

Synectics Seminar on “Genomics and Transgenic Research in Forestry: Opportunities and future challenges”

The Institute of Forest Genetics and Tree Breeding organized a one day seminar on “**Genomics and transgenic research in forestry: Opportunities and future challenges**” to review the status of genomics and transgenic research in tree species and assess the potential of these cutting edge technologies in accelerating breeding, targeted trait improvement, genetic resource conservation and adaptation to climatic challenges.

A brief introductory talk on the opportunities of genomics and transgenics in forestry science was given by Dr. Mohit Gera, Director, IFGTB. He highlighted the need for drawing timelines for these programs to enable field application of these high end technologies.

The Sessions included Tree Genomics: Past, Present and Future; Transgenic technology: Opportunities and way forward and Advanced application of Genomic Technologies. Lead talks in the seminar were delivered by Dr. K. Gurumurthi,

Former Director, IFGTB; Dr. Sucheta Tripathy, Principal Scientist, CSIR-IICB, Kolkata; Prof. L. Arul and Dr. K.K. Kumar from Tamil Nadu Agricultural University, Coimbatore. The topics covered by the experts included national and international perspectives on tree genomics and transgenics; understanding genome biology using next generation sequencing technologies; biosafety in transgenic crops and genome editing using CRISPR. Additionally, the research conducted in these areas and future program envisioned in ICFRE and IFGTB was presented by Dr. Modhumita Dasgupta and Dr. N.V. Mathish.

The seminar was also attended by stakeholder from paper industries including , ITC Life Science and Technology Centre, Bengaluru; Tamilnadu Newsprint Ltd, Karur and Seshasayee Paper and Boards Ltd, Erode.



The perspective of paper and pulp industries on marker guided selection and tree transgenics was highlighted by the researchers from ITC and TNPL. It was decided to take collaborative efforts along with state forest departments in implementing these programs to ensure acceptability by the stake holders. The critical issue of biosafety concerns of transgenics was discussed in detail and suggestions were provided to initiate the process regulatory clearances for GM trees.



The concluding session chaired by Dr. K. Gurumurthi focused on future of tree genomics and transgenics in the country and specifically in ICFRE/IFGTB. The immediate application of genomics in tree breeding, conservation programs and adaptation biology was suggested. Efforts on whole genome sequencing of tropical tree species to understand the genetic architecture and genome evolution was also identified as a priority area for ICFRE. The urgent need for computational support in terms of human resource and infrastructure for handling 'Big Data' generated through genomics programs was discussed in detail and recruitment of computational biologist was recommended, to reduce over dependence on outsourcing of data analysis. Finally, a consensus on developing consortium project on tree genomics was suggested by the experts.



The program ended with vote of thanks by Dr. Modhumita Dasgupta, Seminar Co-ordinator.