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South Asia Biosafety Program

NEWSLETTER FOR PRIVATE CIRCULATION ONLY – NOT FOR SALE

INDIA

Exemption of Genome Edited Plants Falling Under the Categories of SDN-1 and SDN-2 from the Provisions of the Biosafety Regulations in India

Dr. Vibha Ahuja, Biotech Consortium India Limited

Genome editing is a versatile technology with great potential for crop improvement by introducing changes in a precise manner. The technology has been applied in multiple sectors to create specific and targeted mutations, and it has been used in plant breeding to obtain plants with improved characteristics. Products of genome editing in plants are already being marketed successfully in the USA, Japan, and elsewhere. Genome editing involves the use of Site Directed Nucleases (SDN) and can be categorized around the type of changes introduced as SDN 1, SDN2, or SDN3. While SDN1 introduces changes in the DNA of the host plant through small insertions/deletions without the addition of exogenous DNA as a template, SDN2 uses a small DNA template to generate a specific desired change. Both approaches yield plants free from foreign DNA and remain indistinguishable from the conventionally bred crop varieties. SDN3, on the contrary, inserts larger DNA elements or a full-length gene of foreign origin, as typical of the development of a GM crop. In India, the manufacture, import, use, research, and release of genetically engineered (GE) organisms and derived products are governed by the rules notified by the Ministry of Environment, Forest and Climate Change (MoEFCC), Government of India, on December 5, 1989, under the Environment (Protection) Act 1986, commonly referred

Recognizing that the SDN 1 and SDN 2 categories of plants are free from any transgenes, the Ministry of Environment, Forest and Climate Change issued a notification on March 30, 2022 to exempt products of SDN1 and SDN2 (free from transgenes) from the provisions of Rules 7 and 11 (both inclusive) of *Rules, 1989.*

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EXEMPTION

F. No. C -12013/3/2020-CS-III
Government of India
Ministry of Environment, Forest and Climate Change
CS-III (Biosafety) Division
Indira Paryavaran Bhawan
Jor Bagh Road, Ali Ganj
New Delhi-110 003
Date:30th March, 2022

OFFICE MEMORANDUM

Sub: Exemption of the Genome Edited plants falling under the categories of SDN1 and SDN2 from the provisions of the Rules, 1989.

The Ministry of Environment, Forest and Climate Change has notified the rules for the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms of Cells, Rules 1989 hereinafter referred as Rule vide No. GSR 1037 (E) dated 5th December 1989, -

2. Rule 20 of the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells Rules 1989 empowers the Ministry of Environment, Forest and Climate Change to exempt an occupier handling a particular microorganism/genetically engineered organism form the application of the provisions of Rule 7 and 11 (both inclusive).

3. Department of Biotechnology, Ministry of Science and Technology; Department of Agriculture Research and Education, Ministry of Agriculture and Farmers Welfare has recommended that the SDN1 and SDN2 Genome Edited Products free from exogenous introduced DNA be exempted from biosafety assessment in pursuance of Rule 20 of the Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells Rules 1989. Wherein, the process of genome edited plants to be carried out under containment, until free from exogenous introduced DNA, will be regulated by Institutional Biosafety Committee following guidelines issued by Central government under information to Review Committee on Genetic Manipulation.

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4. Therefore, the Central government hereby exempts the Genome Edited plants falling the categories of SDN1 and SDN2, which are free of exogenous introduced DNA, from the provisions of Rules 7 to 11 (both inclusive) of the above said rules.

5. For such Genome edited plants to be released as new variety, further development and evaluation will be as per other applicable Laws/Acts/Rules.

6. This issues with the approval of Competent Authority.

30/3/2022
(Naresh Pal Gangwar)
Additional Secretary
mail id: asnpg.mefcc@gov.in

To

1. Secretary, Deptt. of Biotechnology
2. Secretary, Deptt. of Agriculture & Farmers Welfare
3. Secretary, Deptt. of Agriculture Research & Education
4. Chief Secretary (All States/UTs)

Copy to:
1. PPS to Cabinet Secretary
2. PPS to Secretary, MoEFCC

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to as the *Rules, 1989*. The definition of gene technology includes all new techniques for introducing genetic changes.

