

**Completed NFRP  
PROJECT PROFILE**

<b>Title:</b>	Allelic diversity of Cinnomoyl coA reductase gene (CCR) in <i>Casuarina equisetifolia</i>
<b>Principle Investigator:</b>	Dr. A. Shanthi
<b>Co Investigators:</b>	Smt. Sumathi
<b>Duration:</b>	4 years ( 2008-2012)
<b>Objectives:</b>	<ul style="list-style-type: none"> <li>To study the allelic diversity of Cinnamoyl CoA reductase (CCR) and its correlation with lignin/cellulose content of <i>Casuarina equisetifolia</i></li> </ul>
<b>Funding Agency:</b>	Indian Council of Forestry Research and Education (ICFRE)
<b>Achievements</b>	<p>For the identification of DNA marker for lignin gene Cinnomoyl coA reductase (CCR) in <i>Casuarina equisetifolia</i>, a study was carried out initially to estimate the basic wood proximate characters of the twenty five shortlisted clones. The results obtained from this proximate study showed variation especially in the wood traits (Hollocellulose and Lignin content) which are economically useful in the paper pulp industry. The study showed that the local clones have higher lignin content than the international sources. The present study identified four clones having higher holo cellulose content [TNIPT-12 (80.7%), TNIPT-15 (80.4%), PY131 (80.0%), TNRM-8 (80.0%)] which are most preferable for the paper pulp industry.</p> <p>The CCR enzyme activity was estimated. using spectrophotometer . The study showed in four clones ( TNIPT-21 TNIPT-,18, TNIPT-15, TNBS-8) have higher content of trans cinnamic acid ( &lt; 220umoles ).</p> <p>Twenty set of CCR primers pairs were developed. Two degenerated primer pairs were well amplified with specific product sizes. Cloning work was optimized with modification in ligation procedure using pTZ57R/T vector. Positive colonies were sequenced. Sequence data were analysed in BLASTn &amp; CLUSTALW programmes. CCR gene confirmation in <i>Casuarina equisetifolia</i> resulted a partial gene sequence was annotated and submitted in NCBI ( Accession No: <b>JQ982980</b>).</p>