

BIO SAFETY



जहाँ है हरियाली।
वहाँ है खुशहाली।

A Quarterly
Newsletter

Newsletter

From the Desk of Editor



I have been informing you about the upcoming eleventh meeting of the Conference of the Parties to the Convention on Biological Diversity and sixth meeting of the Conference of Parties serving as the Meeting of the Parties to the Cartagena Protocol (COP11-MOP6) to be held on October 1-19, 2012 at Hyderabad. The mega event held every two years consists of a conference with associated side events and an exhibition to provide an opportunity for Governments and other organizations to showcase their activities. I have personally written to the concerned ministries, research institutions, universities, industry, NGOs etc. to use this opportunity for participation and sharing the initiatives taken by them with more than 15,000 participants from over 100 countries. I once again invite all of you to submit your proposals for organizing or hosting any side events, exhibits etc. For details please access <http://cbdco11india.in/home.html>.

I am also pleased to inform you that the Phase-II Capacity Building Project on Biosafety supported by UNEP/GEF shall be shortly launched. The inception workshop for the project is scheduled to be organized from June 18-22, 2012. I hope that the activities undertaken under this project shall help in bridging the gaps towards effective implementation of the Cartagena Protocol on Biosafety in India and providing opportunities for stakeholder participation.

Hem Pande

Joint Secretary

Ministry of Environment and Forests

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Inception Workshop

The inception workshop to launch Phase-II Capacity Building Project on Biosafety supported by UNEP/GEF scheduled on June 18-22, 2012 at New Delhi.



India is hosting the sixth meeting of the Conference of the Parties serving as the Meeting of the Parties to the Cartagena Protocol on Biosafety (COP-MOP 6) from 1-5 October 2012, in Hyderabad. The provisional agenda includes: report of the compliance committee; operation and activities of the Biosafety Clearing-House; matters related to the financial mechanism and resources; cooperation with other organizations, conventions and initiatives; and report of the Executive Secretary. Substantive issues arising from the Programme of Work and past COP-MOP decisions include: handling packaging and identification of living modified organisms (LMOs); notification requirements; liability and redress; unintentional transboundary movements and emergency measures; risk assessment and risk management; socio-economic considerations; monitoring and reporting; and assessment and review.



Convention on
Biological Diversity

COP MOP: The Governing Body of the Cartagena Protocol on Biosafety (CPB)

The Conference of the Parties to the Convention serving as the meeting of the Parties to the Protocol (COP-MOP) is the governing body of the Protocol. The main function of this body is to review the implementation of the Protocol and make decisions necessary to promote its effective operation. Decisions under the Protocol can only be taken by Parties to the Protocol. Parties to the Convention that are not Parties to the Protocol may only participate as observers in the proceedings of meetings of the COP-MOP.

As per Article 29, the COP-MOP performs the functions assigned to it by the Cartagena Protocol on Biosafety as indicated below:

- a. Makes recommendations on any matters necessary for the implementation of this Protocol;
- b. Establishes subsidiary bodies as are deemed necessary for the implementation of this Protocol;
- c. Seeks and appropriately utilizes the services and information provided by, competent international organizations and intergovernmental and non-governmental bodies;
- d. Establishes the form and the intervals for transmitting the information to be submitted in accordance with Article 33 of this Protocol and consider such information as well as reports submitted by any subsidiary body;
- e. Considers and adopts, as required, amendments to this Protocol and its annexes, as well as any additional annexes to this Protocol, that are deemed necessary for the implementation of this Protocol; and
- f. Exercise such other functions as may be required for the implementation of this Protocol.

Opportunities for Side Events and Exhibits for COP11-MOP6



The sixth meeting of the Conference of Parties (COP) serving as the Meeting of the Parties (MOP) to the Cartagena Protocol on Biosafety and the eleventh meeting of the COP to CBD will be held in Hyderabad from 1 to 5 October and 8 to 19 October 2012, respectively, and the high-level segment will be held from 17 to 19 October 2012. The meetings will be spread over to various sessions and will have variety of formats, ranging from opening and closing plenary sessions, working groups, contact groups, workshops, discussions, keynote speeches, multimedia presentations, public lectures, debates, hands-on experiences etc.

Some of these will run parallelly. In addition, the programme would also have cultural evenings/ social programmes followed by dinner on selected conference days.

