

# South Asia Biosafety Program

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2022**

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## BANGLADESH

### First National Biotechnology Olympiad 2022 Held at Jahangirnagar University

Tanvir Ahamed, Lecturer, Department of Biotechnology and Genetic Engineering, Jahangirnagar University



Faculty members from the Department of Biotechnology and Genetic Engineering, Jahangirnagar University and members of the Biotech Club (November 11, 2022).

The Biotech Club of the Department of Biotechnology and Genetic Engineering (BGE), Jahangirnagar University (JU) organized “Bio-Xin Cosmeceuticals 1<sup>st</sup> National Biotechnology Olympiad 2022” on November 11, 2022 at the university campus. The National Institute of Biotechnology (NIB) and Farming Future Bangladesh (FFB) supported the program as co-organizers. The event was also supported by the National Museum of Science and Technology.

The goal of the event was to disseminate ideas and raise awareness of biotechnology among young learners from schools, colleges, and universities. The Biotech Club believes that such events are instrumental in generating a keen interest in biotechnology among young students at various levels and help in developing scientific minds with critical thinking abilities.

There were different segments for interested participants. At the beginning of the day, an hour-long contest was conducted in six categories. About 1100 students from 30 different universities, as well as students from over 100 schools and colleges nationwide, participated in the Olympiad session.

Prof. Dr. Mohammad Mehedi Hasan Khan, Convener, Dean Council, Sylhet Agricultural University inaugurated the Olympiad. He expressed his gratitude towards the organizing committee for organizing a great event that attracted over a thousand biotechnology enthusiasts from all over the country. He encouraged the organizers of the event to hold it every year. Renowned faculty members from different reputed universities and biotechnology professionals from all over the country were present in an interactive question and answer session, followed by the inauguration and contest, including Prof. Dr. Md. Nuhu Alam, Dean, Faculty of Biological Sciences, JU; Prof. Dr. Umme Salma Zohora, Chairman, BGE, JU; Prof. Dr. Sabina Yasmin, Chairman, Genetic Engineering and Biotechnology, University of Dhaka; Prof. Dr. Nazneen Nahar Islam, Chairman, Genetic Engineering and Biotechnology, University of

Chittagong; Prof. Dr. Ashutosh Das, Dean (In-Charge), Faculty of Biotechnology & Genetic Engineering, Chattogram Veterinary and Animal Sciences University; and others. Prof. Dr. Umme Salma Zohora expressed her gratitude for the overwhelming response from the participants and assured them that this event will be continued in the future.

Another attractive session of this Olympiad was the popular Lecture on Science entitled “The Joy of Doing Research,” which was delivered by UGC Prof. Dr. Haseena Khan from the University of Dhaka. This eminent scientist, who led the decoding of the genome sequence of the national fish Hilsa and contributed to the decoding of the jute genome, shared the story of finding a microorganism in jute with the power of antibiotics, which indicates research can lead to the opening of doors to possibilities for young minds. She also shared her realization from her long research life that she has learned from the cells that cells work in such a controlled manner, follow a chain of command, and that everything in a cell is organized. These have influenced her personal and professional life. The talk was well accepted and enjoyed by the participants.

The results of the competition were announced in the afternoon session, followed by a prize distribution ceremony. A total of 30 students received awards in six categories.

The Biotech Club, the planner and organizer of this event, is a co-curricular club from the Department of Biotechnology and Genetic Engineering, Jahangirnagar University. After its initiation in 2013, it has grown in the last nine years to become one of the most renowned clubs in the university, as well as in the biotechnology community. The club has successfully organized national and international events in the last few years, including Biotech Fest 2020, BABG 1<sup>st</sup> National Congress 2017, National Biotech Fair 2013, and the International Seminar on Biotechnology.



## 5<sup>th</sup> Young Scientist Congress 2022

Sium Ahmed, Biosafety Officer, South Asia Biosafety Program



Eminent scientists, academy fellows, and some participants after the 5<sup>th</sup> Young Scientist Congress (November 25, 2022).

