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# South Asia Biosafety Program

NEWSLETTER FOR PRIVATE CIRCULATION ONLY – NOT FOR SALE



BANGLADESH

## Plant Tissue Culture and Biotechnology Conference 2024

Abeda Anjum, Plant Breeding and Biotechnology Laboratory, Department of Botany, University of Dhaka

*Group photo of participants and guests at the Annual Plant Tissue Culture & Biotechnology Conference 2024 in Dhaka (1 February 2025).*

The Bangladesh Association for Plant Tissue Culture & Biotechnology (BAPTC&B) successfully convened the "Annual Plant Tissue Culture & Biotechnology Conference 2024" on 1 February 2025 at Sher-e-Bangla Agricultural University (SAU) in Dhaka. Regarded as a pivotal event for biotechnologists in Bangladesh, the conference functioned as a forum for various stakeholders, including researchers, academics, students, industry experts, and policymakers, to meet, share insights, and discuss recent advancements and upcoming challenges in plant biotechnology.

With a longstanding commitment to fostering scientific advancement and innovation, BAPTC&B has consistently played a vital role in shaping the landscape of plant biotechnology in Bangladesh. Established in 1989, the association has been at the vanguard of promoting plant tissue culture and biotechnological research activities nationwide.

Its core mission revolves around the introduction and widespread dissemination of cutting-edge technologies tailored for micro-propagation and the biotechnological enhancement of crops. This association has also been involved in promoting various biosafety activities required for the research and development of genetically engineered crops in Bangladesh. By facilitating collaboration, knowledge sharing, and capacity building through a range of initiatives, including national and international conferences, specialized workshops, and its highly regarded scientific journal, *Plant Tissue Culture and Biotechnology (PTC&B)*, BAPTC&B continues to exert significant influence on the trajectory of agricultural innovation.

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About 300 hundred participants from different research institutes and universities joined this one-day event. The conference's inaugural ceremony was chaired by the Chairman of Organizing Committee and President of the Bangladesh Association of Plant Tissue Culture and Biotechnology, Prof. Dr. Rakha Hari Sarker. The respected Vice-Chancellor of Sher-e-Bangla Agricultural University, Prof. Dr. Md. Abdul Latif, was present as the Honorable Chief Guest, and the Pro Vice-Chancellor of Sher-e-Bangla Agricultural University, Prof. Dr. Md. Belal Hossain, attended as Special Guest. The Poster Session was also inaugurated by the Honorable Chief Guest.

The welcome address was delivered by Prof. Dr. Jamilur Rahman of the Department of Genetics and Plant Breeding of Sher-e-Bangla Agricultural University as the local organizing secretary. Prof. Dr. Md. Ekramul

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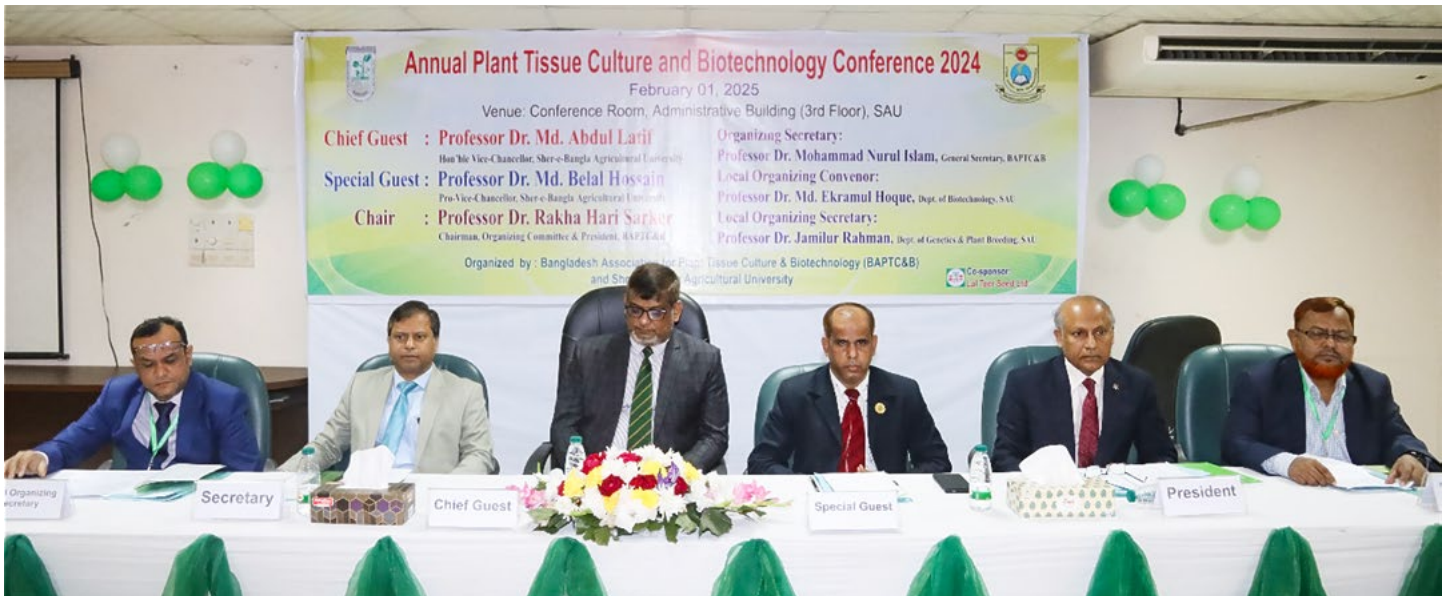


