

# South Asia Biosafety Program

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## BANGLADESH

### Biosafety Regulations for Biotech Researchers and Biosafety Practitioners Seminar at Chattogram Veterinary and Animal Sciences University

Aparna Islam, South Asia Biosafety Program



Dr. Aparna Islam and Dr. Andrew Roberts during the open discussion of the Biosafety Regulations for Biotech Researchers and Biosafety Practitioners Seminar at Chattogram Veterinary and Animal Sciences University (May 2, 2019).

The South Asia Biosafety Program (SABP), in collaboration with Chattogram Veterinary and Animal Sciences University (CVASU), Khulsi, Chattogram, organized a seminar on biosafety on May 2, 2019 at CVASU. Spanning half a day, the *Biosafety Regulations for Biotech Researchers and Biosafety Practitioners* seminar included presentations on biosafety regulations, SABP and its activities in Bangladesh, and the *Bangladesh Biosafety Portal* (see page 2).

During the Opening Ceremony, Prof. Md. Alamgir Hossain, Director, Directorate of Research and Extension, CVASU introduced the resource persons from SABP. The seminar was then inaugurated by Prof. Goutam Buddha Das, honorable Vice Chancellor, CVASU.

**Dr. Roberts described the evolution in agriculture, from conventional to biotech research for crop improvement, and the corresponding introduction of biosafety regulations.**

After a short opening ceremony, three lectures were presented. First, Dr. Andrew Roberts, Deputy Executive Director, ILSI Research Foundation delivered a presentation titled *Biosafety Regulations for Biotech Researchers and Biosafety Practitioners*. In this talk, Dr. Roberts described the evolution in agriculture, from conventional to biotech research for crop improvement, and the corresponding introduction of biosafety regulations. He also discussed the history of biosafety in Bangladesh and the current status of the Bangladesh biosafety regulatory system.

Dr. Roberts' talk was followed by a presentation from Dr. Aparna Islam, SABP Country Manager, who introduced the audience to the

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Dr. Andrew Roberts delivering the keynote lecture at the Biosafety Regulations for Biotech Researchers and Biosafety Practitioners Seminar (May 2, 2019).

South Asia Biosafety Program and its activities in Bangladesh. Dr. Roberts then provided a brief overview of the *Bangladesh Biosafety Portal* so that participants could become familiar with this important resource for biosafety in Bangladesh.

Presentations were followed by a lively and open discussion. The audience was assembled from Chattogram scientists and academics with an interest in biotechnology and biosafety. Researchers from research institutes, including the Bangladesh Council of Scientific and Industrial Research, Bangladesh Forest Research Institute, as well as



Prof. Goutam Buddha Das, CVASU honorable Vice Chancellor, speaking at the Opening Ceremony of the Biosafety Regulations for Biotech Researchers and Biosafety Practitioners Seminar (May 2, 2019).

academics from public universities, such as the University of Chittagong, CVASU, etc., and private universities, such as the University of Science and Technology Chittagong, University of Creative Technology Chittagong, etc., participated in the event. The research field of biotechnology is progressing noticeably in Bangladesh. Moreover, in Chattogram, research at both research Institutes and universities has advanced commendably. Against this backdrop, the participants expressed their appreciation of the program's value.

#### RESOURCE HIGHLIGHT

### Bangladesh Biosafety Portal

Modern biotechnology offers powerful tools for improving agricultural productivity, environmental sustainability, and nutritional quality of foods. New crop varieties developed using biotechnology are cultivated by millions of large and small farmers in both industrial and developing countries. Launched in 2017 by the South Asia Biosafety Program, the *Bangladesh Biosafety Portal* serves as a consolidated repository of governmental documents that inform biosafety regulation in Bangladesh. It also provides information and links to useful international technical resources. The portal features:

Biosafety  
Guidance

Crop Biology  
Documents

International  
Resources

Laws &  
Regulations

Standard  
Operating  
Procedures

Useful  
Web Links

[www.bangladeshbiosafety.org](http://www.bangladeshbiosafety.org)

Bangladesh  
Biosafety Portal

[Home](#) [Resource Library](#) [Useful Web Links](#) [Contact Us](#)



Access the User's Guide to Biosafety Regulatory Process for GE Plants in Bangladesh, an informational resource for applicants and other stakeholders interested in understanding the regulatory processes associated with biosafety regulation in Bangladesh. It addresses applications for confined field trials, renewal applications for confined field trials, applications for environmental release for cultivation, importations for use in food, feed and processing, or importations for release into the environment.

[Download the  
User's Guide](#)



## The International Food Policy Research Institute's Bt Brinjal Impact Assessment

Akhter Ahmed, International Food Policy Research Institute

Brinjal (eggplant) is a high-value crop widely grown and consumed in Bangladesh. Brinjal is highly vulnerable to the fruit and shoot borer pest, and farmers spray the crop heavily with pesticides. Farmers' spending on pesticides reduces their income, and increased pesticide use heightens their risk of contracting pesticide-related illnesses and facing related medical costs. Developing modern, pest-resistant crop varieties can help tackle these issues.

Agricultural biotechnologies such as Bt brinjal hold promise. Although the Government of Bangladesh approved the cultivation of 4 Bt varieties in 2013, evidence on their potential is still lacking. Therefore, in 2017–2018, the International Food Policy Research Institute (IFPRI) and the Government of Bangladesh partnered to estimate the impacts of Bt brinjal on production systems, producer welfare, and health outcomes.

The study was designed by IFPRI's Bangladesh Policy Research and Strategy Support Program (PRSSP), implemented by the Ministry of Agriculture under the Department of Agricultural Extension (DAE) and the Bangladesh Agricultural Research Institute (BARI), and coordinated by the Agricultural Policy Support Unit (APSU). Project partners regularly monitored the brinjal plots throughout the implementation period.

