

South Asia Biosafety Program

NEWSLETTER FOR PRIVATE CIRCULATION ONLY – NOT FOR SALE



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INDIA

Memorandum of Understanding for a Self-Paced Course on Biosafety Aspects of Genetically Engineered Plants on the SWAYAM Portal

Vibha Ahuja, Biotech Consortium India Limited



Dr. Vibha Ahuja, Chief General Manager, BCIL and Prof. Anil D. Sahasrabudhe, Chairman, AICTE with colleagues at the signing of the MoU between BCIL and AICTE.

The SWAYAM (Study Webs of Active–Learning for Young Aspiring Minds) platform has been indigenously developed by the Ministry of Human Resource Development and the All India Council for Technical Education (AICTE) with an objective to provide access to the best teaching and learning resources to all, including the most disadvantaged. It is an online interactive learning platform that provides video lectures and reading material, along with assignments and quizzes to be accessed by anyone, anywhere, and at any time. In particular, SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

Biotech Consortium India Limited (BCIL) signed a Memorandum of Understanding (MoU) with AICTE on March 8, 2019 for the preparation

of a series of video lectures to be uploaded on the SWAYAM portal as part of the activities under the Phase II Capacity Building Project on Biosafety implemented by Ministry of Environment, Forest, and Climate Change, Government of India. The MoU was signed by Prof. Anil D. Sahasrabudhe, Chairman, AICTE and Dr. Vibha Ahuja, Chief General Manager, BCIL.

SWAYAM seeks to bridge the digital divide for students who have hitherto remained untouched by the digital revolution and have not been able to join the mainstream of the knowledge economy.

Under the terms of the MoU, BCIL will prepare and upload the video lectures on Biosafety Aspects of Genetically Engineered Plants of a self-paced nature on the SWAYAM portal, to be made available to relevant stakeholders. Additionally, knowledge products produced under the Phase II Capacity Building Project on Biosafety will also be uploaded.

Training Workshop on Genome Editing for the Development of Climate Resilient Novel Blast Resistant Wheat Variety at Bangabandhu Sheikh Mujibur Rahman Agricultural University

Musrat Zahan Surovy, Dipali Rani Gupta, Nur Uddin Mahmud, Sanjoy Kumar Paul, and Moutoshi Chakraborty,
Bangabandhu Sheikh Mujibur Rahman Agricultural University



Prof. Sophien Kamoun at the Workshop on Genome Editing for the Development of Climate Resilient Crop Variety.

The Department of Biotechnology (DBT) of Bangabandhu Sheikh Mujibur Rahman Agricultural University (BSMAU) and the Sainsbury Laboratory (TSL), Norwich, UK organized a day-long training workshop: *Genome Editing for the Development of Climate Resilient Crop Variety* on February 25, 2019 at the Old Auditorium of BSMAU, Gazipur, Bangladesh. The goal of the workshop was to inform and equip young

professionals in the field of biotechnology and genetic engineering with the skills required for the development of blast resistant non-transgenic wheat varieties by CRISPR-Cas9 technology. A total of 55 young scientists and young professionals from 22 institutes, including leading universities (Dhaka University, Shahjalal Science and Technology University, Bangladesh Agricultural University, Khulna University, etc.) and research institutes (Bangladesh Agricultural Research Institute, Bangladesh Institute of Nuclear Agriculture, etc.), participated in the workshop.

The basic concept and scope of the CRISPR technology, especially in the development of blast resistant wheat, were presented by Prof. Dr. Tofazzal Islam of the DBT of BSMAU. Following this, British Royal Society Fellows and scientists of the Sainsbury Laboratory, Prof. Nicholas J. Talbot (FRS, FRSB) and Prof. Sophien Kamoun (FRS), delivered two interactive sessions. Prof. Talbot gave a talk on Understanding the Biology and Pathology of the Blast Fungus *Magnaporthe oryzae* and elaborated

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Prof. Nick Talbot handing a certificate to a participant.

about the arms race between host and fungus, with an emphasis on rice and wheat blast disease, and emphasized basic knowledge of the biology of *M. oryzae* for genomic manipulation. Prof. Sophien Kamoun delivered a talk on CRISPR Crops—Plant Genome Editing: Principles and Applications. He elaborated on the power of the technology and its potential to create new diversity in plants for making a second green revolution. The last section of his presentation included the recent success in editing some S-genes in the genomes of hexaploid wheat and barley plants for the development of blast resistance.