Recognizing that the SDN 1 and SDN 2 categories of plants are free from any transgenes, the Ministry of Environment, Forest and Climate Change issued a notification on March 30, 2022 to exempt products of SDN1 and SDN2 (free from transgenes) from the provisions of Rules 7 and 11 (both inclusive) of *Rules, 1989*, whereas products of SDN3 (with transgenes) will be treated in the same way as GE organisms under *Rules, 1989*. This exemption has been issued under Rule 20 of *Rules, 1989* that allows the implementing ministry to provide exemptions for specific organisms from its provisions. The process of genome editing plants is to be carried out under containment and will be regulated by the Institutional Biosafety Committee following stipulated guidelines under the Review Committee on Genetic Manipulation.

For their release as new varieties, development and evaluation will be as per other applicable Laws/Acts/Rules. The decision has been taken based on recommendations by the Department of Biotechnology, Ministry of Science and Technology and the Department of Agriculture Research and Education, Ministry of Agriculture and Farmers Welfare.

The potential of gene editing has been recognized as a focus area under the National Biotechnology Development Strategy 2021-2025 and extensive research efforts are underway in both the public and private sector in the country. This landmark decision will play an important role in bringing the benefits of advancements in research to farmers and society.

BANGLADESH

The Third Workshop of the Institutional Biosafety Officer (IBO) Training Program

Dr. Md. Kamrul Islam, Cotton Development Board

Participants and speakers at the Third Workshop of the Institutional Biosafety Officer (IBO) Training Program (March 22, 2022).

The *Third Workshop of the Institutional Biosafety Officer (IBO) Training Program* was held on March 22, 2022, at Hotel Sarina, Dhaka, Bangladesh. The training program was organized by the Ministry of Agriculture, Government of the People's Republic of Bangladesh, in collaboration with the South Asia Biosafety Program (SABP), Agriculture & Food Systems Institute (AFSI), and Biotech Consortium India Limited (BCIL). Twenty scientists from different organizations, including the National Agriculture Research Systems (NARS) institutes and universities, participated in this event.

The participants were very enthusiastic throughout the workshop and took part in the lively discussion during the workshop.

At the beginning of the inaugural session, Dr. Rakha Hari Sarkar, Country Coordinator, SABP and Professor, University of Dhaka, cordially welcomed the participants and gave an overview of the day-long program. Dr. Andrew Roberts, Chief Executive Officer, AFSI, expressed his greetings to all participants and provided a recap of the first and second IBO workshops.

The technical session began with a presentation by Dr. Aparna Islam, Professor, Brac University, on institutional commitment for biosafety compliance, and in particular, biosafety policy and tools. Prof. Islam

Participants during the session led by Dr. Andrew Roberts (March 22, 2022).

Participants during the group exercises (March 22, 2022).

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Speakers at the Third Workshop of the Institutional Biosafety Officer (IBO) Training Program: Dr. Rakha Hari Sarker, Dr. Bhavneet Bajaj, Dr. Aparna Islam, Dr. Vibha Ahuja, Mr. Sium Ahmed, and Dr. Andrew Roberts (March 22, 2022).

emphasized the institutional arrangements needed for ensuring the implementation of the biosafety rules and regulations within the institute. Dr. Bhavneet Bajaj, Manager, Scientific Programs, AFSI, gave a presentation on laboratory facilities and greenhouses/net houses, with an emphasis on key considerations for containment of GE plants. Dr. Bajaj talked about matching the level of containment with risk posed by experimental organisms. She described in detail various physical and biological mechanisms that can be deployed for containment of research material so that researchers comply with Bangladesh's biosafety regulations.

Next in the technical session, a group exercise was conducted by Dr. Roberts on Standard Operating Procedure (SOP) preparation for the management of GE crops in laboratories and greenhouses/screen houses. During the group exercise, participants were divided into four groups and each group was asked to develop a draft SOP for a task related to experimentation, containment, and transport of GE plant materials. The draft SOPs will be refined with support of SABP further in the program. Dr. Vibha Ahuja, Chief General Manager, BCIL and Senior Advisor, SABP, discussed the importance of record-keeping and key components that should be considered in the preparation of recording formats. Finally, Mr. Sium Ahmed, Biosafety Officer, SABP, discussed the biosafety measures that should be taken during handling, storage, transfer, shipment, and disposal of GM plant material, as well as incident management.

The participants were very enthusiastic throughout the workshop and took part in the lively discussion during the workshop. The workshop ended with a discussion of the covered topics in further detail during a question-and-answer session.