*Guests during the conference's inaugural session (1 February 2025).*

Hoque of the Department of Biotechnology of Sher-e-Bangla Agricultural University also spoke on this occasion as the convenor of the local organizing secretary.

In his speech, the Chief Guest, Prof. Dr. Md. Abdul Latif, urged participants to work together to enhance crop varieties through modern biotechnology techniques, with the specific aim of developing high-yielding, nutritious, and climate-resilient crops for Bangladesh. In his address, the Special Guest, Prof. Dr. Md. Belal Hossain, focused on the development of disease resistance for important crops in Bangladesh through the application of modern biotechnology.

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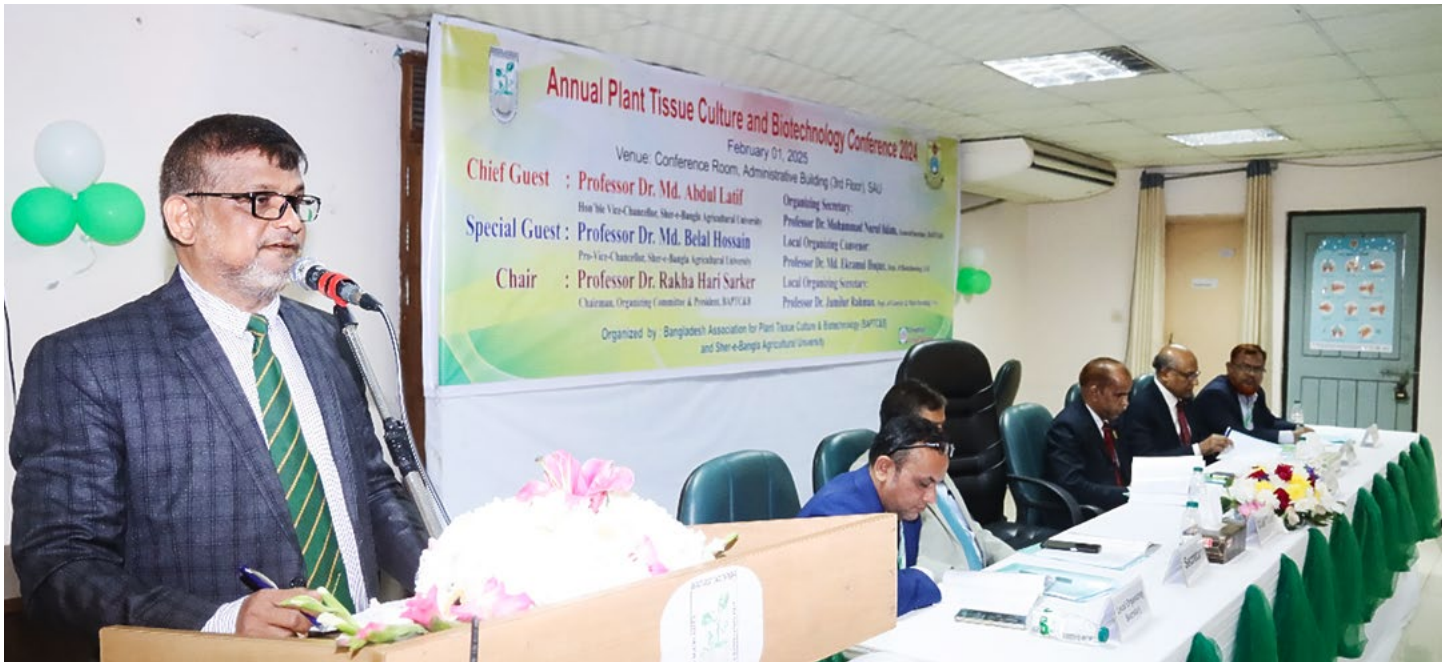
In his presidential address, Prof. Dr. Rakha Hari Sarker emphasized the overall endeavors of BAPTC&B to advance biotechnology applications in Bangladesh. He also emphasized how the association helps organize various training programs for scientists, business communities, and policymakers in Bangladesh in the areas of plant tissue culture, biotechnology, and biosafety. In his remarks, Prof. Dr. Mohmmad Nurul Islam, General Secretary of BAPTC&B, expressed his gratitude to the conference's volunteers and organizers.