The workshop was sponsored by the Krishi Gobeshona Foundation, University Grants Commission, and GCRF of the Biotechnology and Biological Sciences Research Council of the UK. The workshop was opened by the Vice-Chancellor, Prof. Dr. Md. Giashuddin Miah. The technical sessions were chaired by Dr. Tofazzal Islam of the DBT of BSMAU and Dr. N. C. Deb Barma, Director General of the Bangladesh Wheat and Maize Research Institute. Prof. Nicholas J. Talbot distributed certificates to the participants at the end of the workshop. The training provided a unique opportunity to develop collaboration between young biotechnologists of Bangladesh and the Sainsbury Laboratory and to develop expertise in genome editing and contribute to achieving food security.



Distinguished guests and participants at the training workshop.

Release of the International Life Sciences Institute Crop Composition Database Version 7.0: An Open Resource for High Quality Compositional Data

Bhavneet Bajaj and Andrew Roberts, ILSI Research Foundation



The nine economically important crops for which the ILSI Research Foundation's Crop Composition Database houses data: apple, canola, field corn, sweet corn, cotton, potato, rice, sorghum, and soybean

The International Life Sciences Institute Crop Composition Database (ILSI-CCDB) is a curated, open access source of comprehensive data on the natural variability in composition (e.g., nutrients, anti-nutrients, and secondary metabolites) of agriculturally important, conventionally bred crops. The ILSI-CCDB houses data for nine economically important crops: apple, canola, field corn, sweet corn, cotton, potato, rice, sorghum, and soybean. The plant tissues used for the compositional analyses were harvested from managed field trials and, depending on the crop, the cumulative data have been accrued from multiple years, sites and countries.

Prior to the introduction of the ILSI-CCDB, compositional data available in the public domain varied greatly in terms of quality. It was not unusual to see references to forty-year-old publications for crop composition data, often without clear methodologies for the collection of samples and analyses of composition. Recognizing that the comparative safety assessment of foods derived from genetically engineered plants depends on a robust and transparent source of data on compositional variability, ILSI convened a task force to address issues

related to crop compositional analyses. This effort resulted in the first version of the ILSI-CCDB, released in 2003.

The ILSI-CCDB is periodically updated, with the latest release, version 7.0, published in January 2019. Version 7.0 of the ILSI-CCDB contains 1,245,597 data points representing 212 compositional components. Data providers to the ILSI-CCDB are public sector institutions and private sector companies. All data providers adhere to a strict set of criteria,

available on the website, that must be met before the data are accepted. The database is an important resource for scientists, government regulators, and food nutritionists. It is a unique resource that

