



The ICFRE-Institute of Forest Genetics and Tree Breeding, Coimbatore, conducted a five days training program on **“Basic Techniques in Plant Molecular Biology”** for the Technical personnel of ICFRE from 29th January 2024 to 2nd February 2024 under HRD, CAMPA. The training was attended by 15 Technical staff of ICFRE. In the inaugural session, Dr. Mathish Nambiar-Veetil Scientist-G & Head, Division of Plant Biotechnology and Cytogenetics, ICFRE-IFGTB welcomed the participants. This was followed by screening of the short film “Walking Tall with Trees” highlighting the achievements of ICFRE-IFGTB. Dr. A. Shanthi, Scientist-E & Training Coordinator, Division of Plant Biotechnology & Cytogenetics, ICFRE-IFGTB, presented an overview of the five days training program. In the introductory talk on “Biotechnology” delivered by Dr. R. Yasodha, Group Coordinator (Research), ICFRE-IFGTB, highlighted the various biotechnologies being used for the benefit of the society. This was followed by an inaugural address delivered by the Director, ICFRE- IFGTB Dr. C. Kunhikannan where in importance of basic & applied biotechnology in human life and forestry was emphasized. The inaugural session concluded with the vote of thanks by Mrs. S. Sudha, Technical officer.

On the first day (29.01.2024) of the training program, Dr. Rekha Warriar, Scientist-F & Head, Chemistry & Bioprospecting Division, ICFRE-IFGTB delivered a lecture on “Good Laboratory Practices-Chemical Safety & Biosafety”. She explained in-depth on the procedure for handling of hazardous chemicals, safeguards and disposal methods of biological materials. This was

followed by a lecture on “PCR technology: Principles and Optimization Strategy in ISSR and SSR DNA Markers” delivered by Dr. A. Shanthi, Scientist-E, Division of Plant Biotechnology and Cytogenetics. The lecture covered the basic principles and applications of PCR based DNA markers, including the ISSR, SSR DNA markers and their optimization strategies. In the afternoon session, a lecture on “Introduction to Genomics and NGS technology” was delivered by Mrs. P. Maheswari, Senior Research Fellow, Division of Plant Biotechnology and Cytogenetics. She explained in detail about the advantage and application of NGS technology in tree genomics. The participants then visited the Vegetative Propagation Complex, and the activities were explained by Mrs. K. Shanthi, Chief Technical Officer, Division of Plant Biotechnology and Cytogenetics. The forenoon session of the second day (30th January 2024) of the training program was scheduled in Genomics lab of PBT&C division for hands on training. All the participants were trained by Mrs. A. Muneera Parvin, Senior Research Fellow, and her team for DNA isolation, RNA isolation, quantification using Nanadrop spectrophotometer. In the afternoon, practical session was conducted in the DNA finger printing and Isozyme lab. PCR set up for ISSR and SSR reactions was demonstrated to the participants by Mrs. S. Sudha, Technical Officer, and her team. On the third day, a lecture on “Application of DNA Markers in Forestry” was delivered by Dr. R. Yasodha, Scientist-G & Group Coordinator Research. This was followed by hands on training for “Agarose & Polyacrylamide Gel Electrophoresis by Mrs. S. Sudha, and her team. In the afternoon session, a lecture on “SSR Genotyping by Sequencing: Methodology and Analysis” was delivered by Mrs. Sindhu, Senior Research Fellow. She explained about SSR Marker development through high throughput sequencing methodology, analysis and interpretation of molecular data using softwares like DARwin 6.0.

On the fourth day a lecture on “Introduction to Transgenesis and Genome Engineering” was delivered by Dr. Mathish Nambiar-Veetil Scientist-G & Head, Division of Plant Biotechnology and Cytogenetics. This was followed by a lecture and practical session on “Principles of Plasmid Isolation, Restriction Digestion, Bacterial and Plant Transformation” by Ms. S. Sreeja and Mr. R. Manoj kumar, Senior Research Fellows, Division of Plant Biotechnology and Cytogenetics. On the last day of the training program on 2nd February 2024, a lecture on “Biochemical Characterization of Plants” was delivered by Dr. D. Thangamani, Scientist-D, Chemistry and Bioprospecting Division. The practical session was conducted in the Genomics Lab for Real Time PCR demonstration to the participants. All the trainees then participated in a Quiz program to evaluate their level of understanding on the subjects learnt during the training period. In his valedictory remarks, Dr. C. Kunhikannan, Director, ICFRE-IFGTB urged the participants to enhance their knowledge base through regular interactions and in-depth reading. The program ended with a vote of thanks by Mrs. S. Sudha, Technical officer.

ICFRE- INSTITUTE OF FOREST GENETICS AND TREE BREEDING, COIMBATORE
Basic Techniques in Plant Molecular Biology for the Technical Personnel of ICFRE
29th January to 2nd February 2024



Inaugural session and Lectures



Hands on Training in Biotechnology Labs and Visit to Vegetative Propagation Complex



Distribution of prizes to Quiz participants and Certificates to trainees during Valedictory function.