Following the inaugural session, there were two scientific sessions, during which fifteen papers were presented. These papers covered the applications of tissue culture for many crops, the use of modern breeding techniques for the improvement of crops towards the development of biotic and abiotic stress tolerance, and microbial biotechnology. In this session, Prof. Dr. Md. Ekramul Hoque of SAU's Department of Biotechnology presented his research results for the creation of a novel tissue culture medium. Dr. Lutful Hassan, UGC Professor, delivered a presentation about the status of rice breeding and biotechnology in Bangladesh. In addition, Prof. Dr. Rakha Hari Sarker led a discussion about the prospects and challenges of genome editing technology in Bangladesh and presented various components of the *Standard Operating Procedures for Research and Release of Genome Edited Plants of Categories of SDN-1 and SDN-2, 2023* (SOPs), which were developed by Bangladesh for research and




*Prof. Dr. Md. Abdul Latif, Vice-Chancellor of Sher-e-Bangla Agricultural University, addressing the audience as the Honorable Chief Guest (1 February 2025).*

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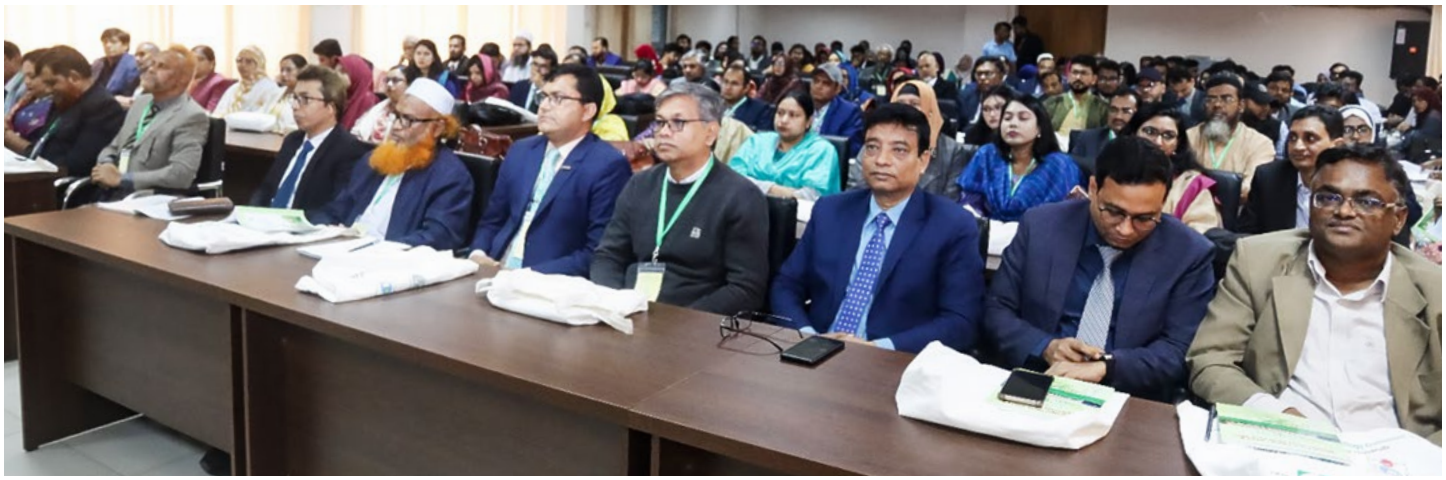

*Participants during the conference's inaugural session (1 February 2025).*

product development using genome editing technology. Prof. Sarker also provided an update on the state of research for using plant genetic engineering technology to improve crop varieties, focusing on current biosafety issues in Bangladesh.