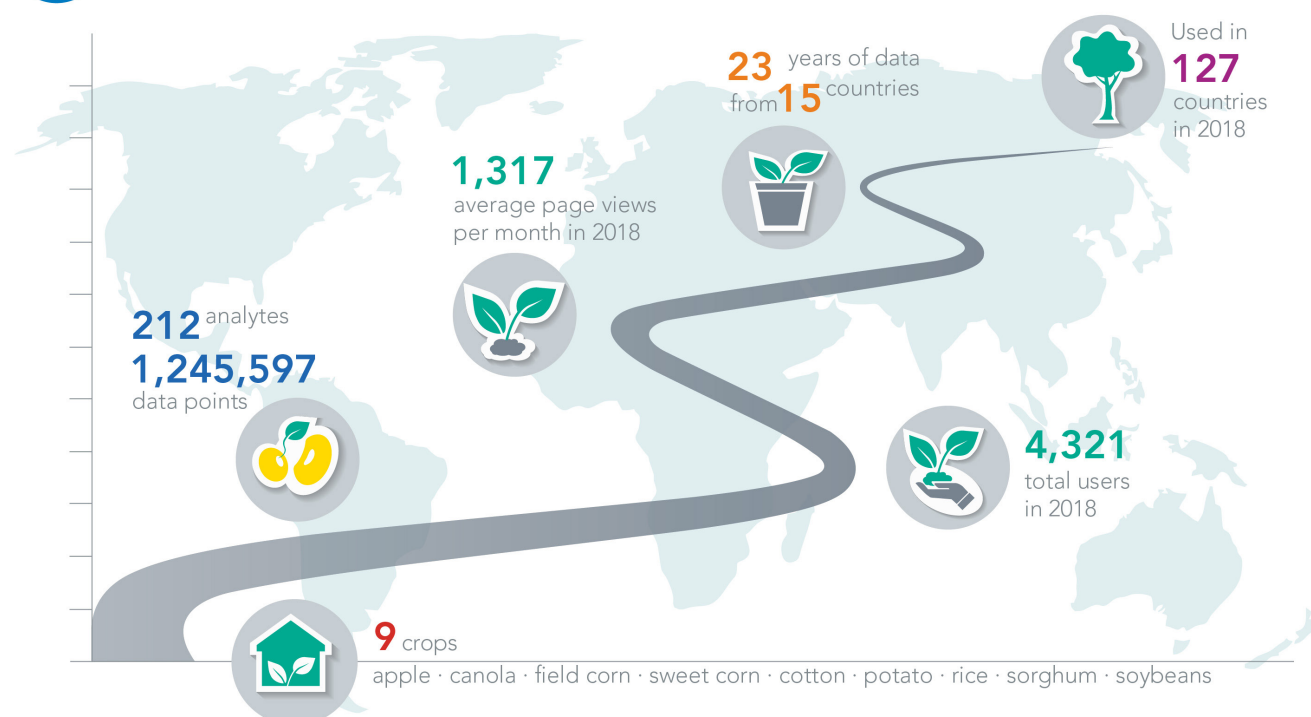
demonstrates the natural variation of key nutrients, anti-nutrients, and other metabolites in conventional crops. The accompanying metadata, which include country and region of origin, year of cultivation, and analytical methodology, allow for critical insight into factors that play a role in compositional variability. The data in the ILSI-CCDB can also be applied to improve overall knowledge of human nutrition, inform the development of diets that promote the healthy growth of livestock, and improve global datasets related to food security and nutrition modeling.

The database is an important resource for scientists, government regulators, and food nutritionists.



ILSI Research Foundation

Crop Composition Database



www.cropcomposition.org

CALENDAR OF EVENTS

EVENT	ORGANIZED BY	DATE	WEBSITE
INDIA			
India EMBO Symposium: Sensing and Signalling in Plant Stress Response	National Institute of Plant Genome Research	April 15-17, 2019 New Delhi	http://meetings.embo.org/event/19-plant-stress-response
National Conference on Identification, Convergence, Implementation & Extension of Science-Tech-Research for a Sustainable Planet	NAMO Society, New Delhi and Sardar Vallabhbhai Patel University of Agriculture and Technology, Meerut, U.P.	April 20-21, 2019 Meerut	http://www.svbpmeerut.ac.in/notice/ICIESSP-2019.pdf
International Conference on Pharmaceutical Sciences and Biotechnology (ICOPSB-2019)	International Conference on Pharmaceutical Sciences and Biotechnology	July 11-12, 2019 Goa	http://biopharmameeting.com/
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	https://icar.org.in/sites/default/files/ICPPH%202019-Final%20circular.pdf
Seed World 2019	Indian Council of Food and Agriculture	September 4-7, 2019 Bengaluru	http://icfa.org.in/event.php
INTERNATIONAL			
15 th ISBR Symposium	International Society for Biosafety Research (ISBR)	April 1-4, 2019 Tarragona, Spain	http://www.isbr2019.com/
Workshop on Use of Genome Editing and Other New Breeding Technologies for Global Food Security	International Center for Genetic Engineering and Biotechnology and National Institute for Biotechnology and Genetic Engineering, Faisalabad, Pakistan	April 8-10, 2019 Islamabad, Pakistan	https://www.icgeb.org/pakistan-genome-editing-2019.html



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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