TRAINING REPORT ON

"RESEARCH METHODOLOGY AND STATISTICAL TOOLS IN FORESTRY"

FOR ICFRE TECHNICAL STAFF

SPONSORED BY
INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION, DEHRADUN

21 – 25th January, 2019
INSTITUTE OF FOREST GENETICS & TREE BREEDING, COIMBATORE

Role of applied statistics in Forestry research is very crucial starting from the data collection, its analysis and interpretation of the valid results for the specified objectives. More so statistically designed experiments with models are important in field experiments to gain a better understanding of trees, stand, and forest responses to minimize the biasness's and experimental error. Considering the importance of research methodology and statistical tools in forestry research, IFGTB through Extension division, **imparted 5 days training program on "Research Methodology and Statistical tools in Forestry" to the Technical staff of ICFRE during 21-25th January, 2019**. The major objective of this workshop is to sensitize and erudite the participants about the various Research methodologies to be adopted and the appropriate Statistical-tools and package to be used in their research works and further the interpretation of the results obtained from such analysis, thereby helping the present as well as future researchers to evolve an understanding of the research tools and statistical packages that meet both the current and future needs. The training was **sponsored by Indian Council of Forestry Research and Education (ICFRE), Dehradun.**

The five day module was attended by 14 Technical Staff of ICFRE in the category of Assistant Chief Technical Officer, Senior Technical Officer, Technical Officer, Senior Technical Assistant, Technician from Tropical Forest Research Institute (TFRI), Jabalpur, Indian Wood Science and Technology (IWST), Bangalore and Institute of Forest Genetics and Tree Breeding(IFGTB), Coimbatore. The training programme started on 21st January, 2019 and Shri. Maria Dominic Savio, Scientist welcomed the participants. Shri. Rajesh Gopalan, IFS, Training Coordinator and Head, Extension Division, IFGTB welcomed the guests and participants and gave an over view of the training module and schedule. Dr. S. Murugesan, Group Coordinator Research, IFGTB, in his inaugural address highlighted the role of statistics in

scientific research. He stressed that subject of research would be incomplete without appropriate methodologies for research. He also pointed out that erroneous results and faulty conclusions are more likely outcomes in the absence of proper scientific and statistical methods in the conduct of research. The inaugural session ended with vote of thanks by Smt. R. G. Anithaa, Sr. Technical Assistant, IFGTB.

Day 1:

The first technical session was by Dr. V. Sivakumar, Scientist, IFGTB on "*Research Methodology*", wherein he provided a comprehensive overview of a range of research paradigms of methodologies needed to structure and solve a research problem. He also briefed the scope, research design, data collection, and sampling techniques.

During post lunch the participants visited *Karunya Field Station.* Dr. V. Sivakumar and Extension team where they were exposed to Design of experiments, replication methods, measurement of girth of trees.

Day 2 - 22.01.2019

The first session was handled by Dr. Ayyasamy, Rtd Professor, TNAU on the application of Statistics in Forestry. The next session was on "*Data Handling and analysis*" by Dr. V. Sivakumar, Scientist, IFGTB where participants were given practical training in the analysis of data collected in Karunya Field. The post lunch session Dr. Sivakumar briefed the participants in "*Designing and analysis of experiments*" and gave them hands on experience using a sample data from the experiments of IFGTB.

Day 3 - 23.01.2019

Participants were taken to "*field visit to Research trials and permanent preservation plots of genetics Division, TNFD at Glenmorgan, Ooty*", where Retired Range officer Shri. Angamuthu gave the overview of planting methods on hilly region, designing of nurseries and uses of medicinal plants. They were also taken to Eucalyptus plantations in Aramby research centre.

Day 4 - 24.01.2019

The morning 1st session of 4th day was delivered by Dr. Bhuvaneswaran who elaborated the "*T-test, Regression and Correlation Analysis*". Later on the participants were taught on the basic entry of data in excel for calculation of descriptive statistical, regression, correlation.

In the afternoon *practical hands on training of* **Statistical Package for the Social Sciences** (*SPSS)* to the participants were provided wherein basic concepts used to handle SPSS software was briefed upon and its utility along with a comparison with MS excel's data.

Day 5 - 25.01.2019

The morning session was handled by Dr. Rekha Warrier, Scientist, on **scientific *writing*** wherein she highlighted on the need for developing skills on writing scientific papers and other essential criteria and requirement to be considered while writing a paper.

Objective Assessment: Later on a written (objective) snap test was conducted among the participants to assess the learning of the training. The participants were evaluated, during the evaluation it was assessed that 4 of them scored 35-45%, 9 of them scored in the range of 50 – 75% and 2 participants could score > 75%.

Group Work: Later on the participants were divided in to five groups and each group was given five types of problems for analyzing t-Test, F-Test, 2 Way ANOVA, Correlation & Regression. The groups worked on the given data and statistically analyzed them for the mentioned tests and the results were interpreted and presented. Each group made a presentation of the data analysed and interpretations made by them.

Workshop concluded with the feedback and valedictory session on 25.01.2019. A brief outline of the sessions of the training program was presented by Smt. R. G. Anithaa, Sr. Technical Assistant. The course Co-ordinator Shri. Rajesh Gopalan, IFS, Head, Extension delivered his impressions on the training program. Dr. S. Murugesan, Group Co-ordinator Research, IFGTB had addressed the concluding session of the training. He reiterated that the imperative of organizing such training lies in improving the overall quality of research works of the participants. This was followed by a brief feedback session from the participants of the training. Certificates were presented to the participants. The training was concluded with a vote of thanks proposed by Shri. P. Chandrasekaran, Sr. Technical Officer.

DIRECTOR
IFGTB

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Inaugural Address by Dr. S. Murugesan, GCR, IFGTB

Field exercises in Karunya Field Station, Coimbatore

Technical session on Applied Statistics in Forestry by Dr. Ayyasamy, Professor (Retd), TNAU

Lecture on "Research Methodology" by Dr. V. Sivakumar, Scientist, IFGTB

Data Analysis by the participants in GIS lab of IFGTB

Field visit to Aramby Eucalyptus Plantation, Glenmorgan, Ooty

Lecture on T-Test, Correlation & Regression by Dr.V.Buvaneswaran, Scientist, IFGTB

Group work presentation by the participants

Valedictory session of the trianing

Certificate Distribution to the participants