

**Project: Evaluation and characterization of clones of casuarina with reference to yield, biomass, pulping characteristics and key nursery pests.**

PI: Dr Kannan C.S. Warriar and Dr A. Balu

Salinity and sodicity are the major factors restricting the economic and efficient utilization of the available land resources. Around 8.6 million hectares are affected by salt affected soils in India. The role of trees in amelioration of degraded soils is well understood. *Casuarina equisetifolia* is identified as one among the fast growing salt tolerant tree species. However, substantial intraspecific variation in salt tolerance have been reported in this species. Significant inter-clonal variation could be observed with reference to tolerance to salt stress when 87 clones of *C. equisetifolia* selected by Institute of Forest Genetics and Tree Breeding, Coimbatore were tested in a sodic site in Tamil Nadu. Identification of economically important tree species which will not only survive, but also grow and yield satisfactorily on problem soils is of utmost importance in the forestry sector. Ten superior clones have been shortlisted which are suitable for sodic sites. Significant reduction in soil pH could be observed over 3 years. The initial pH of 8.4 came down to 7.3. Total nitrogen content of the soil increased from 78.4 kg ha<sup>-1</sup> to 129.3 kg ha<sup>-1</sup> at the end of 3 years. Growing of casuarina enhanced the organic matter content of the soil also (0.55% to 1.24%). The superior clones identified in the study could be used for amelioration of salt affected areas and improving the productivity. These clones once released would be a boon for farmlands affected by sodic salt stress.



View of the clonal test plot of *C. equisetifolia* in a sodic site in Tamil Nadu





Inter clonal variation in *C. equisetifolia*