

South Asia Biosafety Program

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Program Announced & Registration Open

4th Annual

South Asia Biosafety Conference

September 19-21, 2016

Taj Krishna, Hyderabad, India

The South Asia Biosafety Conference is an opportunity to hear from leading scientists representing regulatory agencies, public sector research institutions, and the private sector in South Asia and internationally. The conference will be held at the Taj Krishna, Road Number 1, Banjara Hills, Hyderabad, Telangana 500034, India on September 19-21, 2016.

September 19, 2016

Delegate Registration and Inaugural Ceremony
Plenary Session I: Regulation of Biotechnology in South Asia
Parallel Session I: Research and Development in South Asia
Parallel Session II: Research Efforts to Address Climate Change
Poster Session

September 20, 2016

Plenary Session II: New Technologies in GE Development
Facility Visits

September 21, 2016

Plenary Session III: Meeting Regulatory Challenges and Approaches to Regulatory Support
Poster Session Awards
Plenary Session IV: Dossier Preparation: Planning and Generation of Regulatory Data

For more details and registration information, please see pages 5-6 or visit <http://sabc.biotech.co.in>

Follow along to @CERA_ILSI on Twitter for updates and to see live tweets during the conference! #SABC2016 

Transgenic Potato for Reduced Cold Induced Sweetening in Last Stage for Patent

Dr. Prashant G. Kwar, Sr. Scientist, Dr. Patil V. U., Dr. S. Sundresha and Dr. Hemant Kardile, Scientists, Division of Crop Improvement, ICAR-Central Potato Research Institute, Shimla, Himachal Pradesh



India ranks as the world's second largest potato producing nation. In 2013, the production was approximately 45.4 million tonnes harvested from a 1.99 m ha with an average yield of 23 t/ha (FAOSTAT, 2013). The potato can be considered as an alternative staple food because it is ranked as the third most important food crop in the world and the most important non-grain food crop. Its wide adaptability in planting and harvesting makes it an ideal crop to grow between two major crops.

India's potato production has seen a phenomenal increase since the 1950s, mainly due to the strong demand from the processing industry and remunerative returns. According to the Central Potato Research Institute (CPRI), Shimla, the area under potato production rose by almost 547% since the 1950s, while yield rose by 267% and overall output increased by 146%.

Snacks (including chips, French fries, sticks, and frozen products), alcohol (including whisky, vodka and beer), liquid glucose, potato starch and dextrose powder are some of the major potato-based industries in India. Potato chips is estimated to constitute nearly 85% of India's total salty snack food market of about Rs 2,500 crores. The potato based market is growing at a compound, annual growth rate of 4.1% according to a market survey.

All these potato based industries require a continuous supply of the harvest throughout the year. However, 90% of the potato is grown in the Rabi Season, from October to November and February to March. Thus, the majority of the harvest needs to be cold stored for nearly 5 to 6 months. While being stored at cold temperatures, the tuber quality diminishes, as it hastens cold-induced sweetening (i.e., the conversion of starch to sugar) in potatoes. The processing of these high sugar potatoes into chips or fries leads to a dark brown to black product that renders them unfit for human consumption.

In the cold, starch in potato tubers is converted into soluble sugars by a two-step process. The first step involves starch being degraded into sucrose which subsequently is split into hexoses. Cold-induced hexose accumulation in potato tubers is directly correlated with the activity of the *Vacuolar invertases*. Thus, by inhibiting the invertase activity results in a reduced hexose production and consequently the cold sweetening can be reduced.

To overcome this problem, scientists at the ICAR-Central Potato Research Institute (CPRI) have isolated and cloned the DNA sequence of *Vacuolar invertase* gene from potato. By inhibiting the expression of this gene using RNAi technology, it has proven that the transgenic plants prevented the cold induced sweetening of potato tubers upon cold storage even up to 135 days.

