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South Asia Biosafety Program

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SABP 2017 – A Year in Review

The South Asia Biosafety Program (SABP) has had a busy year. With funding from the US Agency for International Development (USAID) and collaborations with many local partners, SABP has been instrumental in supporting the development of a science-based approach to risk assessment and regulation in India and Bangladesh. Some of SABP's key contributions this year are highlighted below.

Launched in 2017, the Bangladesh Biosafety Portal is the only comprehensive, online repository of information about the Bangladesh biosafety regulatory system. It serves as a resource for stakeholders seeking guidance about the regulatory framework and associated processes, and helps contribute to regulatory transparency.

The *User's Guide to Biosafety Regulatory Process for GE Plants in Bangladesh* was finalized this year—representing the culmination of a series of consultations with the Government of Bangladesh and stakeholders on current implementation and regulatory practices. Providing clear and easy to understand descriptions of regulatory committees, it outlines the steps for submitting applications for activities such as importation of genetically engineered (GE) plants or derived products, and confined field trials of GE plants, along with expected timeframes for processing and review of applications.

Working collaboratively with Institutional Biosafety Officers (IBOs) from the Indian Council for Agricultural Research institutes participating in the ICAR/SABP Programme on Biosafety Awareness and Compliance Readiness, SABP helped facilitate the preparation and publication of ICAR's first biosafety compliance documents. These include: Guidance for Conducting Research with Regulated GE Plants in Contained Greenhouses and Screen Houses; Standard Operating Procedures for Working with GE Plants in Containment Facilities; and associated recording formats, all of which are available on the ICAR Biosafety Portal.

The 5th Annual South Asia Biosafety Conference, held September 11-13, 2017 in Bangalore, brought together leading scientists representing regulatory agencies, public sector research institutions, the private sector, and non-governmental organizations from South Asia and around the world. One hundred and eighty-five participants from 11 countries attended. The conference featured five plenary sessions and three parallel workshops addressing the status and current progress of biosafety regulations for South Asian countries, new technologies, methods and best practices for meeting regulatory challenges, engagement with stakeholders, as well as practical experience and guidance.

This year's accomplishments, detailed above and many more, would not have been possible without the support of USAID, national governmental agencies and other public-sector partners, but most importantly, the dedication and hard work of our program's local representatives in South Asia— Dr. Vibha Ahuja, Biotech Consortium India Limited, and Dr. M. Imdadul Hoque, University of Dhaka. SABP looks forward to another successful year, as it continues to facilitate the implementation of transparent, efficient, and responsive regulatory frameworks for products of modern biotechnology.

Bangladesh Biosafety Portal &
User's Guide to Biosafety Regulatory Process for GE Plants in Bangladesh
http://bangladeshbiosafety.org/

ICAR Biosafety Portal:
Biosafety Compliance Documents
https://biosafety.icar.gov.in/?page_id=515

Presentations from the
5th Annual South Asia Biosafety Conference
http://ilsirf.org/event/sabc2017/

INDIA

Highlights from the Asia Forum on Environmental Release & Safety Management of Living Modified Organisms

The "Asia Forum on Environmental Release & Safety Management of Living Modified Organisms (LMOs)" was organized by the Korea Biosafety Clearing-House from November 22-24, 2017 at Jeju Islands, South Korea. The event was organized with an objective to share experiences and lessons learned amongst Asian countries that have planted GM crops commercially or have some candidates in the pipeline. The countries that participated included Australia, Bangladesh, China, India, Malaysia, the Philippines, South Korea, and Vietnam.

There were two technical sessions, detailed below:

1. National experiences on LMOs for intentional introduction into the environment:

- Definition of environmental release in each country;
- Biosafety control and management for LMOs for intentional introduction into the environment for the purpose of research and development and/or commercialization;
- Field trials, approvals, and commercialization of LMOs for intentional introduction into the environment; and
- Major challenges and troubleshooting experiences in each country, etc.