An international exhibition would be organized on the sidelines of the conference venue itself or in an adjacent venue (within a radius of one kilometer) to provide an opportunity for Governments and a variety of organizations to showcase their initiatives on biodiversity and biosafety. The Conference will have the participation of more than 10000 delegates from more than 150 countries, including several Ministers for high level segment, UN, bilateral, multilateral agencies, private sector, financial institutions, academia, civil society organizations and others.

Realizing the importance of this platform in terms of gaining knowledgebase and exchanging the information mutually among various participants across the globe, MoEF is encouraging stake holders to hold side-events, exhibitions and presentations to showcase the technologies during the COP-MOP 6. Thereby, various stakeholders from governments, inter-governmental, nongovernmental, regional and international organizations, who may wish to present a poster, hold an exhibition or host a side event during the above mentioned meetings are invited, to submit the proposals for the event. The interested stakeholders are requested to indicate their intention to host or present one of the above (i.e. poster, side events and exhibits) at the earliest. For more details please visit: <http://www.cbd.int/register/sideevents/manage.aspx?mtg=MOP-06> and <http://www.cbd.int/register/side-events/manage.aspx?mtg=COP-11>.



Training Modules on the Cartagena Protocol on Biosafety

Biosafety Clearing House (BCH) provides several training modules for self learning about the Cartagena Protocol on Biosafety.

- An Introduction to Cartagena Protocol on Biosafety
- An Introduction to the Biosafety Clearing House
- Surfing the BCH Central Portal
- Finding Information in the BCH Central Portal
- Recommended Guidelines for Countries
- Registering Information in the BCH Central Portal
- Registering National Information in the BCH Central Portal
- Sharing Biosafety Information on the BCH Central
- Information-sharing Obligations on Becoming a Party to the Protocol

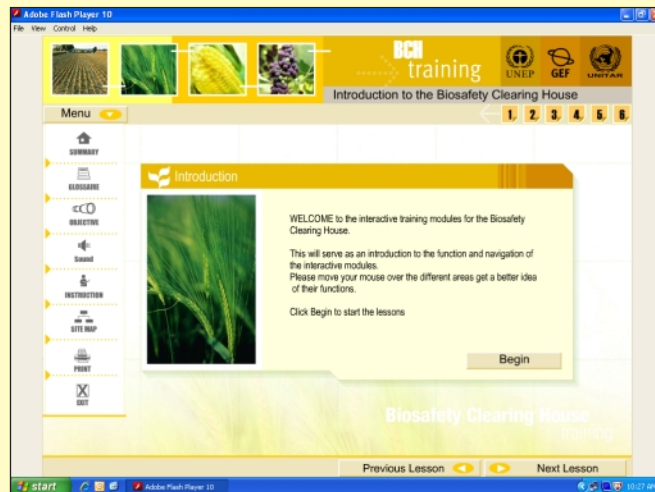
The modules are available in PDF format on Biosafety Clearing House (BCH), and provide a range of information from introductory material to in-depth review. Most

modules contain interactive exercises and detailed walk-throughs of the steps required for each activity. These modules can be accessed by registering on BCH training site under section on resources at <http://bch.cbd.int/help/training-modules>.

There are two interactive training modules designed to enable users to understand the concepts introduced in Training Modules 1 and 2 in a hands-on manner i.e.

- Introduction to the Cartagena Protocol on Biosafety
- Introduction to the Biosafety Clearing-House

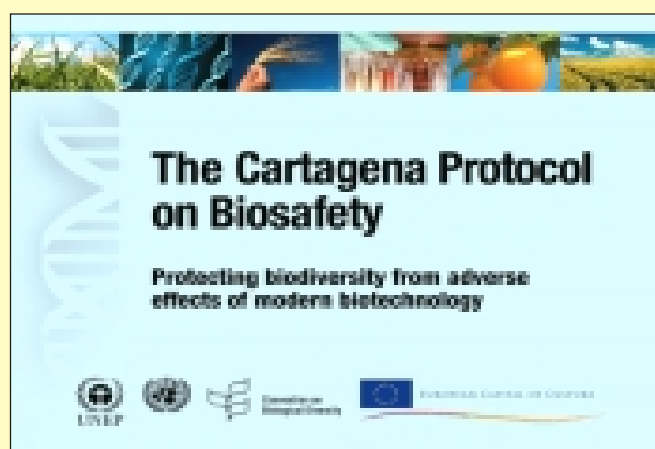
The interactive modules are designed in Macromedia Flash and are easy to operate. **The audio-video format allows users to work individually and learn at their own pace.** These modules are free to download and can be installed. **Practical exercises and quiz comprising of 20 questions each have been included for self evaluation.** These modules can also be used for training programmes and group exercises.