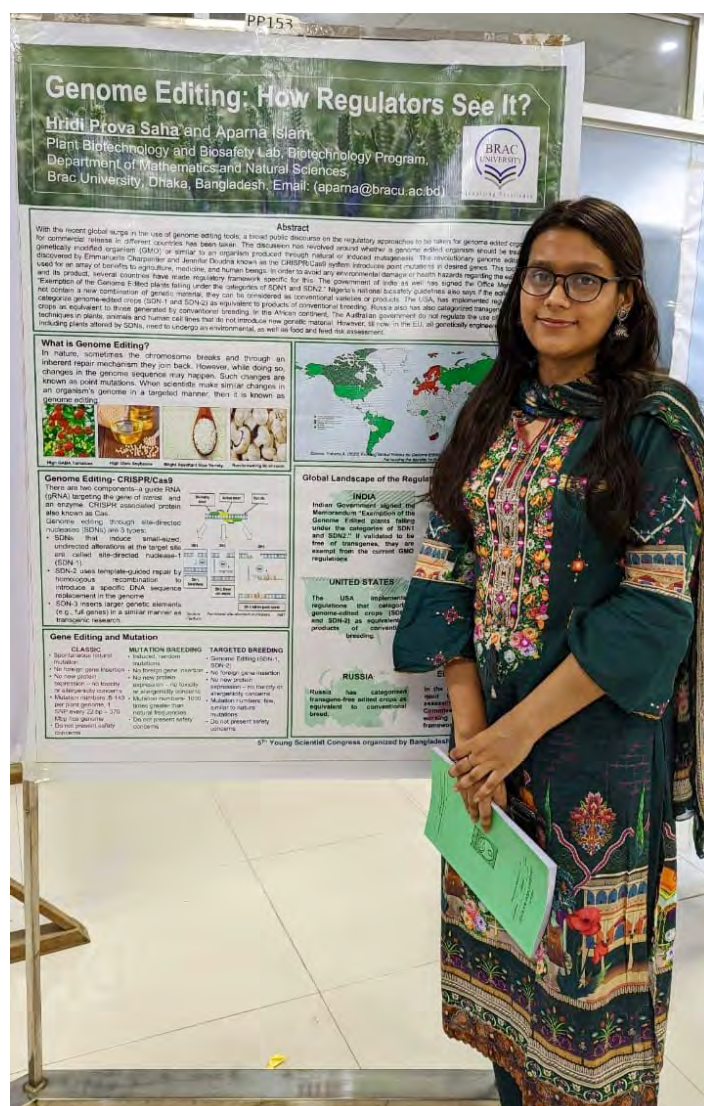
Bangladesh is a country with a relatively large proportion of young people. Blessed with great potential, this young generation has been leading the country's development. The government of Bangladesh has felt the importance of equipping this young generation with frontline science, technology, and innovation (STI) tools so that they can better serve society and prepare themselves to face the challenges in the future. Realizing the importance of attracting the best young minds to science, the Bangladesh Academy of Sciences (BAS) has initiated a series of Young Scientist Congresses, where senior scientists and experts from home and abroad share their knowledge and experience with their younger counterparts. The fifth congress of the series was designed to highlight research areas addressing some of the major challenges faced by the country, especially in the health and environment sectors.

Organized by the BAS with support from AKIJ Group Limited, Union Bank Limited, and the National Museum of Science and Technology, this conference attracted more than 350 participants, including academy fellows, academicians, renowned scientists, and young science aspirants. The congress took place during November 25-27, 2022, at the National Science & Technology Complex. The three-day event was divided into four plenary thematic areas: (1) Biological and Agricultural Sciences, (2) Physical, Chemical, Natural Resource, and Environmental Sciences, (3) Mathematical, Engineering, and Computer Sciences, and (4) Health, Nutritional, and Pharmaceutical Sciences.

The congress was inaugurated by Mr. MA Mannan, MP, Honorable Minister, Ministry of Planning, Government of the People's Republic of Bangladesh as the Chief Guest, while Emeritus Prof. Dr. AK Azad Chowdhury, President, BAS served as the chairperson of the inaugural ceremony. Maj. Gen. (Retd.) Prof. Dr. ASM Matiur Rahman, Chairperson of the organizing committee, welcomed the participants. Prof. Dr. Haseena Khan, Secretary, BAS provided the introduction to BAS and Prof. Dr. Liaquat Ali, Organizing Secretary of the congress, delivered the Vote of Thanks. The theme lecture entitled "Young Scientists for Health and Environment" was delivered by Dr. Qazi Kholiquzzaman Ahmad, Chairman, Palli Karma Sahayak Foundation (PKSF). In addition, the congress accommodated two plenary lectures and 24 invited lectures from eminent scientists.