INDIA

Biosafety and Biosecurity Training Workshop at ICAR-IARI, New Delhi

Dr. A. Kumar, ICAR-IARI, Drs. Jyoti Batra and Vibha Ahuja, BCIL

Participants of the Biosafety and Biosecurity Training Workshop at ICAR-IARI (March 15, 2022).

Currently, many public research institutions, individually or in collaboration with foreign research partners, have been developing genetically engineered (GE) crops in India. Therefore, it is critical to facilitate the safe development of agricultural biotechnology processes. In this direction, a training *cum* workshop on biosafety and biosecurity sponsored by Biotech Consortium India Limited (BCIL)-Institute Biosafety Committee (IBSC)-National Agricultural Higher Education Project (NAHEP) was conducted at IARI, New Delhi on March 15, 2022, primarily to create awareness among research scholars and young faculty about regulations and approval processes for handling biohazardous agents and materials in the laboratory and experimental field. The program, the first of its kind for students, was inaugurated by Dr. A.K. Singh, Director, ICAR-IARI, New Delhi who assured participants that a course on biosafety will be included in student curricula, citing its importance. Dr. Rashmi Aggarwal, Dean and Joint Director (Education), highlighted the need for practicing biosafety guidelines while conducting thesis project work. Dr. Viswanathan, Principal Investigator, CAAST-project, explained the purpose and role of the NAHEP-CAAST project and Discovery Center to the trainees. Dr. Vibha Ahuja, Chief General Manager, BCIL, conducted the program, along with Dr. A. Kumar, Member Secretary, IBSC, IARI, New Delhi, who moderated the sessions. A total of 50 students participated in the program.

In the opening lecture, Dr. Nitin Kumar Jain, Scientist-F, Department of Biotechnology, Ministry of Science & Technology, Government of India, shared the key provision of the Biosafety Regulatory Framework in India and informed the audience about the Indian Biosafety Knowledge Portal launched by DBT, Government of India. He further apprised participants about various stipulated guidelines in place for regulation of the pharmaceutical and agricultural biotechnology sectors. He also informed participants about import/export control of various items/research material. Dr. Vibha Ahuja highlighted the importance and key components of biosafety management. She explained the classification of organisms into different risk groups according to the risk posed by them and the necessary biosafety practices that need to be followed. In an elegant lecture, Dr. Jyoti Batra, Project Officer, BCIL narrated the first steps in biosafety compliance. She emphasized the importance of personnel training and following standard management practices as key for biosafety compliance. In another informative lecture, Dr. Manoj Prasad, Staff Scientist, NIPGR, New Delhi further emphasized the importance of work practices as per biosafety guidelines. Furthermore, Dr. Celia Chalam, NBPGR, New Delhi delivered a lecture on new guidelines for ensuring biosafety while handling, transferring, and shipping GMOs/LMOs, as per the Cartagena Protocol on Biosafety. Dr. Chalam further discussed the standard operating procedure for the disposal of biohazardous materials. The key highlight of the training was the practical case studies on risk assessment and biosafety levels for research and large-scale activities, with a focus on GMOs/LMOs, delivered by Dr. Vibha Ahuja. The training program ended with a note of thanks by Dr. A. Kumar, Member Secretary (IBSC).

The key highlight of the training was the practical case studies on risk assessment and biosafety levels for research and large-scale activities, with a focus on GMOs/LMOs.

Speakers at the Inaugural Session of the Biosafety and Biosecurity Training Workshop at ICAR-IARI (from left to right): Dr. Rashmi Aggarwal, Dean, ICAR-IARI, Dr. Vibha Ahuja, Chief General Manager, BCIL, Dr. A. K. Singh, Director, ICAR-IARI, and Dr. C. Viswanathan, PI, NAHEP-CAAST Project (March 15, 2022).

Inaugural address by Dr. A. K. Singh, Director, ICAR-IARI, during the Biosafety and Biosecurity Training Workshop (March 15, 2022).

BANGLADESH

Seminar on Putting Biosafety into Practice in Bangladesh at the National Institute of Biotechnology (NIB)

Md. Nazrul Islam, Scientific Officer, NIB

Speakers at the seminar on Putting Biosafety into Practice in Bangladesh at the National Institute of Biotechnology (March 21, 2022).