Video on the Cartagena Protocol on Biosafety

The video on the Cartagena Protocol on Biosafety contains messages regarding the main provisions of the Protocol and can be downloaded from the Protocol website at:

http://bch.cbd.int/protocol/cpb_media_video1.shtml.



“OPPORTUNITIES FOR PARTICIPATION”

Online Forum on Capacity-building for Biosafety

An online forum is open from 20 February-4 May 2012, on the BCH website to identify strategic approaches to capacity-building and develop a capacity assessment framework and a framework for monitoring and evaluation.

The outcome of the Forum will be considered by the Sixth meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety (COP-MOP6).

The Forum is open to any participant from Parties, other Governments and relevant organizations involved in biosafety capacity-building activities or interested in sharing their views and experiences relevant to the subject matter. Posting of messages is restricted to pre-registered participants but the posted messages are publicly available for reading.

Submission of Materials on Guidance on LMO Risk Assessment

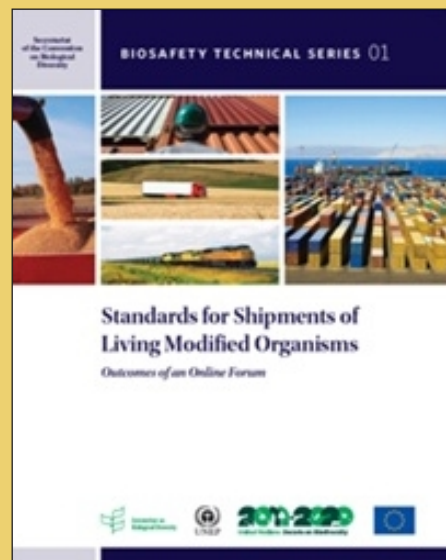
The Secretariat of the Convention on Biological Diversity (CBD) has invited submissions of background materials relevant to the Guidance on Assessment of Living Modified Organisms (LMOs) under the Cartagena Protocol on Biosafety to be considered by the ad hoc technical expert group (AHTEG) on risk assessment. The technical and scientific experts of parties and non-parties, scientific organizations and registered users of the BCH are invited to submit materials through the BCH Biosafety Information Resources Centre (BIRC) in order to link the records relevant to risk assessment to specific sections of the guidance on LMO Risk assessment. The submission of background materials will be an ongoing exercise performed online through the BCH

BIOSAFETY TECHNICAL SERIES 01

Standards for Shipments of Living Modified Organisms

The Secretariat of the Convention on Biological Diversity (SCBD) has started a “Biosafety Technical Series” covering the key areas under the Cartagena Protocol on Biosafety and its Supplementary Protocol on Liability and Redress. Material published in the Biosafety Technical Series is intended for use by practitioners and for raising public awareness on living modified organisms (LMOs) in order to contribute to achieving the objectives of the two treaties.

The first issue of the biosafety technical series is available online from 30-01-2012. The report has two parts. Part A provides for the outcome of online forum on Standards for LMO Shipment and Part B contains a summary of information on standards and standard-setting bodies relevant to the handling, transport, packaging and identification of LMOs. The report can be accessed at https://bch.cbd.int/protocol/cpb_technicalseries.shtml



Newsletters on Biosafety Information

1

Newsletters provide a quick update on activities of particular programmes, projects, agenda etc. A brief overview of some of the newsletters providing information on biosafety related topics and activities are as provided. These newsletters are available electronically and can also be subscribed through email.