Furthermore, there were 86 oral and 153 poster presentations by young scientists throughout the three-day event. This large number of scientific presentations gained interest among scientists from diversified fields and made the congress a unique event. This congress was an assemblage of young minds for the betterment of humanity in a way that the country had never seen before.

The concluding session of the congress was addressed by Mr. Ziaul Hasan, NDC, Senior Secretary, Ministry of Science and Technology, Government of the People's Republic of Bangladesh. Among all the highly informative presentations, the best oral and poster presenters were encouraged with awards.



Hridi Prova Saha with her poster presentation at the 5<sup>th</sup> Young Scientist Congress.



## Honoring Our Heroes: An Event to Pay Respect to Bangladeshi Biotechnologists for Their Selfless Effort in COVID Times

Md. Mehadi Hasan Sohag, General Secretary, Bangladesh Association of Biotechnology Graduates (BABG) and Assistant Professor, Department of Genetic Engineering and Biotechnology, Jagannath University



Guests and awardees at the Honoring Our Heroes event (November 26, 2022).

The COVID-19 outbreak was undoubtedly the most unprecedented event of this century. During this challenging time, some courageous frontliners came out to save humanity from this uncertainty, whom we all call the real superheroes. Though doctors and nurses, as well as clinical management people, were the obvious focal points of COVID-19 management, the unutterable contribution of other contributors, especially biotechnologists, was almost under-recognized.

From the perspective of Bangladesh, when COVID-19 embarked on its peak, numerous laboratories were aided to equip the testing facilities maintaining the containment biosafety level 2, guided by the biotechnology academia and professionals. Several biotechnologists served as experts at that time to provide training on RT-PCR across the country, as the experimental protocol was very new to health professionals and medical technologists. It is worth mentioning that hundreds of biotechnology graduates volunteered for COVID-19 sample collection, testing, and report analysis in 25 medical college hospitals across the country for a period of three months to one year. Moreover, four universities established COVID-19 detection laboratories where faculty and graduates worked tirelessly. Biotechnology academia and professionals also worked on the genome sequencing of the coronavirus and published research articles and sub-editorials for building awareness. As a whole, the biotechnology community aimed to build overall capacity, provided a massive contribution to private laboratories, and led the local development of detection kits during the pandemic.

To pay tribute to the unsung heroes from the time of COVID-19, the Bangladesh Association of Biotechnology Graduates (BABG) organized an event entitled "Honoring Our Heroes" on November 26, 2022 at the

Seminar Room, Mukarram Hossain Khundker Biggan Bhaban, University of Dhaka. On that occasion, 23 faculty members and professionals were honored as "Biotech Icon" and 53 biotech graduates were credited as "Biotech Hero." The Biotech Icons and Heroes shared incredible stories of their sacrifices during the voluntary effort. Unsurprisingly, all of them were very happy and proud to be a part of the COVID-19 management, and the biotechnology community has always praised their outstanding contribution when the nation needed them.

Dr. Shahryar Nabi, Honorable Dean, Faculty of Medicine, DU graced the event as the Chief Guest, and Prof. Dr. Mohammad Mehedi Hasan Khan, Convener, Dean Council, Sylhet Agricultural University served as the Special Guest. Distinguished Professors and Chairpersons from the biotechnology discipline from different universities were present as the Guests of Honor. Dr. Muhammad Sougatul Islam, President, BABG shared the current objectives of BABG as the only platform for Bangladeshi biotechnology graduates. Mr. Md. Mehadi Hasan Sohag, General Secretary, BABG served as the Chair of the event, while Mr. Sium Ahmed, Office Secretary, BABG contributed as the Convener of the Organizing Committee.

Officially, BABG started its journey in 2017 as a national platform, and now, the third executive committee is running to uphold the interests of biotechnology graduates in the public and private sectors. During COVID-19 times, BABG worked for the recognition of the voluntary service of the graduates in different laboratories and hospitals from the Directorate of Health and always raised its voice for the inclusion of biotechnologists in health sectors. Furthermore, BABG is trying to create awareness among the policymakers of our country regarding the incorporation of biotech graduates in all suitable sectors.

**23 faculty members and professionals were honored as "Biotech Icon" and 53 biotech graduates were credited as "Biotech Hero."**

### ANNOUNCEMENT

#### Biotechnology Research and Innovation Council (BRIC) in India

The creation of a single apex autonomous body—the Biotechnology Research and Innovation Council (BRIC)—has been approved in India, subsuming 14 autonomous institutions of the Department of Biotechnology (DBT) to achieve centralized and unified governance, maximizing the impact of biotech research.