The day-long poster session, during which presenters discussed the results of their research findings, was the most important and appreciated part of the conference. Approximately 80 posters were presented, the majority of which were by young scientists and researchers. Following an evaluation, three top posters were awarded the "Professor Dr. Md. Imdadul Hoque Poster Award." The award for best presentation from the scientific sessions was also given to two young presenters.

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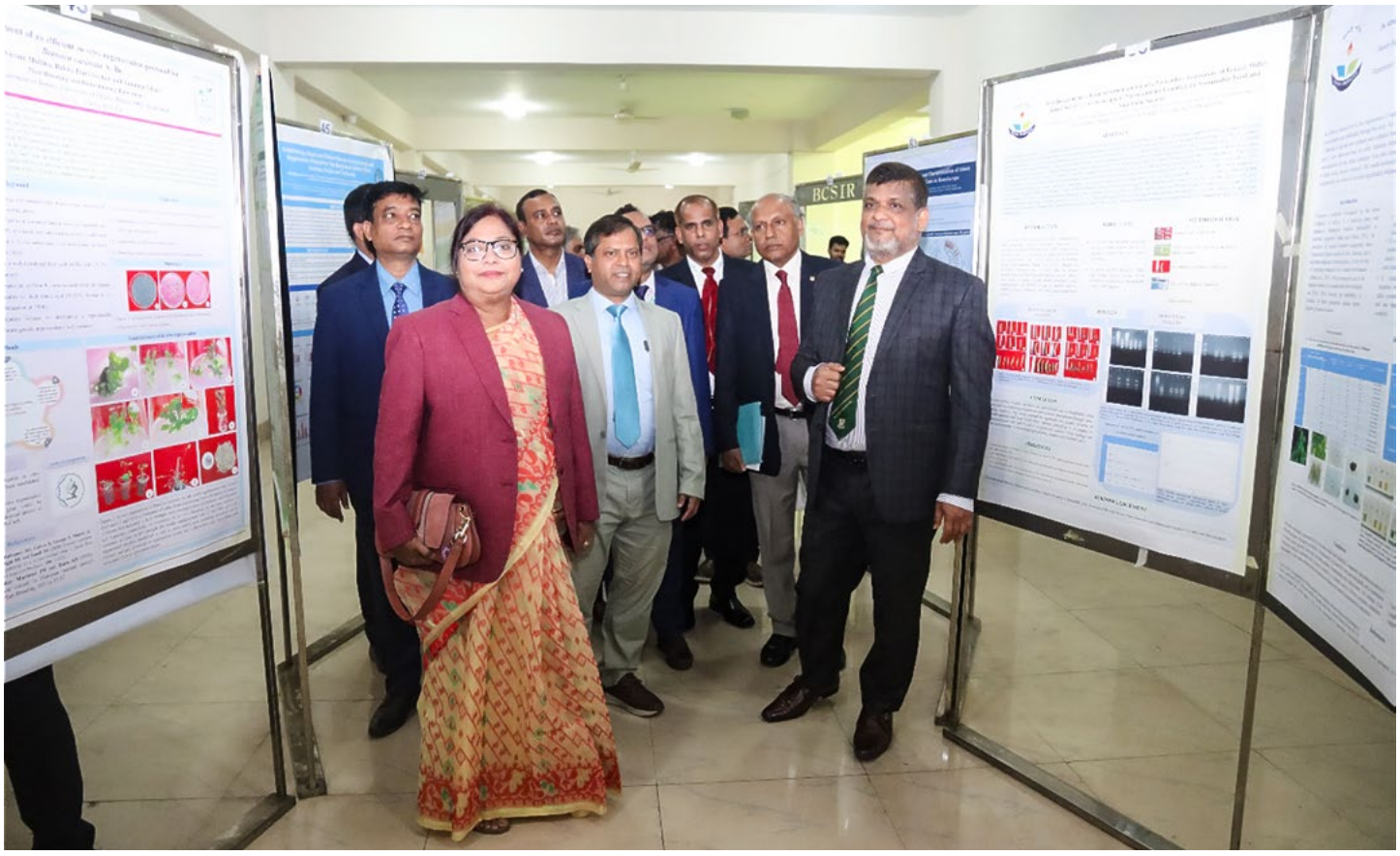
BAPTC&B's "Annual Plant Tissue Culture & Biotechnology Conference 2024" yielded many positive outcomes. Participants gained invaluable knowledge and honed their skills in plant tissue culture and biotechnology. Furthermore, the conference catalyzed the formation of new collaborations and partnerships between researchers, academics, and industry professionals, fostering a spirit of collective innovation. By raising awareness of plant biotechnology's potential to address agricultural and food security challenges, the event aimed to stimulate further research and development efforts in the field. Ultimately, the conference contributed to cultivating a robust and dynamic plant biotechnology community in Bangladesh and served as a pivotal catalyst for progress in plant biotechnology. By uniting diverse stakeholders and providing a platform for knowledge sharing, collaboration, and capacity building, the conference played a vital role in addressing critical agricultural and food security challenges. The enduring efforts of BAPTC&B continue to shape the future of plant biotechnology in Bangladesh.