The screenshot displays the FAO Agricultural Biotechnologies website. The header includes the FAO logo and the tagline 'for a world without hunger'. The main content area is titled 'Agricultural Biotechnologies' and includes a sub-header 'in crops, forestry, livestock, fisheries and agro-industry'. A large image shows people working in a field. The text describes the scope of the news items, covering various food and agricultural sectors. A sidebar on the left lists navigation links like 'FAO Home', 'Biotechnology Home', and 'FAO Documents'. On the right, there is a section for 'FAO-BiotechNews' with a search bar and a 'Free Text' input field. The main content area also includes a 'News' section with a headline 'Strengthening partnerships in agricultural biotechnologies' dated 21/12/2011, and another section 'Agricultural biotechnologies and food security' dated 20/12/2011. The bottom right corner features the 'abdc 10' logo.

FAO Biotech-News: The Food and Agriculture Organisation of the United Nations publishes a quarterly newsletter covering news that are relevant to applications of biotechnology in food and agriculture in developing countries. Its main focus is on the activities of FAO, of other United Nations agencies/ bodies and of the Consultative Group on International Agricultural Research (CGIAR) research centers. This newsletter is published in six different versions i.e. Arabic, Chinese, English, French, Russian and Spanish. It can be subscribed by a request to **FAO-Biotech-News@fao.org** along with the subscriber's e-mail address.

Publications

2

Information Systems for Biotechnology (ISB) News Reports: Information Systems for Biotechnology (ISB) provides information resources to support the environmentally responsible use of agricultural biotechnology products. The ISB News Report is published monthly and is also available by e-mail. Issues are available as a web page or in Adobe.pdf format. It can be subscribed by a request at <http://www.nbiap.vt.edu/publication-request-form.aspx>

3



SABP

The South Asia Biosafety Programme (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.

GOLDEN RICE FOR ADDRESSING THE VITAMIN A-DEFICIENCY PROBLEM IN BANGLADESH

Dr. Md. Alamgir Hossain, Principal Scientific Officer, Bangladesh Rice Research Institute, Gazipur, Bangladesh, Email: mahbub@yahoo.com

Vitamin A is an essential nutrient needed in small amounts by the human body for the normal functioning of the visual system, growth and development, maintenance of epithelial cellular integrity, immune function and reproduction. Vitamin A deficiency (VAD) is a global problem. According to the World Health Organization (WHO), about 125 million children in developing countries suffer from vitamin A deficiency (VAD), causing blindness in up to 500,000 per year. VAD can cause partial or total blindness in 350,000 pre-school age children. Less severe deficiencies weaken the immune system, increasing the risk of infections such as measles and malaria. Women with VAD are more likely to die during or after childbirth.

Interventions to reduce VAD have, so far, involved (a) supplementation (e.g., distribution of vitamin A capsules), (b) food fortification by adding provitamin A, and (c) dietary education and diversification. In the FAO/WHO World Declaration on Nutrition (1992) the following strategy was advocated: "Ensure that sustainable food-based strategies are given first priority particularly for populations deficient in vitamin A, favoring locally available foods and taking into account local food habits." "Supplementation should be progressively phased out as soon as micronutrient-rich food-based strategies enable adequate consumption of micronutrients." "Supplementation is said to be a quick remedy for undernourished children but it is not a sustainable strategy. Since it needs to be continued every year,



a country like Bangladesh needs to spend millions of dollars for the medicine and its delivery process. An economic crisis, which is a very common scenario in developing countries, may cause setbacks in other important development activities. A sustainable solution to the problem will come only when it is possible to improve the content of the missing micronutrients in the major staple crops. Rice is the staple food of most of the Asian countries providing 80% or more of daily calories. Unfortunately, rice plants do not produce beta-carotene or other forms of provitamin A in the grain as consumed by humans. Consequently VAD often occurs where rice is the major staple food.

It was under this background in early 1990 that Prof. Ingo Potrykus of the Institute of Plant Sciences at the Swiss Federal Institute of Technology took initiatives to develop a vitamin A-rich rice variety. Popularly known as "golden rice" it took eight years using genetic engineering due to the lack of necessary genes in the rice gene pool, to develop the much anticipated vitamin A-rich rice.