2. Public participation in issues regarding LMOs for intentional introduction into the environment:

- Public awareness and communication experiences (including survey results); and
- Issues taken up by the public and non-governmental organizations, and how to respond.

Presentations were made by regulators and experts from various countries followed by detailed discussions. Dr. Vibha Ahuja, Chief General Manager, Biotech Consortium India Limited and Dr. M. Imdadul Hoque, Professor, Department of Botany, University of Dhaka, the coordinators of the South Asia Biosafety Program (SABP) in India and Bangladesh, participated and gave presentations.

The presentations made by various countries provided an opportunity to learn about the status of biosafety regulations, approved GMOs and those undergoing research, and the initiatives for public awareness and participation.

In line with its objectives, the forum provided an excellent platform for the exchange of information about environmental release and public participation. The presentations made by various countries provided an opportunity to learn about the status of biosafety regulations, approved GMOs and those undergoing research, and the initiatives for public awareness and participation. The speakers also shared information about the challenges in their countries. It was interesting that several raised issues and concerns are similar across Asian countries. However, it was also surprising to learn about the concerns of civil society organisations in Korea, as well as the excellent work underway in their own public-sector research institutions. It was also evident that more clarity is required to differentiate between confined field trials and environmental (unconfined) release.

All participants were of the opinion that the forum should continue, as it helps enable better understanding of environmental release and safety management of LMOs in Asian countries through one-on-one interaction among regulators and experts, meeting challenges to the introduction of agricultural biotechnology in Asia.

INDIA

India Supported Capacity Building for Strengthening the Commercial Micropropagation Sector in African Countries

Dr. Shiv Kant Shukla, Deputy General Manager, Biotech Consortium India Ltd., New Delhi

Micropropagation, also known as plant tissue culture, is the technology for producing large numbers of disease-free and uniform planting material of identified superior plants in defined periods, across seasons and with limited space. The technology has been successfully used in agriculture, horticulture, and forestry through the propagation of disease-free and superior clones in India.

Improvement of agricultural productivity and food security is one of the focus areas of support from the Indian Ministry of External Affairs (MEA), under India-Africa partnership programs initiated as a follow up to the 3rd India-Africa Forum Summit held in 2015, during which creating mutually enriching partnerships revolving around enhanced capacity building and training was emphasized. In line with this effort, Biotech Consortium India Ltd. (BCIL) is implementing a project on "Capacity Building of African Countries in Commercial Micropropagation" through training in operations and quality management, with support from MEA and the Department of Biotechnology, Ministry of Science & Technology.

Improvement of agricultural productivity and food security is one of the focus areas of support from the Indian Ministry of External Affairs (MEA), under India-Africa partnership programs.

The program aims at capacity building in the commercial micropropagation sector in African countries, thereby facilitating the growth of this agro-industry. This project envisages training a total of 270 candidates from Africa over the period of four years, including technical personnel, students (potential workers), prospective entrepreneurs, and progressive growers.

A training program, starting on November 20, 2017 and spanning four weeks, is currently being held, structured to provide comprehensive exposure to commercial plant tissue culture and its application in agriculture. A total of 45 candidates from 14 countries, including Chad, Comoros, Kenya, Malawi, Madagascar, Nigeria, Sudan, Senegal, Tanzania, Uganda, Zambia, Mauritius, Tunisia, and Seychelles, representing African research institutions, universities, and relevant government departments and ministries interested in plant tissue culture are participating in the program.

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The program's focus is on hands-on training, conducted at a commercial plant tissue culture facility in Raipur, which is engaged in the tissue culture of banana, sugarcane, etc. Participants are also exposed to advanced techniques at Amity University, Noida. Key experts from the tissue culture industry, including Indira Gandhi Agriculture University, Pt. Ravishankar Shukla University, the Indian Agricultural Research Institute, the National Research Centre on Plant Biotechnology, Amity University, and BCIL, gave presentations and interacted with participants during the training.