The restructuring of DBT institutes is being carried out with a larger goal to enhance the scientific character and science outcomes at the institutes by building research synergies, new education programs in line with the National Education Policy, improving human resource structures across cadres, and effective management and monetization of assets emanating from the research being carried out.

It is expected that BRIC will build on the foundations developed at the DBT institutions to foster synergies while maintaining their distinct research mandates. With an emphasis on interdisciplinary interactions that cut across institutional boundaries, BRIC institutes will undertake cutting-edge research addressing national priorities.

Learn more at: <https://pib.gov.in/PressReleaseDetailm.aspx?PRID=1880328>

## Workshop on Genome Editing in Agriculture: Opportunities and Enabling Policies Held in Coimbatore, Tamil Nadu

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

Tamil Nadu Agricultural University (TNAU), Coimbatore and Biotech Consortium India Limited (BCIL) organized a workshop on "Genome Editing in Agriculture: Opportunities and Enabling Policies" on November 29, 2022 in Coimbatore. The day-long workshop featured informative talks by experts on the use of genome editing for crop improvement and policies in India. There was an opening session followed by two technical sessions and a panel discussion. Approximately 130 participants from universities and research institutions in Tamil Nadu, as well as representatives from the Tamil Nadu Department of Agriculture and industry, attended the workshop.

Prof. Senthil Natesan, Director, Centre for Plant Molecular Biology and Biotechnology (CPMB&B), TNAU welcomed the experts and participants and stated that the significance of single nucleotide changes occurring naturally in plants and those acquired by plant breeding were accepted years ago. He added that genome editing provides a tool for making these changes in a precise manner and has great potential for crop improvement. He referred to the recently issued guidelines and standard operating procedures (SOPs) for gene-edited plants and stressed the urgent need to educate various stakeholders about the opportunities of gene editing in the development of new crop varieties and evolving policies. Introducing the workshop, Dr. Vibha Ahuja, Chief General Manager, BCIL indicated that the workshop had been planned to share the current knowledge on genome editing in plants, along with the policies to promote research and product development in this area. She informed participants that the four presentations in Technical Session 1 would cover both scientific and regulatory aspects. Dr. M. Ramasami, Chairman, Rasi Seeds Pvt. Ltd. highlighted the potential gaps in the production and productivity of important food and cash crops in India when compared to the global scenario. He indicated that the adoption of new technologies is extremely important to meet the increasing global demand for food by 2050. He also stressed the importance of public-private partnerships to ensure that new technologies are made available to farmers in an expeditious manner. Dr. Thamizh Vedan, Registrar, TNAU identified the lack of desirable plant traits as an agricultural challenge and stressed the benefits of the Nobel Prize-winning gene editing technique CRISPR/Cas9 for generating better crops.

Dr. C. Viswanathan, Joint Director (Research), Indian Agricultural Research Institute (IARI), New Delhi complimented TNAU as one of the

leading institutions with capabilities in advanced molecular biology techniques and several crops/traits under advanced stages of research. He also mentioned network projects where TNAU is an active partner. He indicated that with the issuance of enabling policies, all institutions need to work hard to develop and commercialize products of gene editing for the benefit of farmers.

In the first technical session, presentations were made by Dr. C. Viswanathan, Dr. Naveen Bisht, Dr. D. Sudhakar, and Dr. Vibha Ahuja. The three presentations by Dr. Viswanathan, Dr. Bisht, and Dr. Sudhakar focussed on ongoing research initiatives in their respective institutions, in addition to explaining the scientific aspects and advances in gene editing. Dr. Vibha Ahuja spoke about the office memorandum, guidelines, and standard operating procedures regarding gene-edited plants issued by the government of India in 2022. Presentations in Technical Session 2 were made by institutions in Tamil Nadu, including the Sugarcane Breeding Institute, the Institute of Forest Genetics and Tree Breeding, and Rasi Seeds.

