

Selection and Evaluation of Phenotypes of Casuarina for Windbreak Agroforestry System

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Abstract

Banana is the third important commercial crop in the western zone of Tamil Nadu, India planted in about 30,000 ha producing more than a million tonnes of fruits. Banana farmers of this region incur a loss of about Rupees 50 million annually due to crop damage by strong winds. These plantations require a windbreak system which is a narrow row of trees planted bordering the banana crop. The Institute of Forest Genetics and Tree Breeding, Coimbatore, has taken up an initiative to select superior phenotypes of *Casuarina junghuhniana* suitable for windbreak agroforestry system. A field survey was conducted and 21 phenotypes were selected by adopting a 'point grading method', giving high score for productivity and branching. The selected phenotypes were clonally propagated and a germplasm bank was established. Based on rooting ability and initial growth, ten clones were shortlisted and further multiplied for field trials. Three multi location trials were established. Data has been collected on six traits for evaluation viz. girth at breast height, total height, number of branches up to 3 m height from the ground, branch length, branch thickness (mid-girth of branch) and branch angle (to the main stem). A widely planted natural hybrid clone of *Casuarina junghuhniana* x *Casuarina equisetifolia* was used as a check clone. Superiority of test clones of *Casuarina junghuhniana* under windbreak agroforestry system was compared over the check clone for six traits viz. girth, height, number of branches up to 3 m height from the ground, branch length, branch thickness (mid-girth of branch) and branch angle (to the main stem). Five clones viz. CJ-6, CJ-8, CJ-9, CJ-17 and CJ-18 were selected for their superiority in growth and branching traits recommended for planting under windbreak agroforestry systems.

Note : 1USD - Rs.60 (approx.)