Practical training started with the identification of superior mother plants of banana and sugarcane, followed by direct observation of culture initiation, shoot multiplication, root induction, as well as primary and secondary hardening. Visits to the fields of progressive farmers and leading growers were also organized. In the final week, hands-on training was provided on recent techniques in virus indexing and testing of genetic fidelity of tissue culture plants. Through the program, comprehensive exposure to commercial plant tissue culture operations and quality management was provided, in line with its objectives.

Notification of the National Referral Laboratories to Detect the Presence or Absence of LMOs and GMOs

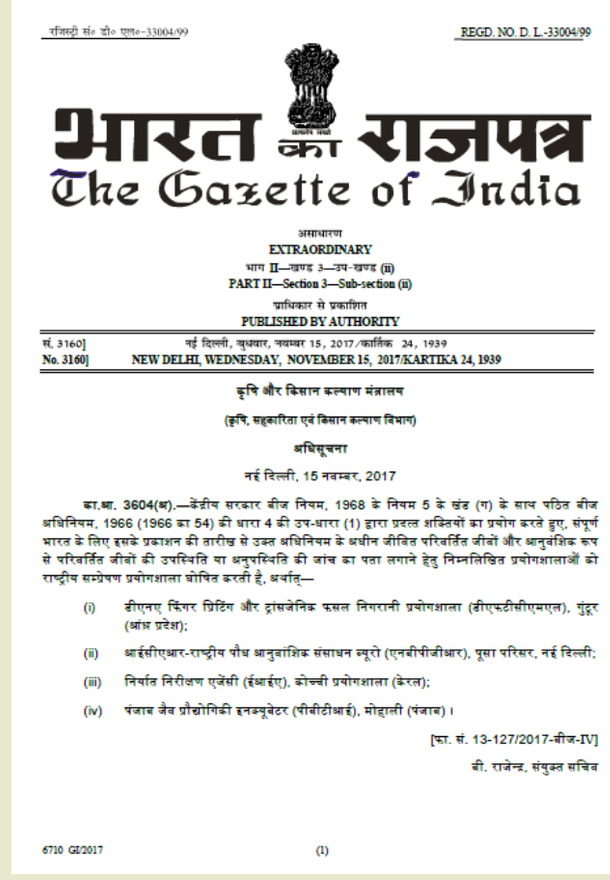
The Indian Ministry of Agriculture and Farmers Welfare issued a notification on November 15, 2017 declaring that the National Referral Laboratories will detect the presence or absence of living modified organisms (LMOs) and genetically modified organisms (GMOs) under the Seeds Act, 1966. These laboratories have been provided with support for capacity building through improved infrastructure and training under the UNEP-GEF-supported Phase II Capacity Building Project on Biosafety. Their contact details are as follows:

1. **DNA Fingerprinting and Transgenic Crop Monitoring Lab (DFTCML), Guntur, Andhra Pradesh**
   POC(s): Mr. Jaya Krishna Potikalapud, Assistant Director of Agriculture
   Tel: 984-9439369
   Email(s): pjayakrishna2001@yahoo.com

2. **ICAR-National Bureau of Plant Genetic Resources (NBPGR), New Delhi**
   POC(s): Dr. Kuldeep Singh, Director
   Dr. Gurinderjit Randhawa, Principal Scientist & Officer-In-Charge
   Tel: 011-25841129, 011-2584369
   Email(s): gurinder.randhawa@icar.gov.in
   gurinder.randhawa@rediffmail.com
   Website: http://www.nbpgr.ernet.in/

3. **Export Inspection Agency (EIA), Kochi Laboratory, Kerala**
   POC(s): Shri. Jayapalan G, Deputy Director In-Charge
   Dr. Anoop A Krishnan, Assistant Director In-Charge
   Tel: 0484-2316945, 0484-2316946
   Email(s): eia-kochilab@eicindia.gov.in
   Website: http://www.eicindia.gov.in