The Bt brinjal impact assessment was supported by the Government of Bangladesh, the US Agency for International Development (USAID), the CGIAR Research Program on Policies, Institutions, and Markets (PIM), and Cornell University.

Using a randomized controlled trial method, IFPRI-PRSSP researchers evaluated Bt brinjal's impact, comparing 600 farmers who were willing to grow Bt brinjal (treatment) with 600 farmers who agreed to grow non-Bt brinjal of the same variety (control) in four northwestern districts: Bogra, Gaibandha, Naogaon, and Rangpur.

IFPRI's impact evaluation involved two rounds of household surveys: a baseline survey was conducted before the study farmers planted

the brinjal and the endline survey was conducted on the same farm households half a year later—*after* the brinjal harvest.

Before cultivation, BARI scientists trained DAE extension officials on improved agronomic practices for growing brinjal, who then trained field-level extension agents. Apart from the seed variety, Bt and non-Bt farmers received the same inputs and training.

IFPRI's Bt brinjal impact assessment found that Bt brinjal farmers significantly reduced the number of applications and amount of pesticide sprayed. Fruit and shoot borer infestation were nearly eliminated among Bt plants, whereas infestation of conventional brinjal plants dropped only slightly. Bt brinjal yields were higher than conventional brinjal, driven by larger harvests and less crop loss to pests and diseases.

Bt brinjal farmers' production costs declined, largely due to reduced pesticide use. Farmers' revenues increased, amounting to a significant increase in net profits. In addition to profitability, the study also looked at market prices and traders'

attitudes toward Bt brinjal, which are key for understanding the potential for technology diffusion and adoption after the study. Market prices of brinjal varied widely during the postharvest season. Despite price fluctuations, farmers reported that they consistently sold Bt brinjal to traders at higher prices than local brinjal.

At the end of the study, Bt brinjal farmers were less likely than conventional brinjal farmers to report symptoms consistent with pesticide poisoning. Bt brinjal farmers were also less likely to seek medical care for these symptoms, or spend money on medical treatment. Bt brinjal cultivation improved brinjal productivity, farmers' income, and health outcomes among brinjal farmers in this study. The Ministry of Agriculture may use these positive results to guide its roll-out strategy for Bt brinjal cultivation in other parts of Bangladesh.

**Bt brinjal cultivation improved brinjal productivity, farmers' income, and health outcomes among brinjal farmers in this study.**



Close up of brinjal with rain drops.

## CALENDAR OF EVENTS

EVENT	ORGANIZED BY	DATE	WEBSITE
<b>BANGLADESH</b>			
7 <sup>th</sup> Annual South Asia Biosafety Conference	South Asia Biosafety Program (SABP), ILSI Research Foundation, and Biotech Consortium India Limited (BCIL)	September 14-16, 2019 Dhaka	<a href="http://ilsirf.org/sabp">http://ilsirf.org/sabp</a>
4 <sup>th</sup> IPFS-ICBHA 2019-GNOBB Conference	Global Network of Bangladeshi Biotechnologists (GNOBB)	November 11-13, 2019 Dhaka	<a href="http://gnobb.org/conference/IPFS-ICBHA-2019">http://gnobb.org/conference/IPFS-ICBHA-2019</a>
<b>INDIA</b>			
International Conference on Pharmaceutical Sciences and Biotechnology (ICOPSB-2019)	International Conference on Pharmaceutical Sciences and Biotechnology	July 11-12, 2019 Goa	<a href="http://biopharmameeting.com/">http://biopharmameeting.com/</a>
International Conference on Plant Protection in Horticulture – Advances and Challenges	Association for Advancement of Pest Management in Horticultural Ecosystems; ICAR-Indian Institute of Horticultural Research, Bengaluru; National Institute of Plant Health Management, Hyderabad; Indian Council of Agricultural Research, New Delhi	July 24-27, 2019 Bengaluru	<a href="https://icar.org.in/sites/default/files/ICPPH%202019-Final%20circular.pdf">https://icar.org.in/sites/default/files/ICPPH%202019-Final%20circular.pdf</a>
3 <sup>rd</sup> Annual AgriBiotech India Summit 2019	Inventicon Business Intelligence	July 25-26, 2019 Hyderabad	<a href="https://agribiotechindia.com/">https://agribiotechindia.com/</a>
Seed World 2019	Indian Council of Food and Agriculture	September 4-7, 2019 Bengaluru	<a href="http://icfa.org.in/event.php">http://icfa.org.in/event.php</a>
<b>INTERNATIONAL</b>			
6 <sup>th</sup> Plant Genomics and Gene Editing Congress	University of Nottingham and Crops for the Future	July 29-30, 2019 Kuala Lumpur, Malaysia	<a href="http://www.isaaa.org/kc/cropbiotechupdate/article/default.asp?ID=17364">http://www.isaaa.org/kc/cropbiotechupdate/article/default.asp?ID=17364</a> and <a href="http://www.global-engage.com/event/plant-genomics-asia/#register">http://www.global-engage.com/event/plant-genomics-asia/#register</a>
Course: Basic Laboratory Training on GMO Analysis	International Centre for Genetic Engineering and Biotechnology (ICGEB) and National Biotechnology Development Agency, Abuja, Nigeria	September 15-21, 2019 Abuja, Nigeria	<a href="https://www.icgeb.org/courses/course-basic-laboratory-training-on-gmo-analysis/">https://www.icgeb.org/courses/course-basic-laboratory-training-on-gmo-analysis/</a>



**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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