

## PROJECT COMPLETION REPORT

- 1. PROJECT NO** : RAG/PLAN/IWST/TIP/X-67/6-126/FRC/08
- 2. TITLE OF THE PROJECT** : Genetic improvement of *Melia azedarach* L. and *Melia dubia* Cav. through plus tree selection assessing the genetic variability and progeny trial establishment (phase-1)
- 3. PRINCIPAL INVESTIGATOR:** D r. G. R. S Reddy, Scientist-F  
& ASSOCIATES: Dr. Swapnendu Pattanaik, Scientist-E
- 4. PROJECT APPROVAL DATE**
- a) RAG : 2006
  - b) RPC : 2007
  - c) ICFRE : 2007
- 5. DATE OF COMMENCEMENT OF PROJECT:** April 2007
- 6. DATE OF COMPLETION OF PROJECT** : September 2011
- 7. TOTAL BUDGET OF THE PROJECT** : 13.19 lakh (Revised budget)
- i) List of equipment procured under the project (with cost): Nil
  - ii) Total expenditure on the project: 12.9 Lakh

## 8. ABSTRACT OF SIGNIFICANT FINDINGS:

- Thirty Plus Trees of *Melia dubia* and *Melia azedarach* respectively were selected based on the morphometric traits to identify suitable seed sources with high oil content.
- The seeds of *M. azedarach* collected from plus tree number PAK-9 of Dharwad sources was estimated to have the higher oil content as compared to other sources.
- The seeds of *M. dubia* collected from plus tree number PDT-12 of Thalamalai sources was estimated to have the higher oil content as compared to other sources.
- Seed germination study in case of *M. dubia* revealed that depulping the fruits and soaked in normal water for 168 hr significantly enhanced seed germination percentage.
- Seed germination study also revealed that the seeds collected in the month of January to February gave the best results in *M. dubia*.
- The progeny trials were established using seeds of plus trees from Karnataka, Tamil Nadu and Andhra Pradesh at Forest Research Centre, Hyderabad and Nallal Field Research Station, Bangalore. The survival percentage was found to be 100% in both the species.
- Under field evaluation studies, growth parameters were recorded and analysis of variance indicated significant difference among the seed sources for all the characters studied.
- DNA extraction method was standardized for both the species CTAB method (Doyle and Doyle, 1990) with some modification.
- RAPD studies for both the species provided the basic information that there is variation among the plus trees populations this will be used as a base to initiate the advanced studies in tree improvement programme.

## 9. Research Output

### 9.1.1 Improved seed germination technique

9.1.2 Progeny trials were established at Forest Research Centre, Hyderabad and Nallal Field Research Station, Bangalore.

9.1.3 Please see the format

## 9.2 Peer- Reviewed Journal publication(s) arising directly from this research project (please include a copy of the publication and or letter of the acceptance in this section)

9.2.1 Full length Revised paper entitled “Micro Propagation of *Melia dubia* Cav. Ex M. Roem –a fast growing multipurpose tree species” after peer review submitted to Acta Horticulturae in accordance to conference proceedings of 7th International Symposium on *In vitro* Culture and Horticultural Breeding Biotechnological advances in *In Vitro* Horticultural Breeding.