

### Project Profile

Project Code:	NFRP 115
Project Title:	Genetic Improvement of <i>Gmelina arborea</i> Roxb. through selection and clonal evaluation
Principal investigators	Dr. A.Mayavel, Scientist -E
CO-PI:	Dr. V.Sivakumar, Scientist-G
Funding Agency	ICFRE
Date of commencement of the project:	01-04-2011
Date of completion of the project:	31-03-2016
Budget Outlay	Rs. 2271000

### Objectives:

Long term objectives:

1. Genetic Improvement of *Gmelina arborea* through plus Tree Selection and quality planting stock production

Short term objectives:

2. To identify natural population of *G. arborea* in southern parts of India.
3. To select individual tree based on the tree form, wood trait and growth superiority.
4. To study the phenological and floral variations among the selected CPTs.
5. To establish progeny trial and clonal trial from the selected phenotypes for future breeding program

### ABSTRACT OF SIGNIFICANT FINDINGS

The intensive survey was carried out in natural forest and farmers plantation of Tamil Nadu, Kerala and Andhra pradesh. Selected 90 CPTs based on growth superiority, clear bole and pest and disease resistance. The CPTs were marked with GPS. The data on bio-metric, phenology and reproductive character have been recorded from selected CPTs. Wood sample (core) collected from selected CPTs and analyzed wood density, fiber length and lumen diameter and fiber angle. The reproductive characters like time and mode of anthesis, pollen fertility, no of stamen, no of pollen , pollen ovule ratio and visitor for pollination have been observed. Seeds were collected from selected CPTs and studied seeds variation of different open pollinated families through image analyser. Standardized nursery techniques for large scale multiplication and studied variation in seedlings characters of different population. Established progeny trail of *Gmelina arborea* at Salem and Thuvankurichi with 44 open pollinated families planted randomized block design in a spacing of 4 x4. Morphological data has been recorded for evaluating performance of progenies. Standardized silvicultural techniques for commercial cultivation of *Gmelina* in farmland.