4. **Punjab Biotechnology Incubator (PBTI), Mohali, Punjab**
   POC(s): Dr. Ajit Dua, Chief Executive Officer
   Tel: 0172-5020894, 0172-5020891
   Email(s): pbti2005@yahoo.com
   ajit_dua@yahoo.com
   Website: http://www.pbtilabs.com



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भारत का राजपत्र
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असाधारण
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कृषि और किसान कल्याण मंत्रालय

(कृषि, सहकारिता एवं किसान कल्याण विभाग)

अधिसूचना

नई दिल्ली, 15 नवम्बर, 2017

का.आ. 3604(अ).—केंद्रीय सरकार बीज नियम, 1968 के नियम 5 के खंड (ग) के साथ पठित बीज अधिनियम, 1966 (1966 का 54) की धारा 4 की उप-धारा (1) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए, संपूर्ण भारत के लिए इसके प्रकाशन की तारीख से उक्त अधिनियम के अधीन जीवित परिवर्तित जीवों और आनुवंशिक रूप से परिवर्तित जीवों की उपस्थिति या अनुपस्थिति की जांच का पता लगाने हेतु निम्नलिखित प्रयोगशालाओं को राष्ट्रीय सम्प्रेषण प्रयोगशाला घोषित करती है, अर्थात्—

(i) डीएनए फिंगर प्रिंटिंग और ट्रांसजेनिक फसल निगरानी प्रयोगशाला (डीएफटीसीएमएल), गुंटूर (आंध्र प्रदेश);

(ii) आईसीएआर-राष्ट्रीय पौध आनुवांशिक संसाधन ब्यूरो (एनबीपीजीआर), पूसा परिसर, नई दिल्ली;

(iii) निर्यात निरीक्षण एजेंसी (ईआईए), कोच्ची प्रयोगशाला (केरल);

(iv) पंजाब जैव प्रौद्योगिकी इनक्यूबेटर (पीबीटीआई), मोहाली (पंजाब)।

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INDIA

New Molecular Biology Laboratory of the Export Inspection Council at Kochi

Shri. Jayapalan G, Deputy Director (I/c), Dr. Anoop A. Krishnan, Assistant Director, Dr. Lijo John, Assistant Director, Export Inspection Agency-Kochi

Export Inspection Agency-Kochi (EIA-Kochi), functioning under the administrative and technical control of the Export Inspection Council of India (EIC), Ministry of Commerce and Industry, has inaugurated its new molecular biology laboratory to facilitate export, import, and domestic trade related to food and feed. The laboratory is located at EIA-Kochi, Shipyard Quarters Road, Panampilly Nagar, Kochi.

EIA laboratories are backed by qualified technicians and experienced employees, having nearly five decades of diversified experience in quality control and inspection of notified commodities, including testing per international and importing country standards, or foreign buyer specifications.

EIA-Kochi laboratory is a food testing laboratory accredited through the National Accreditation Board for Testing and Calibration Laboratories (NABL) since 2007 for chemical and microbiological testing, complying with the requirements of ISO/IEC 17025:2005. The laboratory is equipped with modern, sophisticated equipment to cater to the needs of analyzing genetically modified organisms (GMOs), residues (antibiotics and pesticides), contaminants (heavy metals), toxins (mycotoxins), proximate parameters, and microbiological tests. The laboratory is regularly involved in the testing of food and agriculture commodities, as part of export certification and when required by various government and statutory bodies.

A new state-of-the-art molecular biology laboratory of about 1500 sq. ft. was recently set up on the building's third floor, officially opening its doors on November 22, 2017. Shri. Santosh Kumar Sarnagi, IAS, EIC Chairman and Joint Secretary, Ministry of Commerce and Industry inaugurated the function. Dr. S. K. Saxena, EIC Director, gave the keynote address. The laboratory is capable of conducting PCR, real time PCR, DNA sequencing, and other molecular biology tests for food and agricultural products, as well as virus testing.