In Bangladesh, one in every five pre-school children is vitamin A-deficient and 23.7% of pregnant women are affected by vitamin A deficiency. About 30 000 children under age six go blind annually, and at least half of these die within weeks of the blinding episode. Recent reports indicate that night blindness among rural mothers is as high as 1.4%. National studies have confirmed widespread low intakes of vitamin A in the diet and a high prevalence of the signs and symptoms of xerophthalmia. This prevalence is well in excess of WHO threshold levels at which a major public health problem is considered to exist. Smaller, often clinically-based studies have confirmed low serum retinol levels and interactions with diarrhoea, measles and other infectious disease including the presence of enteric parasites. Risk factors in the development of xerophthalmia include diet, age, infectious disease, maternal education, socioeconomic status, seasonal variation and geographic clustering. Although short to long term prevention and control programs are to some extent in place, much remains to be done.

Golden rice can play a vital role in reducing vitamin A deficiency malnutrition. Scientists of the Bangladesh Rice Research Institute (BRRI), in collaboration with the International Rice Research Institute (IRRI), have developed a second generation golden rice GR2-R BRRI dhan 29, which is one of the best high yielding varieties of rice released by BRRI.

Golden Rice is a genetically engineered, yellow-orange rice grain that contains beta-carotene. The initial daifodil gene encoding phytyl synthase (psy) used in the earlier form of golden rice was found to be a limiting step in beta-carotene accumulation. The most recently developed golden rice varieties contain a gene (psy) from maize and the other gene, phytylase desaturase (GTL1) from a common soil bacterium (*Erwinia*). The enzyme products of these genes lead to the formation of beta-carotene and other provitamin A in the rice grain. An increase in total carotenoids of up to 23-fold (maximum 37 µg/g) compared to the original Golden Rice has been reported. The original transgenic parental Kaybonnet materials underwent field testing in the USA. The backcrossed GR2-IR64, GR2-PSB RcB2 and GR2-BRRI dhan29 lines were tested for several subsequent generations at IRRI for the stability of the genes and plant performance. So far no secondary genetic effects

(continued on page 4 - see Rice)



ISB NEWS REPORT

AGRICULTURAL AND ENVIRONMENTAL BIOTECHNOLOGY

March 2012

REGULATORY NEWS

Regulation of GE Plants and Animals: Trials and Tribulations

Phil Jones

During December, the US Department of Agriculture (USDA) deregulated two of Monsanto Company's genetically engineered (GE) plants. Monsanto's Vistive® Gold soybeans, which contain the trait MON 87705, synthesize oil with increased levels of monounsaturated fat and decreased amounts of saturated fat. These characteristics reflect 2010 Dietary Guidelines for Americans that advocate reductions of saturated fat and trans fat in the diet. The Vistive® Gold trait will be stacked with the Genity® Roundup Ready 2 Yield® trait to provide tolerance to Roundup herbicide. The USDA also deregulated Monsanto's GE drought-tolerant corn (MON 87460), which will be incorporated into the company's insect-resistant and herbicide-tolerant varieties. Monsanto announced plans for farm trials in the western Great Plains this year to familiarize growers with the corn and generate data to inform commercial decisions. In both cases, the USDA's Animal and Plant Health Inspection Service determined that the GE plants are unlikely to pose a plant pest risk in view of the agency's plant pest risk assessments and draft Environmental Assessments. Consequently, neither GE plant is subject to APHIS regulation. While this may seem to be the end of the matter, APHIS deregulation can signal the first step of a thousand mile journey.

Deregulation of GE Alfalfa: Seven Years Later

Monsanto, which owns the patent rights to Roundup Ready® alfalfa, and Monsanto's licensee, Forage Genetics International, submitted a petition to the USDA requesting nonregulated status for two Roundup Ready® alfalfa lines, J101 and J163. This was in May 2003. Two years later, APHIS issued a Finding of No Significant Impact in light of its Environmental Assessment. The agency decided that it was unnecessary to prepare an Environmental Impact Statement (EIS) and unconditionally deregulated the GE alfalfa.

In early 2006, the Center for Food Safety, several other nonprofit organizations, and alfalfa growers filed a lawsuit against the USDA in a California US district court to challenge APHIS' deregulation of the Roundup Ready® alfalfa lines. The plaintiffs alleged that deregulation of GE alfalfa violated the US National Environmental Policy Act (NEPA), because cultivation of the GE alfalfa would transmit the glyphosate tolerance gene to conventional alfalfa, an event that would be a significant environmental impact.