*Guests during the conference's poster session (1 February 2025).*

BANGLADESH

# ACI Seed Hosts Training on Genome Editing for Crop Improvement

Training Unit, Advanced Chemical Industries Limited (ACI Seed)


*Participants of the training program on the Application of Genome Editing for Crop Improvement at the ACI Training Centre in Dhaka (25 February 2025).*

Advanced Chemical Industries Limited (ACI Seed) successfully organized a day-long training program titled "Application of Genome Editing for Crop Improvement" at the ACI Training Centre, located in the Tejgaon Industrial Area of Dhaka. Prof. Dr. Rakha Hari Sarker from the Department of Botany of the University of Dhaka conducted the training. This program was held on 25 February 2025 and brought together 18 young and experienced scientists from ACI Crop Genetics to explore the transformative potential of genome-editing tools in modern agriculture.

During the training, Prof. Sarker provided in-depth insights into cutting-edge genome-editing technologies, including CRISPR-Cas9, and their applications in enhancing crop traits, increasing yield, and ensuring agricultural sustainability. The session covered key advancements in plant genetics, focusing on stress tolerance, disease resistance, and nutritional enhancement through precise genetic modifications. Prof. Sarker also addressed the various components of the *Standard Operating Procedures for Research and Release of Genome Edited Plants of Categories of SDN-1 and SDN-2, 2023* (SOPs), which was developed by the Ministry of Agriculture, Government of the People's Republic of Bangladesh for the research and development of products through genome editing technology.

Participants engaged in interactive discussions, exploring how these advancements could accelerate varietal development in rice, wheat, vegetables, and other crops to address emerging agricultural challenges. The training highlighted the role of genome editing in strengthening food security, reducing environmental impact, and improving breeding efficiency.

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ACI Seed remains committed to innovation and capacity-building, ensuring its scientists stay at the forefront of agricultural biotechnology. This initiative is part of ACI Seed's ongoing efforts to integrate cutting-edge research with practical solutions to enhance productivity and sustainability in Bangladesh's agriculture sector.

The program was inaugurated by Masud Karim, Head of Training, and presided over by Mohammad Mizanur Rahaman, Business Operation Manager, ACI Seed, who emphasized the importance of adopting modern technologies in Bangladesh's agricultural sector.

