

ABSTRACT OF THE PROJECT

1.	Project Code	FRC/XI/16
2.	Name of the Project	Population genetics and phylogeography of <i>Pterocarpus santalinus</i> L.f. and its <i>ex situ</i> conservation through biotechnological interventions.
3.	Funding Agency/ Agencies	ICFRE
4.	Institute/ Directorate (ICFRE Hqrs.)	Institute of Forest Biodiversity (formerly Forest Research Centre), Hyderabad
5.	Name and Designation of Principal Investigator	Dr. Swapnendu Pattanaik Scientist E
6.	Name (s) and Designation (s) of Co-Principal Investigator (s) and Associates, if any	Dr. G.R.S. Reddy Scientist F Dr. Arun Kumar Scientist E
7.	Division	Forest Genetic Resources
8.	Project Discipline	Biotechnology
9.	Objectives of the Project	<p>Long-term</p> <ul style="list-style-type: none"> • To assess genetic diversity and differentiation in <i>Pterocarpus santalinus</i> L.f., and develop strategies for its conservation and management. <p>Short-term</p> <ul style="list-style-type: none"> • To study genetic diversity and differentiation in the natural, endemic populations of <i>Pterocarpus santalinus</i> L.f. • To study genetic relationships (phylogeography) among the natural populations of <i>Pterocarpus santalinus</i> L.f. • To conserve (<i>ex situ</i>) germplasm of <i>Pterocarpus santalinus</i> L.f., including genotypes having wavy grained

		heart wood, by way of establishing germplasm bank.
10.	Species involved	<i>Pterocarpus santalinus</i>
11.	Experimental Work	
a)	Methods adopted	<ul style="list-style-type: none"> • Survey and selection of populations • Collection of genetic material • DNA extraction using CTAB protocol • DNA quantitation against λ DNA standards • Generation and documentation of PCR-RFLP chloroplast DNA markers • Data analysis using Haplotype Analysis software
b)	Equipments used, if any	<ul style="list-style-type: none"> • Mini gradient thermal cycler • Agarose gel electrophoresis • Gel documentation system • Micro-centrifuge • Micro-pipettes (4 nos.) • Vortex mixture • Water bath • Dry bath • Refrigerator • Hotplate-cum-magnetic stirrer • Ultra-pure water purification system • Deep freeze (-20°C) • Vertical gel electrophoresis • PCR work station • Rotary mixture
c)	Scope (States covered)	Eastern Ghats, Andhra Pradesh
12.	Date of commencement of the Project	May 2010
13.	Date of completion of the Project	June 2013
14.	Budget outlay of the Project	Rs 25.0 Lakhs (Provisional)

15.	Expenditure incurred on the Project	Rs. 17.81 Lakhs
16.	Reason for financial deviation	The actual allotment was less than the provisional budget outlay.
17.	Manpower involved	
(a)	No. of Scientists/ officers	Nil
(b)	No. of Research personnel	One Junior Research Fellow
(c)	No. of office staff	Nil
18.	Extension of findings to the User Groups	Findings disseminated through one seminar presentation
19.	Publications from the findings of the Project	One publication
20.	Patents, if any	Nil
21.	Project Summary/ Achievements/ Findings	<p>A study was undertaken at the Institute of Forest Biodiversity, Hyderabad, to assess diversity and structure present in the natural populations of Redsanders using chloroplast DNA markers. The study revealed low within population and total diversity ($H_s=0.116$ and $H_t=0.650$). Most of the diversity was attributed to among population diversity. A strong geographic structure ($F_{st}=0.822$) was detected among the studied populations. The study detected three distinct haplotypes suggesting the presence of three genetic lineages in the natural Redlander populations, the implications of which is discussed in this report.</p> <p>A germplasm bank containing five hundred germplasm from eight different source populations have been established at the Institute of Forest Biodiversity campus. Germplasm from the three genetic lineages, as detected in the present study, are conserved. The germplasm bank will be a useful source of genetic material for future studies.</p>

P. Hanuman
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