

## PROJECT PROFILE

<b>Title of the Project</b>	:	<b>Identification of superior growth promoting strains of <i>Frankia</i> in <i>Casuarina equisetifolia</i> and <i>C. junghuhniana</i></b>
<b>Principle Investigator</b>	:	Dr. A. Karthikeyan
<b>Co Investigators</b>	:	Nil
<b>Duration of Project (Start &amp; End)</b>	:	4 years (01-03-2009 to 31-03-2013)
<b>Objectives</b>	:	<ol style="list-style-type: none"> <li>1. Screening and selection of superior strains of <i>Frankia</i> for growth improvement of <i>Casuarina</i> spp..</li> <li>2. Studies on growth performances of <i>C. equisetifolia</i> and <i>C. junghuhniana</i> with superior strains of <i>Frankia</i> under field conditions</li> <li>3. Establishment of Germplasm bank of <i>Frankia</i> and analysis of nitrogenase activity</li> </ol>
<b>Funding agency</b>	:	Department of Biotechnology
<b>Summary/Achievements</b>	:	<p><i>Casuarina</i> spp were associated with a nitrogen fixing bacteria called <i>Frankia</i>. To achieve <i>Frankia</i> inoculation in seedlings the root nodules from matured trees were collected and used conventionally for inoculation. But in this method the <i>Frankia</i> some times inactive when planted <i>Casuarinas</i> pp. and would not produce root nodules. The cultured <i>Frankia</i> with minimum dosage will achieve root nodulation for nitrogen fixation in the seedlings and cuttings. In this project site specific strains of <i>Frankia</i> were collected, cultured and inoculated in seedlings and cuttings of <i>Casuarinas</i>. Simultaneously in nursery conditions the <i>Frankia</i> inoculated seedlings and cuttings were observed for the growth improvement in <i>C. equisetifolia</i> and <i>C. junghuhniana</i>. This method will give active <i>Frankia</i> for nitrogen fixation than the existing method in nursery and field conditions. Further the superior strains of <i>Frankia</i> have been identified in this project based on their nitrogenase activity used by GC MS. The superior strains produces profuse nodules in the <i>Casuarinas</i> under field conditions.</p>