A total of 7 transgenic lines of Kufri Chipsona-I with inhibited expression of *Vacuolar invertase* were selected from more than 300 transgenic events and confined field trials (CFT) at CPRI, Jalandhar (BT/BS/17/22/97-PID). Single line KChipInvRNAi-2214 was selected because it has significantly lower soluble sugars, superior chipping characters, and on par yield compared with the control.

This transgenic event exhibited >80% reduced hexose accumulation during cold storage. Moreover, during the frying process, the transgenic event 2214 showed no browning up to 135 days of cold storage compared to the wild type with significant reduction in acrylamide formation.

These results suggest that inhibiting the expression of *Vacuolar invertase* in potato tubers have greatly improved the processing quality. This product is in the last stage of obtaining the Indian patent (Application: 2762/DEL/2009).

The majority of the potato harvest in India needs to be stored for 5-6 months. While being stored at cold temperatures, potatoes are prone to cold-induced sweetening. Processing these high sugar potatoes renders them unfit for human consumption. A transgenic event has been developed to overcome this problem.

Key Messages from Workshop on the National Biodiversity Strategy and Action Plan

Dr. M. Imdadul Hoque, Dean, Faculty of Biological Sciences, University of Dhaka and Country Coordinator, South Asia Biosafety Program, Dhaka



A stakeholder consultation workshop was held on January 6, 2016 to develop targets, indicators and strategies for the updated National Biodiversity Strategy and Action Plan (NBSAP) under the project “Updating and Mainstreaming of NBSAP” implemented by the Department of Environment at LGED- RDEC, Agargaon, Dhaka.

A total of 89 participants from numerous universities, government and non-government organizations, civil society, and media were present at the workshop. During the inaugural ceremony, Dr. Kamal Uddin Ahmed, Secretary, Ministry of Environment and Forests was the Chief Guest and Mr. Md. Nurul Karim, Additional Secretary (Environment), Ministry of Environment and Forests was the Special Guest. Mr. Quazi Sarwar Imtiaz Hasmi, Additional Director General, Department of Environment, offered the vote of thanks. Mr. Md. Raisul Alam Mondal, Director General, Department of Environment, presided over the workshop. Mr. Abdullah Al Mohsin Chowdhury, Additional Secretary, Ministry of Environment and Forests, was present as a Special Guest during the technical session. Dr. Sultan Ahmed, Director (NRM) acted as facilitator.

Mr. Mohammed Solaiman Haider, Project Director, NBSAP, gave the keynote address on updating and mainstreaming the NBSAP. He mentioned the importance of biodiversity conservation and the international obligation of updating the NBSAP in line with Aichi Biodiversity Targets.

Aichi Biodiversity Targets are a set of 20 global targets under the Strategic Plan for Biodiversity 2011-2020. To learn more about the targets, visit: www.cbd.int/sp/targets/

Mr. Haider also shared that a draft has been prepared on the targets, activities and indicators from consultation inputs at the divisional and national levels. He requested participants to provide further inputs in order to enrich the national biodiversity targets, activities, implementing agencies and indicators.

Dr. Kamal Uddin Ahmed, Secretary, Ministry of Environment and Forests, informed participants that the Bangladesh Biodiversity Act, 2015 has already been approved by the Cabinet and is currently waiting on final approval by the National Parliament. He also shared with participants

that biodiversity issues have been incorporated into the seventh Five Year Plan. He mentioned that in the updated NBSAP, biodiversity issues will be integrated across sectors. He also opined that meetings will be held among the representatives from the relevant ministries for effective implementation of NBSAP.

Mr. Md. Nurul Karim emphasized that it is essential to create awareness and sustainable use of biodiversity and its components. Mr. Md. Raisul Alam Mondal stressed the importance of setting realistic targets based on the limitations of the resources as well as the situation of the socio-economic condition of the country.