In February 2007, Judge Charles R. Breyer held that APHIS had violated NEPA on the grounds that the agency had deregulated Roundup Ready® alfalfa without first drafting an EIS. Following a hearing, Judge Breyer vacated APHIS' June 2005 regulation decision, and ordered APHIS to prepare an EIS before the agency decided again about Monsanto's deregulation petition. The judge also issued a permanent injunction that banned the planting of any Roundup Ready® alfalfa in the United States after March 30, 2007, pending the government's completion of the EIS and decision on the deregulation petition.

The USDA, Forage Genetics, Monsanto, and a number of alfalfa growers filed an appeal with the Ninth US Circuit Court of Appeals in San Francisco. However, a three-judge panel



South Asia Biosafety Programme (SABP)

Newsletter: The South Asia Biosafety Programme (SABP) is a capacity building project being implemented in India and Bangladesh with support from USAID. The SABP published a monthly newsletter which includes invited editorials, information about biosafety regulation and policy developments in India and Bangladesh, SABP and other capacity building activities in the region, and related science or news stories. The newsletter can be subscribed through an e-mail request at vibhaahuja@biotech.co.in or downloaded from http://cera.gmc.org/index.php?action=sabp_newsletter.

Upcoming Events

National

Title	Organized/hosted by	Date & Venue
National Seminar on Biotechnological Approaches in Pest Management	Department of Entomology and School of Agricultural Biotechnology, Punjab Agricultural University, Ludhiana	May 4 - 5, 2012 Ludhiana
Transgenics : Creation, Detection, Breeding and Regulation	Barwale Foundation	May 8 - 10, 2012 Hyderabad
Second Meeting of the Open-ended Ad Hoc Intergovernmental Committee for the Nagoya Protocol on ABS (ICNP-2)	Ministry of Environment and Forests Government of India	July 2- 6, 2012 New Delhi
Sixth meeting of the Conference of the Parties serving as the meeting of the Parties to the Cartagena Protocol on Biosafety (MOP-6)	Ministry of Environment and Forests, Government of India.	October 1-5, 2012, Hyderabad
Eleventh meeting of the Conference of the Parties to the Convention on Biological Diversity (COP-11)	Ministry of Environment and Forests, Government of India.	October 8-19, 2012, Hyderabad
International Symposium on New Paradigms in Sugarcane Research	Society for Sugarcane Research and Development and Sugarcane Breeding Institute	Oct. 15-18, 2012, Coimbatore

International

International Conference on Environmental Risk Assessment of Genetically Engineered Plants	The Bangladesh Academy of Sciences and the Center for Environmental Risk Assessment	April 15-17, 2012 BRAC Centre, Dhaka, Bangladesh
Biosafety Workshop "Problem Formulation: A Strategic Approach to Risk Assessment of GMOs"	International Centre for Genetic Engineering and Biotechnology (ICGEB) in collaboration with the Ministry for Environment, for the Protection of the Territory and for the Sea, Government of Italy	April 16-20, 2012 Trieste Italy
Inter-regional workshop on capacity building needs for the implementation of the Nagoya – Kuala Lumpur Supplementary Protocol on Liability and Redress	The Secretariat of the Convention on Biological Diversity	May 9-11, 2012 Riga, Latvia
Workshop "Biosafety of Genetically Engineered Crops: Best Practices from Laboratory to Farmer's Fields"	ICGEB In collaboration with GENETECH, Colombo, Sri Lanka, University of Colombo, Sri Lanka, Michigan State University, USA, The National Science Foundation, Colombo, Sri Lanka and Embassy of USA, Colombo, Sri Lanka	May 21-25, 2012 Colombo, Sri Lanka
12th International Symposium on Biosafety of Genetically Modified Organisms (ISBGMO12)	International Society for Biosafety Research	Sep. 17–20, 2012 St Louis, Missouri, USA

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Student Scholarships for Participation in ISBGMO12"

The 12th International Symposium on Biosafety of Genetically Modified Organisms (ISBGMO) will be organized in St Louis, USA between 16-20 September, 2012. This conference will provide the opportunity for scientists from all around the world to share experiences about biosafety. Three scholarships are being offered to support the travel and attendance costs for students currently conducting graduate level research that is relevant to the ecological risk assessment of transgenic crops and genetically modified organisms.

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Disclaimer : The information in this newsletter has been compiled from various sources and does not necessarily depict views of the Ministry of Environment & Forests, Government of India.