The National Institute of Biotechnology (NIB) is a public research institute of Bangladesh under the Ministry of Science and Technology. NIB was established by the Government of Bangladesh in 2000 and is located at Ganakbari of Ashulia, Savar, Dhaka. It may be mentioned here that the foundation stone of NIB was laid by Sheikh Hasina, honorable Prime Minister of the People's Republic of Bangladesh on May 14, 2000.

The mandate of this institute is to coordinate all biotechnological research carried out in the country, as well as conduct its own research programs in different areas of biotechnology. The institute is also responsible for creating skilled manpower for biotechnology and genetic engineering. At present, 52 scientists are working in this institute. NIB is the nodal agency in Bangladesh for the biotechnological issues of the South Asian Association for Regional Cooperation (SAARC) countries. Moreover, NIB is the affiliated center of the International Centre for Genetic Engineering and Biotechnology (ICGEB) from Bangladesh.

Currently, researchers at NIB are involved in developing transgenic plants of rice and eggplant. The transgenic eggplants are being maintained in a growth room for evaluating their performance. Additionally, the research team of NIB is planning to multiply and conduct a performance test of some of the salt- and drought-tolerant rice lines available under an agreement between NIB and the Department of Biochemistry and Molecular Biology, University of Dhaka.

The SABP team provided their valuable opinions and suggestions regarding the overall facilities required for carrying out research and development of GE products, as well as committed to working closely with NIB on the development of SOPs and required resources.

For conducting contained and confined trials of the transgenic lines under development, NIB requires properly designed facilities

The SABP team visiting the greenhouse and net house at the National Institute of Biotechnology (March 21, 2022).

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for compliance with the biosafety guidelines, as well as requires Standard Operating Procedures (SOPs) for these purposes. Accordingly, the Director General of NIB, Dr. Md. Salimullah, invited the South Asia Biosafety Program (SABP) team to discuss various biosafety issues related to the development GE crops at NIB. In response, the SABP team visited NIB premises on March 21, 2022. A seminar entitled "Putting Biosafety into Practice in Bangladesh" was held at NIB on that day. From the SABP team, Dr. Andrew F. Roberts, CEO, Agriculture and Food Systems Institute (AFSI), Dr. Bhavneet Bajaj, Manager, Scientific Programs, AFSI, Dr. Rakha Hari Sarker, Country Coordinator, SABP and Professor, University of Dhaka, and Mr. Sium Ahmed, Biosafety Officer, SABP attended the seminar, along with the scientists of NIB and the Director General of NIB. The seminar was conducted by Dr. Nusrat Jahan, Senior Scientific Officer, NIB.

Md. Nazrul Islam, Scientific Officer, NIB delivered a presentation on various activities of NIB and the ongoing transgenic research at the Plant Biotechnology Division. Dr. Roberts delivered a lecture on the history of the development of biosafety regulations in Bangladesh, as well as the various activities and achievements of SABP in Bangladesh. He emphasized the importance of biosafety compliance in the development of GE crops. Dr. Roberts discussed requirements of Standard Operating Procedures (SOPs) and documentation to ensure biosafety measures when working with transgenic crops. He also discussed the difference between the regulatory processes and policies of different countries and regions for genome-edited and genetically engineered crops. Dr. Bajaj shared her journey with the SABP team to ensure proper biosafety in South Asia. There was a lively question and answer session following the discussion.

After the seminar, the SABP team visited the transgenic crop research facilities at NIB, including the under-construction greenhouse and net house with the concerned NIB scientists and the Director General. The SABP team provided their valuable opinions and suggestions regarding the overall facilities required for carrying out research and development of GE products, as well as committed to working closely with NIB on the development of SOPs and required resources.

BANGLADESH

Baseline Information on Pest and Beneficial Insect Biodiversity of Cotton in Bangladesh

Prof. Dr. Mohammad Tofazzal Hossain Howlader, Department of Entomology, Bangladesh Agricultural University

BRBGP 2021 GRANT RECIPIENT

The Biosafety Research in Bangladesh Grants Program (BRBGP) is managed by the Agriculture & Food Systems Institute (AFSI) as part of the USAID-funded South Asia Biosafety Program. Recognizing the need for biosafety research as part of a broader effort to support science-based decision-making and policy development, the BRBGP funded research in 2019-2021 that considered the potential impacts of agricultural biotechnology, particularly genetically engineered crops, on the environment and biodiversity in Bangladesh.