During the technical session, participants were divided into four groups based on their expertise to address strategic goals, specifically:

- Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society (National Targets 1 to 4)
- Goal B: Reduce the direct pressures on biodiversity and promote sustainable use (National Targets 5 to 10)
- Goal C: Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity (National Targets 11 to 13)
- Goal D: Enhance the benefits to all from biodiversity and ecosystem services (National Targets 14 to 16)
- Goal E: Enhance implementation through participatory planning, knowledge management and capacity building (National Targets 17 to 20).

After the group work, one member from each group presented their suggestions. The relevant suggestions will be accommodated in the updated NBSAP.

During the concluding ceremony, Mr. Abdullah Al Mohsin Chowdhury thanked the participants for providing vital inputs. He suggested the project management team and consultants write down the activities under each targets sequentially.

Mr. Md. Raisul Alam Mondal emphasized the importance of coordination for effective implementation of NBSAP. He urged all in attendance to set the activities realistically so that these are achieved within timeframe of the year 2020. He also suggested that the consultants prioritize the targets. Finally, he gave thanks to the participants for taking part in the workshop and concluded the program.

EVENT	ORGANIZED BY	DATE	WEBSITE
INDIA			
Recent Advances In Improvement of Vegetable Crops	Dr. Y.S. Parmar University of Horticulture & Forestry Nauni-Solan	February 17 - March 8, 2016 Solan, Himachal Pradesh	www.yspuniversity.ac.in/trainings/caft-brochure-16.pdf
4 th National Symposium on Transforming Indian Agriculture towards Food And Nutritional Security	The Society of Agricultural Professionals C.S. Azad University of Agriculture & Technology, Kanpur	February 20-21, 2016 Jhansi, Uttar Pradesh	www.csauk.ac.in/announcement.html
Workshop on "Creating and Sustaining Successful Bioenterprises"	Biotech Consortium India Limited (BCIL) and Department of Biotechnology	February 23, 2016 New Delhi	www.bcil.nic.in/
Series of Workshops on Environmental Risk Assessment of Genetically Engineered (GE) Plants	Phase II Capacity Building Project of the Ministry of Environment, Forest & Climate Change, Center for Environmental Risk Assessment (CERA), ILSI Research Foundation, Biotech Consortium India Limited (BCIL)	February 22-25, 2016 New Delhi	www.bcil.nic.in/
6 th International Conference on "Plant, Pathogens and People": Challenges in Plant Pathology to Benefit Humankind	Indian Phytopathological Society, Division of Plant Pathology, ICAR-Indian Agricultural Research Institute	February 23-27, 2016 New Delhi	www.iari.res.in/files/Latest-News/IPS_International_Conference-18012016.pdf
4 th Annual South Asia Biosafety Conference	SABP, Center for Environmental Risk Assessment (CERA), ILSI Research Foundation, Biotech Consortium India Limited (BCIL)	September 19-21, 2016 Hyderabad	http://sabc.biotech.co.in/
International Conference on "Pulses for Nutritional Security and Agricultural Sustainability"	Indian Society of Pulse Research and Development in association with Indian Institute of Pulses research, Kanpur	November 12-14, 2016 New Delhi	www.iipr.res.in/pdf/events_201115.pdf
INTERNATIONAL			
3 rd Plant Genomics Congress: Asia	Global Engage	April 11-12, 2016 Kuala Lumpur, Malaysia	www.globalengage.co.uk/plantgenomicsasia.html



SOUTH ASIA
BIOSAFETY PROGRAM

The South Asia Biosafety Program (SABP) is an international developmental program implemented in India, Bangladesh and Pakistan 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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To receive an electronic copy of this newsletter send your name, institutional information and e-mail address to: vibhaahuja.bcil@nic.in

Registration Form

4th Annual South Asia Biosafety Conference

September 19-21, 2016

Taj Krishna, Hyderabad, India



Registrations are limited to 100 for the conference. Registrants that cannot be accommodated will be added to a waitlist, and notified if space becomes available.

Attach mailing label from brochure,
or your business card.

Name Preferred on Badge _____

Complete the following if the information on the mailing label is incorrect or no label is provided.

Registrant is:

Gender Male Female

Title Mr. Mrs. Ms. Dr.

