

**A Report on three weeks “Summer Internship Training”  
3<sup>rd</sup> – 21<sup>st</sup> July, 2023 at  
ICFRE-Institute of Forest Genetics and Tree Breeding, Coimbatore.**

The ICFRE-Institute of Forest Genetics and Tree Breeding, Coimbatore organised three weeks “Summer Internship Training” from 3<sup>rd</sup> to 21<sup>st</sup> July, 2023. Twenty under-graduate and post graduates students of Biotechnology, Biochemistry and Biotechnology, Forestry and B.Tech Biotechnology from various colleges and universities viz., Shri Nehru Maha Vidyalaya College of Arts And Science, Coimbatore; Avinashilingam Institute for Home Science & Higher Education for Women, Coimbatore; Dhanalakshmi Srinivasan Institute of Research and Technology, Perambalur; Sam Higginbottom University of Agriculture Technology and Sciences, Uttar Pradesh and Chandigarh University, Punjab had participated in this programme. The training module included genetics and tree breeding, GIS and remote sensing, forest genetic resource management, microbiology, forest protection, soil and plant analysis, molecular markers, bioprospecting, biostatistics and scientific writing skills.

The training was inaugurated on 3<sup>rd</sup> July, 2023 by Dr. Rekha R. Warriar, Scientist F & Head, Chemistry and Bioprospecting Division. The training coordinator Dr. N. Senthilkumar, Scientist F welcomed the gathering and gave an overview of the training module followed by self introduction of the student participants. Dr. Rekha R. Warriar, Scientist F & Head, Chemistry and Bioprospecting Division briefed the importance of the training module. She insisted the students to make use of the opportunity to escalate their academic knowledge and skills into scientific research and to update their expertise in a multidisciplinary approach.

Students were given inputs on various fields of forestry research under 12 different modules. Various aspects of tree breeding such as selection of plus trees, assemblage of germplasm, CSO, SSO, SPA, clonal bank, tree breeding and productivity enhancement were dealt in **Genetics and Tree Improvement module**; basics of remote sensing and GIS; practical application of GPS and demonstration of application of QGIS under **GIS & Remote sensing module**; forest genetic resource management and seed handling techniques under **Forest Genetics Resource Management module**; Mycorrhizal Fungi – Isolation, Identification and Mass Production Methods (Biofertilizer production), identification and multiplication techniques of beneficial bacteria/growth promoting microorganisms under **Microbiology module**; insect identification and pest control measures under **Forest Protection module**; soil sampling, methods of sampling, processing of soil samples, determination of soil properties such as pH, EC, OC, available nutrients, plant sampling, analysis, interpretation of analytical results under **Soil and Plant analysis module**; Molecular techniques such as DNA isolation, DNA markers etc. under **Molecular Markers module**; collection and processing of plant samples, extraction, fractionation using column chromatography and Thin Layer Chromatography (TLC), and characterization, identification of bioactive compounds using UV Spectrophotometry, HPLC, and GC/MS/MS, evaluation of bioactive principles for biological properties under **Bioprospecting module** followed by experimental design, data collection, analysis using appropriate statistical tools and scientific report/paper writing under **Research methods**,

**Biostatistics and Scientific writing module.** They were provided hands on training on advanced instruments.

The Director, Dr. C. Kunhikannan had an interactive session with the students on “**Introduction to Environmental Conservation**” on 17<sup>th</sup> July, 2023. During the session, he explained about nature’s role in sustaining living organisms.

The list of resource persons and their delivered topics have been detailed below.

Dr. R. Archana, Scientist-B from Genetics and Tree Improvement (GTI) division on research methods and Biostatistics, Dr. A. Rajasekaran, Scientist-F from Forest Ecology and Climate Change (FE&CC) division on fundamentals of GIS & remote sensing , Dr. R. Anandalakshmi, Scientist-G from Forest Genetic Resource Management (FGRM) division on tree seeds. From Forest Protection (FP) division Dr. A. Karthikeyan, Scientist-G on microbiology and Dr. K. N. Ashrith, Scientist-B on forest entomology, Dr. A.C. Surya Prabha, Scientist-D from Silviculture and forest management (SFM) division on soil and plant analysis . Scientists from Chemistry and bio-prospecting division Dr. N. Senthilkumar, Scientist-F on bio-prospecting and bio-products development , Dr. D. Thangamani, Scientist-D on Molecular markers and Dr. Rekha Warriar Scientist-F & Head on Scientific writing.

Research officials who had contributed during laboratory experiments, practical classes in nurseries and seed bank were Mrs. K. Shanthi, CTO, Mrs. R. Sumathi, CTO, Mrs. S. Lalitha, CTO, Mrs. B. Sunitha, CTO, Mrs. S. Geetha, ACTO, Mrs. K. Sushamani, TO, Mrs. M.V. Vineetha, STO, Shri K. Suresh Kumar, TO, Shri S. Pragadeesh, TA, Ms. Srijita Ganguly, TA, Shri S. Muthupandian, TA, Shri S.S. Abhijith, Technician and research scholars.

The three weeks internship ended with a valedictory session on 21<sup>st</sup> July, 2023. Dr. C. Kunhikannan, Director, ICFRE-IFGTB, Coimbatore, Dr. Rekha R. Warriar, Head, Chemistry and Bioprospecting Division, Dr. D. Thangamani, Scientist- D, Chemistry and Bioprospecting Division and various module coordinators graced the valedictory function and gave their concluding remarks. The students made a brief presentation on the training modules and various activities covered during the training. The training coordinator Dr. N. Senthilkumar, Scientist F presented a short report on internship training. The Director, Dr. C. Kunhikannan in his valedictory address stated that the training might have ignited research interest in students and the advance research techniques learned would enhance the knowledge and research skill for righteous life. Student participants opined that the training module was appropriate for their current academic and future research endeavour. They showed lots of interest in exploring more on various modules covered. The research experience they encountered would help to trigger various embedded skills and talents. The director distributed participation certificates to internship trainees followed by the formal vote of thanks by Dr. D. Thangamani, Scientist-D.



**Dr. Rekha R.Warrier, Scientist-F & Head addressing the participants**



**Trainees visit to Gass Forest Museum**



**Dr. C. Kunhikannan, Director's interactive session with the students on "Introduction to Environmental Conservation"**



**Dr. R. Archana, Scientist-B detailing Genetics & Tree improvement**



**Dr. A. Rajasekaran, Scientist-F detailing GIS & Remote Sensing**



**Dr. R. Anandalakshmi, Scientist-G detailing FGRM**



**Dr. A. Suryaprabha, Scientist-D demonstrating soil analysis**



**Dr. A. Karthikeyan, Scientist-G detailing Microbiology**



**Dr. N. Senthilkumar, Scientist-F detailing Bio-prospecting**



**K. Shanthi, CTO demonstrating vegetative multiplication**



**B.Sunitha, CTO brief introduction about the museum exhibits**



**K. Sushamani, TO demonstrating Microbiology**



**M.V. Vineetha, STO demonstrating FGRM**



**Final presentation by the trainees**



**The Director Dr. C. Kunhikannan distributed the certificates to student participants**



**Group photo during valedictory programme**