

Scope and Potential of *Casuarina junghuniana* Miq. Plantations in Livelihood Support of Farmers in Semi-arid Regions of Peninsular India

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Abstract

Casuarina junghuniana, an extra-australian species, native to Indonesia has gained popularity among farmers in Tamil Nadu and Andhra Pradesh States in the recent years. This species is well suited for cultivation in the inland dry regions with a rainfall of 500 to 800 mm compared to *C. equisetifolia* which is normally grown in the coastal region with irrigation. The first introduction of *C. junghuniana* to India was made in 1951 by importing the cuttings from Thailand which is now identified as a hybrid male plant. However large scale planting by farmers happened during the last 8-10 years when seeds were made available from seed orchards of IFGTB. The species gained importance among farmers for characters such as fast growth, drought tolerance, resistance to blister bark disease and more importantly coppicing ability. The coppicing ability helps the farmers to make two or more harvests from a single planting and also makes the species amenable for clonal plantations. The faster growth and higher wood density ensured increased economic returns from unit area and time. High seed count of about 1.6 million seeds per kg coupled with germination up to 90% help in large scale nursery production of seedlings. The versatility of the species can be suitably utilized for increasing the income of farmers living in semi-arid regions apart from expanding green cover in the areas.

Precision silvicultural practices such as optimization of seed use in the nursery beds, ideal espacement, and field-planting techniques need to be standardized for various agroclimatic regions in India. Application of *Frankia* isolates has given encouraging growth in China, but these isolates have been made from *C. equisetifolia* and other species necessitating the experimenting with isolates from *C. junghuniana*. Experimentation on hybridization has shown that the species is amenable for production of interspecific hybrids which will help in developing site specific clones for dry areas.