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International Journal of Forestry and Crop Improvement

Volume 7 | Issue 1 | June, 2016 | 29-34 | Visit us : www.researchjournal.co.in



e ISSN-2230-9411

RESEARCH ARTICLE

DOI: 10.15740/HAS/IJFCI/7.1/29-34

Growth and carbon stock assessment in three year old fast growing trees grown under wasteland condition at Sivagangai district of Southern Tamil Nadu

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ABSTRACT : A field experiment was conducted to assess the growth and carbon sequestration potential of five fast growing trees namely *Tectona grandis*, *Gmelina arborea*, *Dalbergia sissoo*, *Bambusa vulgaris* var. *vulgaris* and *Swietenia macrophylla*. The saplings of these five species were planted and assessed for biometric, biomass production and carbon accumulation potential. Among the five tree species, *Dalbergia sissoo* and *Bambusa vulgaris* var. *vulgaris* were found to be superior in terms of maximum height, basal diameter, biomass and biomass carbon. *Gmelina arborea* exhibited low height, basal diameter, biomass and biomass carbon. The per cent contribution of biomass carbon was higher in the stems of all the species followed by root, branches and leaves. The field study inferred that, *Dalbergia sissoo* and *Bambusa vulgaris* var. *vulgaris* performed well with higher biomass and biomass carbon productivity under dry land condition and hence these two species can be promoted for afforestation / reforestation of the wastelands in Tamil Nadu under protected irrigation conditions.

KEY WORDS : Fast growing trees, Wasteland, Growth performance, Carbon stock assessment

HOW TO CITE THIS ARTICLE : Hari Prasath, C.N., Balasubramanian, A., Radhakrishnan, S. and Prasanthrajan, M. (2016). Growth and carbon stock assessment in three year old fast growing trees grown under wasteland condition at Sivagangai district of Southern Tamil Nadu. *Internat. J. Forestry & Crop Improv.*, 7 (1) : 29-34, DOI: 10.15740/HAS/IJFCI/7.1/29-34.

ARTICLE CHRONICAL : Received : 20.12.2015; Revised : 07.04.2016; Accepted : 08.05.2016

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