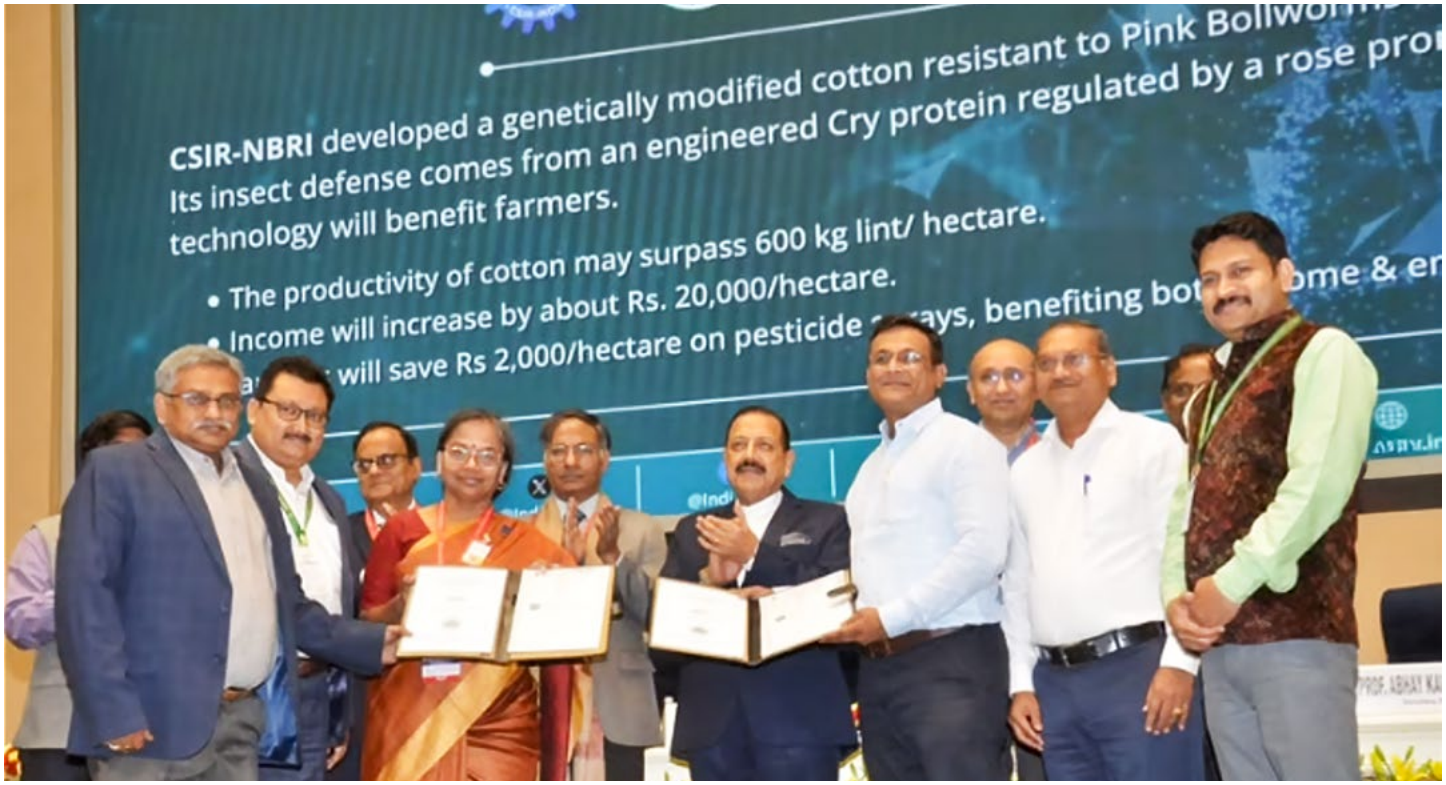
Organized by ACI PLC's Learning & Development team, the event provided an engaging and informative platform for participants to discuss current research, ethical considerations, and regulatory frameworks. The training marked a significant step toward harnessing scientific advancements for sustainable crop production.


*ACI Centre, Tejgaon Industrial Area, Dhaka, Bangladesh.*

INDIA

# Agreement Between CSIR-National Botanical Research Institute (NBRI) and Ankur Seeds for GM Cotton Resistant to Pink Bollworm

Dr. Vibha Ahuja, Chief General Manager, Biotech Consortium India Limited




*Guests at the signing ceremony (28 February 2025).*

The Council of Scientific and Industrial Research (CSIR)-National Botanical Research Institute (NBRI) in Lucknow signed a *Material Transfer Agreement* for pink bollworm-resistant genetically modified (GM) cotton technology with M/s Ankur Seeds Pvt. Ltd. The agreement was signed in the presence of Dr. Jitendra Singh, Hon'ble Minister, Ministry of Science and Technology, Government of India, and Dr. N. Kalaiselvi, CSIR Director General, on the occasion of National Science Day (28 February 2025) at Vigyan Bhawan in New Delhi.

**Researchers at NBRI led by Dr. P. K. Singh developed the pink bollworm-resistant GM cotton technology using a novel insecticidal gene.**

Researchers at NBRI led by Dr. P. K. Singh developed the pink bollworm-resistant GM cotton technology using a novel insecticidal gene. This indigenous gene, uniquely effective against pink bollworm, was successfully tested for pink bollworm resistance. Rigorous laboratory trials at NBRI showed that the new GM cotton is highly tolerant to pink bollworm.

