

Proceeding of Two Days Workshop for School Students on "Transgenic Crops: Technology & Applications".

Organizing Secretaries:

Dr. Jasdeep Chathrath Padaria and Dr. Subodh Kumar Sinha

The workshop was organized at ICAR-National Institute for Plant Biotechnology, New Delhi, under the banner of Society for Plant Biochemistry and Biotechnology, New Delhi on January 30-31, 2020. Different public and private schools of Delhi region were contacted by email, phone and personal visits and briefed about the said workshop. From the nominations received; the participants were selected based on "first come basis". Finally, 39 students and 7 teachers (total 46) from six schools (RPVV, Lajpat Nagar, Salwan Girls School, SD Public School, St. Michael Sr. Secondary School, GB Sr. Secondary School, Pusa, JD Tytler School) participated in the workshop.

The workshop was inaugurated on 30th January by Prof. NK Singh Director, NIPB in the presence of Dr. Shelly Praveen (Secretary, SPBB; Head, Division of Biochemistry, IARI); Dr Srinivasan, Chief Editor, JPBB; along with other dignitaries from NIPB and the Executive Committee members of SPBB. Prof. NK Singh welcomed all participants, dignitaries present and introduced the topic of workshop. Dr. Shelly Praveen talked of SPBB and its role in various activities related to science and society. Dr. JC Padaria gave a brief genesis behind the workshop and the need of workshops on transgenics especially for school students. The inauguration session also included the brief introduction of participants and teacher in-charge of respective schools. The inaugural session ended with presentation of vote of thanks by Dr. SK Sinha.

The workshop included five brief talks from in-house (NIPB) experts, viz., Prof. NK Singh (Transgenic research and product commercialization: An Indian perspective), Dr. SK Sinha (Basic Concept of recombinant DNA technology), Dr. JC Padaria (GM production methodology), Dr. D. Pattanayak (Success stories pertaining to transgenic crops: Current global scenario) and Dr. R. Sreevathsa (Transgenic crops: From lab to market); IARI expert, viz., Dr. RN Padaria (Transgenic Crops: Myths and Facts), delivered on technical sessions on January, 30 and 31. All the lectures were intentionally prepared very simple and more interactive keeping the background of the students in mind.

Apart from technical talks, students were shown videos depicting awareness about transgenic crops (success and application of Bt-cotton; various applications of GM) and detail activities of NIPB on 30th January. On the same day students visited different laboratories including Tissue culture and NGS facility of NIPB in four different groups which enabled them to understand working principle of different equipments used in any biotechnology laboratories.

A participatory exercise on "GMO: Ideas & Belief", was organized for all student participants, to allow them to express their understanding about transgenic crops, developed during the workshop. During this exercise students expressed their ideas in terms of poem, cartoon, diagramme, poster etc. The students' responses were judged by a

panel consisting of Dr. Archana Sachdev (Principal Scientist; Vice President, SPBB), Dr. Aruna Tyagi (Principal Scientist; Treasurer, SPBB) and Dr. PK Mandal (Principal Scientist; Jt. Secretary, SPBB). Six best depictions were selected for prize and certificate.

All participants also visited transgenic net-house to see live transgenic crops growing under closed containment. They also visited other experiments being carried out in the net-house.

The workshop also provided opportunity to school students to interact with lead experts in the area of transgenic research and various issues related to transgenics in India. The panel of experts included, Prof. Deepak Pental (Former Vice-Chancellor, Delhi University), Dr. AK Singh (Director, IARI, New Delhi), Dr. SR Bhat (Emeritus Scientist, Former Member, RCGM), Prof. RN Padaria (Division of Extension Education, IARI, New Delhi). Prof. Pental also conducted a short quiz for students, and later discussed each of the questions with them. Students as well as teachers freely interacted with the panel and asked their queries related to transgenics and biotechnology. Based on the interaction, experts expressed their opinion on GM, current Indian status of GM research and commercialization and biotechnology as a career.

The workshop ended with valedictory function wherein each participants and teacher in-charge were given certificate of participation along with an eco-friendly token of remembrance. Students were highly appreciative of organizing workshop on transgenic crops for school students and the teachers shared their views of organizing such workshops on regular basis as well as teachers with preferably for a longer duration.

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