The panel discussion was chaired by Dr. M. Raveendran, Director of Research, TNAU, Coimbatore. The panelists included Dr. R. Ravikesavan, Director of the Centre for Plant Breeding and Genetics, TNAU, Dr. M. Ramasami from Rasi Seeds,

Dr. R. Umarani, Director of Seed Centre in the Directorate of Seed Centre, TNAU, and Dr. Priyadarshini, Tamil Nadu Department of Agriculture. Panelists agreed that genome editing provided enormous opportunities for crop improvement and appreciated the initiatives for streamlining regulatory policies for genome-edited plants in India. However, concerns were expressed regarding access to the technology and protection of varieties produced using genome editing, as the current detection technologies do not differentiate between the lines produced using genome editing or conventional breeding. There were extensive deliberations, and the participants were excited to use this novel tool for crop improvement and to deal with upcoming challenges related to climate change, disease, and improved nutritional qualities. The event was supported by the Federation of Seed Industry of India (FSII) as part of a continuing series to raise awareness at the state level, in close collaboration with state agricultural universities and other related institutions. Dr. E. Kokiladevi, Professor and Head, Department of Biotechnology, TNAU thanked all the speakers and participants for their active participation.

**Approximately 130 participants from universities and research institutions in Tamil Nadu, as well as representatives from the Tamil Nadu Department of Agriculture and industry, attended the workshop.**



Speakers at the workshop in Coimbatore (November 29, 2022).



Participants at the workshop in Coimbatore (November 29, 2022).



## Webinar on DDGS for Animal Feed: Opportunities and Challenges

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

The webinar DDGS for Animal Feed: Opportunities and Challenges was jointly organized by the Compound Livestock Feed Manufacturers' Association of India (CLFMA), Karnataka Poultry Farmers & Breeders Association (KPFBA), All Indian Poultry Breeders Association (AIPBA), Broiler Co-ordination Committee (BCC), and Biotech Consortium India Limited (BCIL) on November 11, 2022. Around 250 participants representing a cross-section of stakeholders, including scientists, regulators, industry, etc., attended the webinar.

Dr. Vibha Ahuja, Chief General Manager, Biotech Consortium India Limited (BCIL) welcomed the participants and informed them that the webinar had been organized to share information about various aspects of using Dried Distiller's Grains with Solubles (DDGS) for animal feed. Giving an overview, Dr. S.S. Pattabhirama, Chief Nutritionist from Nanda Group, indicated that DDGS—a co-product of grain-based ethanol—is a potential source of protein and energy for animals. He informed participants that with the government promoting grain-based ethanol production to meet the blending target of 20% ethanol in fuel (E20) by 2025, there would be a rise in the availability of DDGS from corn and rice. He shared his concerns regarding the quality of currently available rice-based DDGS in India, which needs attention. This was followed by a detailed presentation by Dr. A. Natarajan, Professor and Head, Veterinary College & Research Institute of Tamil Nadu Veterinary and Animal Sciences University, Namakkal on the quality considerations of rice- and corn-based DDGS, with respect to the production and health of broilers, layers, and dairy animals. Dr. Natarajan shared details of analytical studies undertaken in his lab and recommended that optimized amounts of DDGS can be used in the feeds of poultry and dairy for better growth and health.

Mr. Sanjay Patel, Sabar Dairy, Himatnagar, Gujarat and Dr. Geetha Pichandi, Assistant General Manager, Suguna Foods Pvt. Ltd shared industry perspectives on DDGS use in poultry, cattle, and aqua sectors. They spoke about the challenges of DDGS use and discussed the importance of consistent nutritive values, minimum aflatoxin levels, prevention of charring, and low moisture content (<12%) in DDGS samples.

From an international perspective, Dr. Budi Tangendjaja, Regional Technical Consultant shared his practical experience in the successful use of corn DDGS for feeding livestock in Southeast Asia. Dr. Ronnie Tan, Regional Aquaculture Consultant recommended up to 15% corn DDGS use as an alternative ingredient in shrimp diet without compromising growth to help dip shrimp feed costs by reducing the dependency on other feed materials like soy, corn, and wheat, whose prices had risen by 10-15%.

Dr. Vibha Ahuja, Chief General Manager, Biotech Consortium India Limited spoke about the regulatory considerations for the use of DDGS derived from GM crops. She informed participants that the import and use of GM corn-derived DDGS would require prior permission from regulatory authorities as GM corn is not approved in India. Since DDGS

is highly processed and does not contain any living modified organism (LMO), Dr. Ahuja suggested such products be exempted from the Rules, 1989 to help meet the requirements of the feed industry.