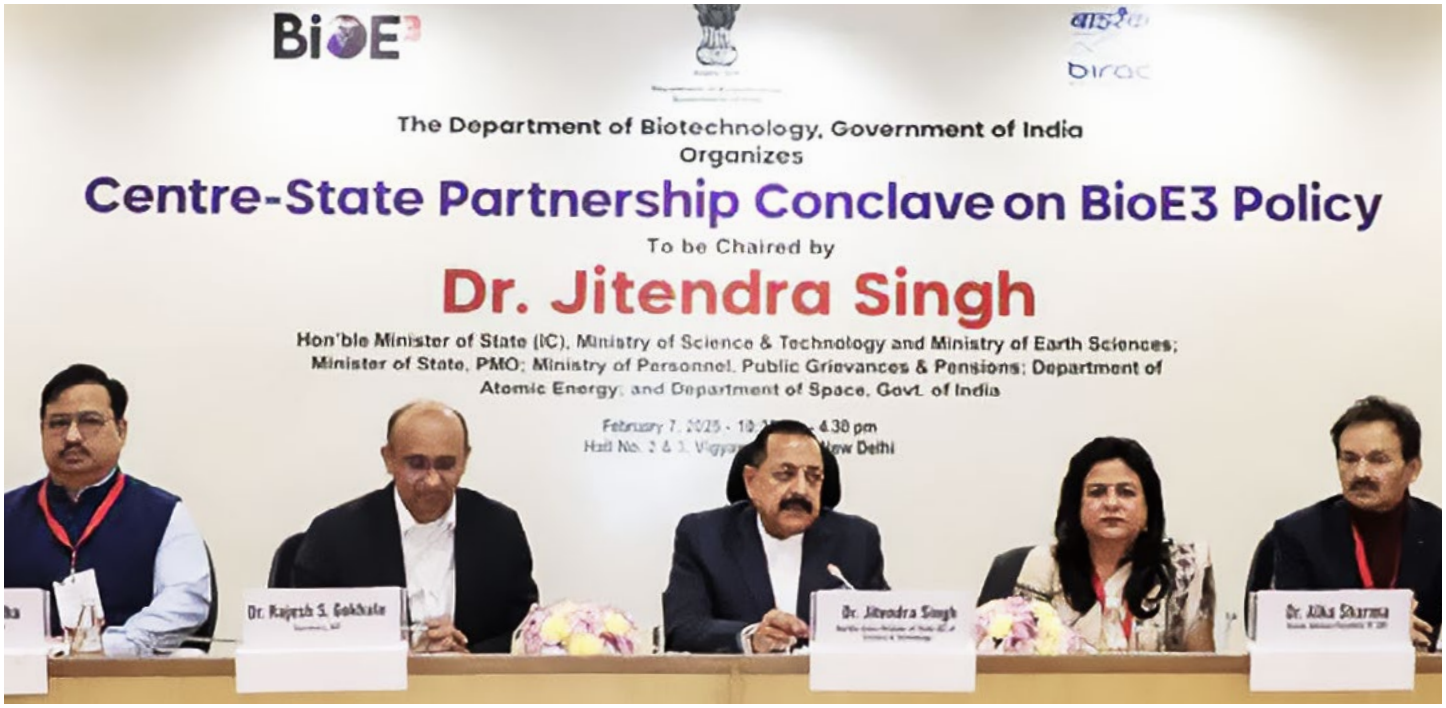
In collaboration with Ankur Seeds, a Nagpur-based agribiotech company, safety studies were undertaken per regulatory guidelines, generating extensive multi-location data from field trials with NBRI's proprietary hybrid cotton varieties. This technology's introduction will provide significant benefits to farmers by protecting cotton from the persistent threat of pink bollworm.

*Pink bollworm in cotton © Anil Choudhary | Dreamstime.com*

INDIA

## Establishment of "BioE3 Cells" for Biomanufacturing Implementation

Dr. Vibha Ahuja, Chief General Manager, Biotech Consortium India Limited (BCIL)




*Guests at the Centre-State Partnership Conclave on BioE3 Policy (7 February 2025).*

The Department of Biotechnology (DBT), Government of India, has proposed to set up "BioE3 Cells" to serve as interconnected knowledge hubs, linking state and national stakeholders to facilitate the effective implementation of the *BioE3 Policy*. Established at the state level, these cells will act as central platforms for knowledge exchange, policy coordination, and technology adoption in the biomanufacturing sector. A booklet on the topic was released by Dr. Jitendra Singh, Minister of State (I/C), Ministry of Science & Technology, Government of India.

