Casuarina equisetifolia Based Agroforestry Systems for Higher Economic Returns for the Farming Communities in Tamil Nadu, India

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Abstract

Casuarina equisetifolia has emerged as an important fast-growing species and highly suitable for agroforestry, plantation forestry, industrial plantation. Due to its multipurpose nature, farmers especially from the coastal areas in Tamil Nadu, India show interest in casuarina cultivation for higher economic returns. This species grows in a wide range of soil and climatic conditions and has a stable market for pulpwood, pole, fuelwood and props. The present study was conducted for evaluating casuarina based agroforestry system in comparison with other fast growing trees *viz. Eucalyptus* spp. *Melia dubia and Gmelina arborea* for growth and economic return. Under the agroforestry system, four-year old casuarina attained an average height of 12.5 m and average girth of 21.0 cm; 8.5 m and 18.0 cm in Eucalyptus; 5.3 m and 22.0 cm in *M. dubia* and 8.0 m and 20.5 cm in *G. arborea*. Casuarina was intercropped during the first year with various annual crops like Cotton (*Gossypium hirsutum*), Groundnut (*Arachis hypogaea*) and Blackgram (*Vigna mungo*). The economic return from casuarina agroforestry systems was worked out and compared with the other tree based system along with the traditional agriculture. The results showed that casuarina with groundnut based agroforestry system registered the highest net annual return of Rs. 88,827 ha^{-1} yr^{-1} followed by casuarina with groundnut (Rs. 83,281 ha^{-1} yr^{-1}), casuarina with cotton (Rs. 76,529 ha^{-1} yr^{-1}) and the traditional agriculture , only rice cultivation (Rs. 68,381 ha^{-1} yr^{-1}). Casuarina based agroforestry system also recorded higher return compared to the other fast growing tree based agroforestry system within a short rotation period of 3-4 years. Further, this paper discusses the growth pattern of casuarina based agroforestry system, reasons for adoption of tree farming, marketing strategies and economic analysis in detail.

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