

Indian Council of Forestry Research & Education
(An Autonomous Body of the Ministry of Environment & Forests, Govt. of India)

ABSTRACT OF COMPLETED RESEARCH PROJECT

Institute: Forest Research Center, (Institute of Wood Science and technology, Bangalore) Hyderabad.

Division: N.A.

9. **Project title and Code:** Natural variation studies in rosewood (*Dalbergia latifolia* Roxb.) for tree improvement

1. i). **Principal Investigator:** Dr. G.R.S. Reddy Scientist –E

a. ii). Co-PI: Nil

2. **Duration of the Project:** From November 2003 to March 2008

3. **Location:** Forest Research Center, Hyderabad

4. **Objectives:**

i. Screen (Survey, identification and selection of) natural populations of red sanders for qualitative and quantitative parameters

ii. Collect the germplasm (seeds and cuttings) ,

iii. Raise individuals/ families for creating breeding populations

Major findings: A total of sixty six populations were studied based on provenance delimitation criteria and based on stem form, height and GBH, selected some of the populations that are known to be better than the others for these parameters. The populations in The populations in Adialabad, Khammamm, Warangal, Karimnagar, Bhadrachalam, Jannaram, Kakinada and Eluru, Forest Divisions of A.P. Though, the Karnataka state has several areas in Dandeli, Haliyal and Yellapur Divisions besides Southern and Northern Karnataka were surveyed and identified certain trees for their phenotypic superiority and collected their germplasm A number of plus trees were marked in various parts of the AP. Propagated 390 plants from different collections and maintained them well from 39 Localities

and 60 candidate trees through seed. The vegetative propagation technique was not found to be encouraging with lower than 2-5 per cent rooting and do not reach field stage [it is a hard to root species]. The propagation is achieved in polytunnels without temperature and humidity controlling automatic systems. Induction of root suckers by exposing the lateral roots closer to the surface was found to be very encouraging their transfer from field into polybag was found to be very difficult. Out of 300 suckers 36 survived on the field. The progenies of Rosewood Populations brought from these Localities viz., The study resulted in identifying the superior phenotypes from different localities for GBH and heights viz., Nandyal GBM 1945 TPGBM, Bhagwathy (Haliyal-Yellapur), Kannegiri, Addageri (Haliyal, Karnataka), Lakkavaram (Compartment 11), Lakkavaram Sukkumamidi old (Compartment 37), where as the localities like Pembi (Nirmal Forest Division), Amarabad Farhabad (Achampet Forest Division), Eturunagarm (Chityal block No 12 and 21) Mahanambedu, Satyavedu, (Chittor East Forest Division) were found to be superior to others for height growths. Progenies of Haliyal and Yellapur populations were on par with the A.P. progenies. These superior progenies can be multiplied and extended to farmers and SFD's.

They are found to be the progenies raised from the collections of localities as mentioned below:

Eturunagaram, Chityal block, C.No.21, Chintur, Pulusumamidi, Indanpally, Kawal, Lakkavaram Sukkumamidi oldCompartment No. 37, Putturu, Ontimitta, Birsaipet, Kawal, Punganur, Gollapally, Marringua Compartment No.4, Polavaram (Eluru), and Rampachodavarm, Yegisalanka exhibited very significant GBH growths as compared to Putturu, Ontimitta, Eturunagaram, Chityal block, C.No.21, Birsaipet, Kawal; Indanpally, Kawal, Chintur, Pulusumamidi; Polavaram, Zaheerabad, Sadashivapet; Lakkavaram Sukkumamidi oldCompartment No. 37; Rampachodavarm, Yegisalanka and Putturu, Bhattikandriga were found to be very promising for height growths. Of them Birsaipet, Kawal, Polavaram, Kannegiri (Yellapur) have exhibited both height and GBH increments *have* performed significantly superior to others over a six year period.

7. Shortfalls, if any : Nil
8. Funding agency (ICFRE/Name of external agency) : ICFRE
9. Amount sanctioned : Rs. 0.50 Lakhs
10. Expenditure incurred : Rs. 0.50 Lakhs

11. Publications : Nil

12. Patent No., if any : Nil

14. Technology developed for user groups :

The Plus trees and their populations were studied and based on quantitative parameters and statistical analysis selected certain populations with 10 individuals per population and 39 Localities. Three hundred and ninety plants were raised from 60 trees from these best 39 localities have been multiplied, raised in single site to evaluate their relative performance. The study resulted in identifying the superior phenotypes from different localities for GBH and heights viz., Nandyal GBM 1945 TPGBM, Bhagwathy (Haliyal-Yellapur), Kannegiri, Addageri (Haliyal, Karnataka), Lakkavaram (Compartment 11), Lakkavaram Sukkumamidi old (Compartment 37), where as the localities like Pembi (Nirmal Forest Division), Amarabad Farhabad (Achampet Forest Division), Eturunagarm (Chityal block No 12 and 21) Mahanambedu, Satyavedu, (Chittor East Forest Division) were found to be superior to others for height growths. Progenies of Haliyal and Yellapur populations were on par with the A.P. progenies. These superior progenies can be multiplied and extended to farmers and SFD's.

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15. Whether technology is transferred to any user group : No

a. If yes

i. Name of the technology :

- ii. Year of transfer :
- iii. Method of transfer :
- iv. User groups and their response, if any :
- v. Amount received :

b. If no, reasons for not transferring the technology:

Four interactive seminars were conducted on tree improvement and breeding aspects to higher officials in State Forest Department. So far this species is only planted by the State. However, recently farmers are evincing interest in the species. The superior germplasm needs to be multiplied and distributed for its adoption and cultivation.

15. Any other information : Nil

16. Reference of Completion Report (For ICFRE only) :
