

Project 1: Development of decision support system for predicting suitability of tree species in various climatic conditions in central India [059/TFRI-2003/Misc-IT-1 (1)/2003-2006]

Findings: A user-friendly package ♦PLANTPAK♦ has been developed and tested successfully to evaluate the climatic suitability of forestry species in central Indian region. The package can be used to store, retrieve and display information based on simple key strokes. The package provides query on textural as well as map basis. The package is tested with 15 data records and all the features including data entry, information retrieval based on species name, location, climatic as well as edaphic fields are working properly. The package is successfully tested for providing map based retrieval of information of suitable species.

Project 2: Germplasm conservation and investigation on inheritance pattern of *Gmelina arborea* [040/TFRI-2002/Gen-1(6)/ 2002-2007]

Findings: As availability of germplasm is a building block for effecting genetic improvement of any species, a germplasm bank with 49 diverse clones was established. To derive information on inheritance of growth traits during the project period, data on growth from earlier established progeny trials was collected. In addition to this a new CSO-cum-progeny trial comprising of 11 families was established in complete randomized block design.

Germplasm bank of 49 clones, production population with 36 clones and progeny trial comprising of 11 half-sib families were maintained. Growth data from progeny trial was collected and statistically analysed according to Zobel and Talbert (1962). Analysis of variance revealed significant differences among the families for both height (ranging from 47.77 to 76.11 cm) and collar girth (ranging from 3.77 to 6.01cm). Height showed 63 and 70 percent whereas collar girth exhibited 73 and 62 percent heritability at individual and family levels, respectively. Both the traits were also found to be associated with each other as revealed by their significant correlations. Families Zagadpur-5 ORBLG- 1, ATIA-39, ATIA-45 and ORBLG-5 outperformed other families as indicated by their positive general combining ability (gca) values.

Project 3: Screening populations of *Dalbergia sissoo* for tolerance to salt and water stress using physio-morphological and bio-chemical criteria [067/TFRI-2004/Gen-2(9)/ 2004-2007]

Findings: Experiment was conducted to test 4 regimes of salt stress in sand culture pots. Growth and biomass accumulation and various biochemical parameters were investigated for 8 weeks at weekly intervals. The 4 populations of *Dalbergia sissoo* exhibited variable response with respect to these parameters. In conclusion, *D. sissoo* populations had considerable salt tolerance. Beside half-sib seeds were collected from various populations from Maharashtra and Madhya Pradesh and seed germination was tested against high salt concentrations.

Project 4: Evaluation of non-wood forest waste material for use in bio-composites [106/TFRI/2006/NWFP-1(21)/ 2006-2007]

Findings: Different forest areas viz. Kajol Nadi, Jabbara, Dugli, Achankmarg in Chattisgarh and Amarkantak in M.P. were surveyed and NWFP waste materials (leaves of Nagarmotha; Kans waste not used for rope making; lemon grass left over after extraction of essential oil) were collected. All the samples were processed for the estimation of ligno-cellulosic contents in the leaves.