Project: National Program for Conservation and Development of Forest Genetic Resources Methodology- Component D- Characterization of forest genetic resources

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Duration 5 years 2020-2025
Budget: Rs. 50.00 lakhs

Objective- Molecular/biochemical characterization of selected species / populations

Biochemical characterization of 5 *in situ* prioritized species- *Myristica malabarica*, *Dysoxylum malabaricum, Kingiodendron pinnatum, Cullenia exarillata* and *Mesua ferrea*

From western ghats ever green forest areas forest divisions, the leaves were collected from neary250 accessions of 5 *in situ* prioritized species *Cullenia exarillata,Myistica malabarica, Dysoxylum malabaricum, Mesuaferrea* and *Kingiodendron pinnatum*. The DNA was extracted from all leaf samples.Biochemical characterization of 5 *in situ* prioritized species was carried out. Qualitative analysis revealed the presence and absence of secondary metabolites. It shows the presence of Alkaloid, Tannins, Saponin, Phenols, quinine, Glucoside, Terpenoids, Steroids, Flavonoids and absence of Anthraquinone. By using spectrophotometer analysis, quantitative analysis like Total flavonoid, Total phenol and Total tannin from leaves was estimated.The molecular characterization of five species was performed and assessed using software such as DARwin 6 and GenAlEx 6.5.Using Transcriptome analysis and krait software 250 SSR primers were designed. Transcriptome analysis has been completed and the META data has been deposited in NCBI for the 5 species.A set of 9 primers was evaluated for their suitability in analyzing polymorphism, whichproduced distinct and reproducible amplification patterns. These selected SSR markers weresubsequently optimized and employed for genotyping all samples and genetic diversity between populations were assessed.