The webinar featured an engaging panel discussion amongst eminent industry associates, namely Mr. Neeraj Shrivastava, Chairman, CLFMA of India, Mr. Suresh Chitturi, Vice President, AIPBA, and Dr. M.V.L.N. Raju, Principal Scientist (Nutrition), Directorate of Poultry Research, Hyderabad. They deliberated on the potential opportunities for using DDGS as a protein source by the animal feed industry. A collective consensus was reached on addressing the challenges posed by inconsistencies in feed quality and high costs of feed through biotechnological interventions, such as the use of GM crop derivatives as feed ingredients, to meet the feed requirements of the growing livestock industry. The webinar ended on a hopeful note, with the speakers being optimistic about extensive research, field testing, and streamlining the approval procedures for the cultivation, import, and use of GM crops/GM crop-derived feed in India.

**A collective consensus was reached on addressing the challenges posed by inconsistencies in feed quality and high costs of feed through biotechnological interventions.**

LINK

Access a recording of the webinar at:  
<https://www.youtube.com/watch?v=iRmx8z1NfQw>



Speakers at the webinar on DDGS for Animal Feed: Opportunities and Challenges (November 11, 2022).

## CALENDAR OF EVENTS

EVENT	ORGANIZED BY	DATE	WEBSITE
<b>INDIA</b>			
AICRP (Vegetable Crops) Golden Jubilee National Symposium – New Opportunities in Vegetable Production for Sustainable Development	All India Coordinated Research Project (Vegetable Crops) and Indian Institute of Vegetable Research	December 20-22, 2022 Varanasi	<a href="https://iivr.icar.gov.in/">https://iivr.icar.gov.in/</a>
3 <sup>rd</sup> International Weed Conference – Weed Problems and Management Challenges: Future Perspectives	Indian Society of Weed Science, ICAR-Directorate of Weed Research, and Anand Agricultural University	December 20-23, 2022 Anand	<a href="https://www.isws.org.in/Conference_2022/Default.aspx">https://www.isws.org.in/Conference_2022/Default.aspx</a>
Training Programme on Recent Technological Advancements in Horticulture and Forest Crops	Department of Biotechnology, College of Horticulture, Dr. Yashwant Singh Parmar University of Horticulture & Forestry	December 23-30, 2022 Solan	<a href="https://www.yspuniversity.ac.in/">https://www.yspuniversity.ac.in/</a>
International Conference on Food and Nutritional Security (iFANS-2023)	National Agri-Food Biotechnology Institute, Center of Innovative and Applied Bioprocessing, Indian Society for Plant Physiology, Plant Tissue Culture Association of India, International Center for Genetic Engineering and Biotechnology, and ICAR-National Institute of Plant Biotechnology	January 6-9, 2023 Mohali	<a href="https://ifans.nabi.res.in">https://ifans.nabi.res.in</a>
International Conference on Vegetable Oils-2023 (ICVO 2023): Research, Trade, Value Chain, and Policy	ICAR-Indian Institute of Oilseeds Research and Indian Society of Oilseeds Research, in collaboration with ICRISAT	January 17-21, 2023 Hyderabad	<a href="https://icar-iior.org.in/">https://icar-iior.org.in/</a>
International Seminar and Workshop on CRISPR/Cas-Based Plant Functional Genomics and Computational Modeling (ISWCPC-2023)	CSIR-North East Institute of Science and Technology (NEIST)	January 18-21, 2023 Jorhat (in-person and online)	<a href="https://neist.res.in/iswcpc/">https://neist.res.in/iswcpc/</a>
ICAR-Sponsored Winter School on Development, Evaluation, and Biosafety Assessment of Genome Edited Crops: Hands-On Training	ICAR-Indian Institute of Rice Research (IIRR) and Agri Biotech Foundation (ABF)	January 20-February 9, 2023 Hyderabad	<a href="https://www.icar-iirr.org/index.php/en/">https://www.icar-iirr.org/index.php/en/</a>
<b>INTERNATIONAL</b>			
16 <sup>th</sup> ISBR Symposium	International Society for Biosafety Research	April 30-May 4, 2023 St Louis, Missouri, USA	<a href="https://isbr.info/symposium">https://isbr.info/symposium</a>



**SOUTH ASIA**  
BIOSAFETY PROGRAM

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**USAID**  
FROM THE AMERICAN PEOPLE



The South Asia Biosafety Program (SABP) is an international development program implemented in India and Bangladesh with support from the United States Agency for International Development (USAID). 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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