It includes equipment for the detection of GMOs, living modified organisms (LMOs), viruses, pathogens in shrimps, meat and meat product species identification, etc. It is also in the process of upgrading its testing scope for the identification and quantification of GMOs/LMOs, Basmati rice authenticity testing by genotyping, species and pathogen identification, among others, using PCR, real time PCR, and DNA sequencing.

The laboratory is equipped with modern, sophisticated equipment to cater to the needs of analyzing genetically modified organisms (GMOs), residues (antibiotics and pesticides), contaminants (heavy metals), toxins (mycotoxins), proximate parameters, and microbiological tests.

The laboratory regularly participates in international proficiency testing programs and also organizes and participates in inter-laboratory comparison programs for various parameters, including GMOs, to demonstrate technical competency. It is one of the beneficiaries and partner organizations of the UNEP-GEF-supported Phase II Capacity Building Project on Biosafety, currently being implemented through the Indian Ministry of Environment, Forest, and Climate Change (MoEF&CC).

In addition to the testing services delivered as part of export certification, EIA-Kochi laboratory also extends testing services to various government and statutory bodies as required, and it is also open to any stakeholders and potential customers.

CALENDAR OF EVENTS

EVENT	ORGANIZED BY	DATE	WEBSITE
INDIA			
National Symposium on Sustainable Disease Management: Approaches and Applications	G.B. Pant University of Agriculture and Technology, Pantnagar	December 21-23, 2017 Pantnagar	http://bit.ly/2mlTt7k
1st National Biotechnology Conclave 2017: Accelerating the Biotech Ecosystem in India	Confederation of Indian Industry (CII)	December 22, 2017 New Delhi	http://www.cii.in/
Recent Techniques and Tools for Nutritional Quality Assessment and Enhancement of Food Crops	ICAR-Indian Agricultural Research Institute	January 23 – February 12, 2018 New Delhi	http://bit.ly/2iZvUQR
Training Course on Recent Advances and Accomplishments in Heterosis Breeding of Crops	Tamil Nadu Agricultural University	January 31 – February 20, 2018 Coimbatore	http://www.tnau.ac.in/
3rd ARRW International Symposium on Frontiers of Rice Research for Improving Productivity, Profitability, and Climate Resilience	Association of Rice Research Workers, in collaboration with ICAR-National Rice Research Institute	February 6 – 9, 2018 Cuttack	http://bit.ly/2BJoEME
Winter School (2017-18) - Molecular Breeding for Higher Productivity, Quality, Food Colorants, Nutraceutical, and Bioactive Health Compounds in Vegetable Crops	Division of Vegetable Science Indian Agricultural Research Institute	February 13 – March 5, 2018 New Delhi	http://bit.ly/2ADZrUH
BioAsia 2018	Genome Valley, Govt. of Telangana Federation of Asian Biotech Associations and Pharmaceutical Export Promotion Council	February 22 – 24, 2018 Hyderabad, India	http://2018.bioasia.in/
Workshop: Smart Metabolic Engineering of Plants for Drug Biosynthesis	International Centre for Genetic Engineering and Biotechnology (ICGEB)	March 16 – 17, 2018 New Delhi, India	https://www.icgeb.org/meetings-2018.html
INTERNATIONAL			
ICGEB-NASSL "South Asian Biotechnology Conference 2018 - SABC 2018"	National Academy of Sciences of Sri Lanka (NASSL), ICGEB, and the South Asian University (SAU)	March 28 – 30, 2018 Colombo, Sri Lanka	https://www.icgeb.org/meetings-2018.html
2nd World Congress & Expo on Biotechnology and Bioengineering	Biocore Conferences	June 25 – 27, 2018 Dubai, UAE	https://biocoreconferences.com/biotechnology2018/

SOUTH ASIA BIOSAFETY PROGRAM

The South Asia Biosafety Program (SABP) is an international developmental program implemented in India and Bangladesh 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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