First Name _____

Middle Initial _____

Last/Surname _____

Job Title _____

Employer/Company/Institution _____

Address _____

Street _____

City _____

State/Province _____

Zip/Postal Code _____

Country _____

Telephone _____

Facsimile _____

E-mail _____

Registration*

Category	Fee	
	INR	US\$
Industry	Rs. 6,500/-	\$100
Research Institution, Universities, Individual Experts	Rs. 3,500/-	\$50
Students	Rs. 2,700/-	\$40
BCIL Biotech Club Members	25% discount	
Additional delegates from same organization (except students)	25% discount	
Government Departments and Ministries	No fee up to two nominations and Rs. 2,000/- each for additional nomination. Registration must be submitted through email to vibhaahuja.bcil@nic.in and confirmed by organizers. No online registration.	

*No free on-the-spot registrations.

In case you face difficulty in online registration, please download the registration form and send it to us along with payment through bank transfer. The details for Bank Transfer are as follows:

Beneficiary Name: Biotech Consortium India Limited

Account Number : 00032320008527

IFSC Code : HDFC0000003 (HDFC Bank Limited)

Cancellation/Refund Policy

Registration cancellations must be made in writing and received by BCIL no later than September 1, 2016. Cancellations received by this date are subject to a 20% processing fee. Registration and ticketed event cancellations received after September 1, 2016, are NOT subject to a refund.

Registration forms should be sent to:

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Poster Program Abstract Submission Form

4th Annual South Asia Biosafety Conference

September 19-21, 2016

Taj Krishna, Hyderabad, India



THE 4TH ANNUAL SOUTH ASIA BIOSAFETY CONFERENCE POSTER PROGRAM is an opportunity for individuals to share their research, findings and achievements with colleagues at the conference. Presenting a poster is a noteworthy way to share expertise or accomplishment, and poster presenters will have a dedicated time to present and discuss their work with the diverse group of attendees.

All poster abstracts must convey relevance to biosafety research, risk assessment, or regulation of genetically modified organisms (including programs or activities to improve capacity and knowledge generation).

The following are some suggestions about poster abstracts that will contribute to ensuring the readability and quality of the submission. Abstracts of accepted posters will be included as part of the conference onsite program and will be published as submitted, without content editing.

- Check for proper spelling and grammar.
- Use a standard typeface such as Times Roman with a font size of 12.
- Begin sentences with words (not numbers).
- Standard abbreviations may be used without definition, but nonstandard abbreviations/acronyms should be placed in parentheses after the first use of the terminology. It is important to keep nonstandard abbreviations/acronyms to a minimum, to allow for readability and understanding.
- Do not include tables, figures, or graphs in the abstract. Such content is appropriate for the poster.
- Limit the abstract to 300 words.
- Try to organize the abstract with the following headings where appropriate: purpose, methods, results, conclusions (e.g., for research projects) OR purpose, description, evaluation and outcomes (e.g., for capacity building projects).

Space is limited. Posters will be considered on a first come, first served basis, based on the relevance to the program.

ABSTRACT SUBMISSION FORM FOR POSTER PROGRAM

PLEASE COMPLETE THE FORM BELOW AND E-MAIL IT TO lwilliams@ilsa.org AND COPIED TO vibhaahuja.bcil@nic.in.

You will receive a return email acknowledging receipt of your abstract and subsequently a second email informing you if your poster has been accepted for the conference poster program.

I. Lead Presenter

First Name: _____

Last Name: _____

Institution and Address: _____

E-mail: _____

Telephone Number: _____

(NOTE: Poster Presenters must register for the 4th Annual South Asia Biosafety Conference. If an abstract is received from an author who is not registered, the abstract will NOT be included in the review process).

II. Poster Title: _____

Poster Authors: _____

(NOTE: list all poster authors including their name, organization, address and e-mail. Separate authors with a semi-colon and please INCLUDE the lead presenter also).

III. Poster Abstract (maximum 300 words)