Cotton (*Gossypium* spp.) is the second most important cash crop in Bangladesh after Jute, playing a key role in economic and social welfare. It is grown primarily as a fiber crop, but the seeds can be crushed to extract vegetable oil and protein-rich animal feed. Bangladesh has a glorious history of cotton production for making the finest fabrics, popularly known as "Muslin" by local spinners. Currently, around 4.4 million people are directly involved in textile industries in Bangladesh (Amin, 2018). The weather and soil conditions are favorable for cotton production in the country. Presently, cotton is produced in 131 upazillas in 39 districts in Bangladesh. Over the last six years, the production of cotton has increased gradually, and there is a huge scope for expanding the cultivation of cotton in the country.

Several factors affect cotton production in Bangladesh. The prevalence of insect pests is a major concern as it affects the productivity of cotton. Globally, insect pests are responsible for about 12 to 37% loss in cotton. Presently, the losses are estimated at 20-30% in Bangladesh, which may increase to 100% unless control measures are taken. All over the world, around 1326 species of insects and mites have been found in the cotton crop (Hargreaves 1948).

A total of 31 insect pests and mites have been recorded thus far that affect the cotton crop in Bangladesh. Cotton fields are known to be inhabited by a diverse range of arthropod natural enemies, including different species of predators, soil arthropods, and parasitoids. However, little information has been available in terms of a systematic survey about the prevailing insect pests and natural enemies affecting the cotton plant. The Cotton Development Board (CDB) has been conducting field trials on Bt cotton for possible future commercial release. Therefore, it is necessary to make a baseline study about the biodiversity of pests and beneficial insects present in the cotton ecosystem in Bangladesh so that it could be useful as a future reference.

To this end, I applied for a research grant to the Biosafety Research in Bangladesh Grants Program (BRBGP) offered by the Agriculture & Food Systems Institute (AFSI), a not-for-profit organization based in the US. My project, "Baseline Information of Pest and Beneficial Insect Biodiversity of Cotton in Bangladesh," was funded in 2021.

Prof. Dr. Mohammad Tofazzal Hossain Howlader, BRBGP 2021 Grant Recipient.

PROJECT OBJECTIVES

The primary goal of this BRBGP research project is to provide baseline information about pest and beneficial insects' biodiversity of Cotton in Bangladesh, with the following specific objectives:

- To study the pest and beneficial insects' biodiversity in the cotton ecosystem in Bangladesh.
- To study the population dynamics of pest and beneficial insects in the cotton ecosystem.

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Attendees participating in the discussion during the workshop on "Biodiversity of Pest and Beneficial Insects under Cotton Ecosystem in Bangladesh," held at the Cotton Development Board (March 30, 2022)

METHODOLOGY

Field experiments will be carried out at the Cotton Research, Training and Seed Multiplication Farm, Cotton Development Board, Sreepur, Gazipur, Bangladesh to assess the biodiversity of pest and beneficial insects in cotton. Two popular cotton varieties (CB-12 and CB-14) shall be used as experimental plant materials and three methods of insect collection traps (T1= Pitfall trap, T2= Pan trap, and T3= Beating sheet) will be used for assessing the population dynamics in RCBD experimental layout. Pitfall traps will be used to collect soil-dwelling arthropods, while Pan traps shall be used to monitor bees and hymenopteran insects. The Beating Sheet method will be used to collect insects resting on cotton plants by beating or shaking vigorously. Data on insect types, their relative abundance, Shannon-Weaver Diversity, and the population dynamics of the prevailing insects over the growing season shall be measured.

EXPECTED OUTCOME

This study is expected to inform: (1) the biodiversity of the prevailing pest and beneficial insects, and (2) their population dynamics in the cotton ecosystem. The outputs will serve as baseline information to document cotton insect pests and their natural enemies.

WORKSHOP WITH COTTON DEVELOPMENT BOARD

A workshop on "Biodiversity of Pest and Beneficial Insects under Cotton Ecosystem in Bangladesh" was organized to consult about the current situation of insect pest problems in cotton with different stakeholders on March 30, 2022, at the Cotton Development Board (CDB), Dhaka. This workshop was co-hosted by the Department of Entomology, Bangladesh Agricultural University (BAU), Mymensingh and CDB, Dhaka. Mr. Md. Akhteruzzaman, Executive Director, CDB, and Dr. Andrew F. Roberts, CEO, AFSI were present as Chief Guest and Special Guest, respectively, at the workshop. The country coordinator of the SABP program, Prof. Dr. Rakha Hari Sarker, Department of Botany, University of Dhaka, along with Dr. Bhavneet Bajaj, Manager, Scientific Programs, AFSI, Prof. Dr. Aparna Islam, Brac University, and Mr. Sium Ahmed, Biosafety Officer, SABP were also in attendance at the workshop. The Principal Investigator (PI) of the project, Prof. Dr. Mohammad Tofazzal Hossain Howlader, Department of Entomology, BAU presented the keynote paper and presided over the workshop.

