz Bigler, <i>Agroscope ART, Switzerland</i>
Perspectives on Coexistence of Agricultural Production Systems	TBA
Open floor for questions	

SEPTEMBER 20, 2013

Workshop I: The Scientist as Public Communicator

Chair: Dr. G. Padmanabhan*, *Indian Institute of Science* **Moderator:** Dr. Andrew Roberts, *CERA, USA*

Keynote Presentation: "The Scientist as Public Communicator"	Dr. Kevin Folta*, <i>U. Florida, USA</i>
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Remarks by Discussants:

- Dr. Deepak Pental, *University of South Delhi*
- Dr. Aldo Malavasi, *Moscamed, Brazil*
- Shri Satnam Singh Behru*, *Consortium of Indian Farmers' Association*
- Mr. Harish Damodaran*, *Business Line*

Panel discussion and questions from the floor

Workshop II: Understanding Test Protocols - Design, Reporting and Data Interpretation

Data Quality	Dr. Michael Dornbusch, <i>OGTR, Australia</i>
Acute Mammalian Toxicity Testing	Dr. Laura Privalle, <i>Bayer, USA</i>
Feeding Studies	TBA
Ecotoxicology Studies to Evaluate Adverse Impacts on Non-target Organisms I. Tiered Testing II. Study Design and Interpretation	Dr. Joseph Huesing, <i>USAID, USA</i>
Data Analysis and Interpretation for Biosafety Risk Assessment	Dr. Chad Boeckman, <i>DuPont Pioneer, USA</i>
Extended Q&A	

*Invited but not yet confirmed.

CALENDAR OF EVENTS

Event	Organized by	Date and Venue	Website
INDIA			
The Borlaug Global Rust Initiative (BGRI) 2013 Technical Workshop	Indian Council for Agricultural Research (ICAR) and the BGRI South Asia Center	August 19 - 22, 2013 New Delhi	http://www.globalrust.org/traction/permalink/newdelhi17
Interactive Session on Meeting the Challenge of Food Security with Biotechnology by Mark Lynas	Cornell University and Sathguru Management Consultants	August 19, 2013 New Delhi	
SUGAR TECH 2013 - "Improving Recoveries in Sugar Industry - Opportunities & Challenges"	Confederation of Indian Industry (CII) and Indian Institute of Sugarcane Research, Lucknow	August 24, 2013 Lucknow	http://www.cii.in/Events.aspx?enc=fSTC8XiYaIuWcrOJ/n1U2Q==
Vibrant Gujarat Global Agriculture Summit	Confederation of Indian Industry (CII)	September 9 - 10, 2013 Gandhinagar, Gujarat	http://www.cii.in/Events.aspx?enc=fSTC8XiYaIuWcrOJ/n1U2Q==
TERI-ITEC Courses 2013-14 - Course I - <i>Applications of Biotechnology and its Regulation</i>	The Energy and Resources Institute (TERI)	September 9 - 28 , 2013 RETREAT, Gual Pahari, Gurgaon	http://www.teriin.org/index.php?option=com_events&task=details&sid=582
ICAR Sponsored Summer School on New Horizons in Biotic Stress Management in Rice under Changing Climate Scenario	Central Rice Research Institute	September 10 - 30, 2013 Cuttack	http://www.crrri.nic.in/Summer%20School%20Brochure_CRRRI%202013.pdf
Advanced Training Course on Climatic Change and Abiotic Stresses	Department of Crop Physiology N.D. University of Agriculture & Technology	September 12 - October 1, 2013	
South Asia Biosafety Conference	South Asia Biosafety Program (SABP), Biotech Consortium India Limited (BCIL) and Bangladesh Academy of Sciences	September 18 - 20, 2013 New Delhi	http://cera-gmc.org/index.php?action=news&id=245
Seed Industry Program: Traits - Market - Growth - Leadership	Cornell University and Sathguru Management Consultants	October 7 - 10, 2013 Hyderabad	http://www.sathguru.com/seeds/
International Conference on Biotechnology (IICB-2013)	University School of Biotechnology, Guru Gobind Singh Indraprastha University	October 22 - 25, 2013 New Delhi	
National Seminar on Technology for Development and Production of Rainfed Cotton and Farmers' Day	Navsari Agricultural University	October 24 - 26, 2013, Bharuch, Gujarat	http://www.nau.in/announce.php?id=11897
INTERNATIONAL			
2013 International Conference on Food and Agricultural Sciences (ICFAS 2013)	International Proceedings of Chemical, Biological and Environmental Engineering, Singapore (IPCBE)	October 5 - 6, 2013, Melaka, Malaysia	http://www.icfas.org/index.htm
3rd ABSANZ Biosafety Conference	International Federation of Biosafety Associations	October 29 - November 1, 2013 Auckland, New Zealand	http://www.absanz.org.au/Conference%202013.html

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