**The primary goal of the BioE3 Cells is to ensure biomanufacturing initiatives are closely aligned with each state's specific priorities, resources, and strengths.**

The primary goal of the BioE3 Cells is to ensure biomanufacturing initiatives are closely aligned with each state's specific priorities, resources, and strengths, while also staying connected to broader national objectives. He emphasized that by establishing a nationwide network of BioE3 Cells, the government aims to facilitate the integration of emerging technologies, innovative research, and sustainable biomanufacturing practices across regions, ensuring a cohesive and efficient approach to biotechnology development in India.

*Press Release: pib.gov.in/PressReleaseIframePage.aspx?PRID=2100800*

RESOURCE HIGHLIGHT

## Regulations for Genetic Modification Technology: 50 Years After the Asilomar Conference


Safety regulations for genetically engineered organisms were first initiated at a conference held in February 1975. Taking place in Asilomar, USA, it is referred to as the "Asilomar Conference" and focused on recombinant DNA technology. To mark the 50th anniversary of the Asilomar Conference, a focus issue about how genetic modification is regulated today was published in the journal *Trends in Biotechnology* (10.1016/j.tibtech.2024.11.003). Some of the key papers and expert opinions are highlighted below:

- *Risk Appropriate, Science-Based Innovation Regulations are Important (Opinion):* Stuart Smyth and colleagues review evidence on whether regulatory delays have resulted in economic, environmental, and resource losses.
- *Regulation of Animal and Plant Agricultural Biotechnology (Opinion):* Simona Lubieniechi and colleagues discuss how gene editing techniques such as CRISPR-Cas9 offer an opportunity to rethink the regulation of agricultural biotechnologies.
- *Human Health and Genetic Technology (Opinion):* Hans-Georg Dederer discusses success stories in public health, such as insulin produced using genetically modified *E. coli*, and reflects on the potential of future applications.
- *Recombinant DNA - Unlocking Untapped Microbial Potential for Innovation in Crop Agriculture (Review)*: Aranksha Thakor and Trevor Charles discuss how genetically engineered soil microbes could offer an alternative to chemical fertilizers and pesticides and help plants resist climate stressors

**Access the press release below for more detailed descriptions and links to each of the articles:**
**https://www.eurekalert.org/news-releases/1074439**

## CALENDAR OF EVENTS

| EVENT | ORGANIZED BY | DATE | WEBSITE |
|---|---|---|---|
| **INDIA** | | | |
| PAG ASIA2025 | The Plant & Animal Genome Conference | 18-20 March 2025<br>Gurgaon | https://intlpagasia.org/2025/ |
| Workshop on Recent Advances in Plant Biotechnology | Department of Biotechnology (DBT)-North East Centre for Agricultural Biotechnology, and Department of Agricultural Biotechnology-Assam Agricultural University, and ICAR-Indian Institute of Pulses Research | 19-21 March 2025<br>Jorhat | https://www.aau.ac.in/ |
| Hands-On Training in Carbon Capture and Biofuels | International Centre for Genetic Engineering and Biotechnology (ICGEB) | 9-13 June 2025<br>New Delhi | https://www.icgeb.org/carbon-capture-and-biofuels-new-delhi-2025/ |
| International Conference on Ornamental Horticulture (ICOH-2025): From Science to Society | Tamil Nadu Agricultural University | 26-28 June 2025<br>Coimbatore | https://tnau.ac.in/news-2/ |
| South Asian Biotechnology Conference | South Asian University and ICGEB | 29 October-1 November 2025<br>New Delhi | https://sau.int/events/<br>https://www.icgeb.org/south-asian-biotechnology-conference-india-2025/ |
| **INTERNATIONAL** | | | |
| 2nd Global Congress on New and Emerging Genetic Biocontrol Technologies | African Genetic Biocontrol Consortium | 17-20 March 2025<br>Accra, Ghana | https://conference2025.genbioconsortium.africa/ |
| 17th ISBR Symposium (ISBR 2025) | International Society for Biosafety Research | 2-6 November 2025<br>Ghent, Belgium | https://isbr.info/ |

SOUTH ASIA BIOSAFETY PROGRAM

**The South Asia Biosafety Program (SABP)** is an international development program implemented in India and Bangladesh by the Agriculture & Food Systems Institute (AFSI). 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.

Agriculture & Food Systems Institute

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