There were about 40 participants from different universities and research institutes, including BAU, Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMRAU), Sher-e-Bangla Agricultural University (SAU), CDB, Department of Agriculture Extension (DAE), and Bangladesh Agricultural Research Council (BARC). Participants noted the importance of this research project and provided different suggestions, such as the use of sticky and malaise traps for studying population dynamics, confirmation of the presence of different bollworms, jassids, and aphid insects, as well as different pollinators and beneficial insects present in a cotton field, for successful implementation of the research work. The PI of the project expressed his cordial thanks to CDB and all participants for their participation and lively discussion on the workshop topic.

CONCLUDING REMARKS

Cotton is a valuable fiber crop in Bangladesh, but insects play a critical role in its production. The proposed work aims to assess the insect biodiversity and environmental consequence of future transgenic cotton research, as well as inform policy and regulation for GM crops in Bangladesh. Overall, it will be beneficial for the improvement of cotton production.

CALENDAR OF EVENTS

EVENT	ORGANIZED BY	DATE	WEBSITE
INDIA			
2nd Indian Horticulture Summit - 2022: Horticulture for Prosperity and Health Security	Society for Horticultural Research and Development (SHRD) and Navsari Agricultural University	April 27-29, 2022 Navsari, Gujarat	https://nau.in/index
43rd Annual Meeting of the Plant Tissue Culture Association-India (PTCA-I) & International Symposium on Advances in Plant Biotechnology and Nutritional Security (APBNS-2022)	ICAR-National Institute for Plant Biotechnology	April 28-30, 2022 New Delhi (in person and online)	http://www.nrcpb.res.in/
National Symposium: Remembering Gregor Johann Mendel on His Bicentennial Birth Year - From Scratch to Factor to Gene to Genome	Plant Breeding & Genetics Society, Department of Genetics & Plant Breeding, College of Agriculture, G. B. Pant University of Agriculture & Technology	May 5-6, 2022 Pantnagar	https://gbpuat.ac.in/trainings_conferences/index.html
Workshop on Genome Editing in Agriculture	Professor Jayashankar Telangana State Agricultural University, Hyderabad and Biotech Consortium India Limited (BCIL), New Delhi	May 6, 2022 Hyderabad	https://www.biotech.co.in/en
National Symposium on Novel Strategies in Plant Stress Diagnosis and Management	Himalayan Phytopathological Society and Department of Plant Pathology, Dr. YS Parmar University of Horticulture & Forestry, Solan	May 6-7, 2022 Solan	https://www.yspuniversity.ac.in/
Workshop on Genome Editing in Agriculture: Science, Potential, and Policy	Punjab Agricultural University, Ludhiana, National Agri-Food Biotechnology Institute (NABI), Mohali, and BCIL, New Delhi	May 11, 2022 Ludhiana	https://www.biotech.co.in/en
ICGEB-DBT Workshop: Re-Designing Smart Crops for Sustainable Agriculture - Dynamics of CRISPR-Cas Breeding, NGS, and Beyond	ICGEB and DBT	May 23-27, 2022 New Delhi	https://www.icgeb.org/wp-content/uploads/2021/11/2022Calendar_29Oct21.pdf
INTERNATIONAL			
Countering the Illicit Transfer of Intellectual Property and Expertise by Promoting Knowledge and Information Security Best Practices	Department of State Office of Cooperative Threat Reduction Biosecurity Engagement Program (BEP), Department of Energy/ Sandia National Laboratories' Global Chemical-Biological Security	May 13, 2022 Virtual	https://gcbs-events.sandia.gov/biosecurity-engagement-program/countering-the-illicit-transfer-of-intellectual-property-and-expertise-by-promoting-knowledge-and-information-security-best-practices

SOUTH ASIA BIOSAFETY PROGRAM

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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