RESEARCH PAPER International Journal of Agricultural Sciences, June to December, 2009, Vol. 5 Issue 2 : 363-368

Productivity studies in selected commercial tree species of tropics

K. GOPIKUMAR

College of Forestry, Kerala Agricultural University, Vellanikkara, THRISSUR (KERALA) INDIA

ABSTRACT

Detailed investigations were conducted in Kera1a Agricultural University, Vellanikkara to evaluate the growth performance, biomass production, physical properties of wood and leaf nutrients of commercial multipurpose tree species grown in the arboretum during the period from 1992 to 2007. A total of 12 species were included in the study with an objective of screening the promising species for their further multiplication for large scale distribution to farmers for farm/agro forestry and general afforestation programme. The results of the study revealed that among the species studied, species like *Terminalia tomentosa, Terminalia bellerica*, *Acacia auriculiformis* and *Acacia mangium* were found fast growing in terms of most of the vegetative growth parameters studied. The total biomass production was found to be maximum for *Terminalia tomentosa* followed by *Adenanthera pavonina* while the lowest total biomass was produced by *Swietenia macrophylla* in terms of both fresh and dry weight. Trunk accounted for maximum biomass production followed by branches. *Acacia mangium* and *Acacia auriculiformis* produced more heartwood compared to other species. *Terminalia bellerica*, *Artocarpus hirsutus* and *Acacia auriculiformis* were having high calorific values and hence could be used for fuel wood purpose also. Specific gravity was found to be maximum for *Swietenia macrophylla* and minimum for *Terminalia bellerica*. The N and P content were found to be maximum in *Adenanthera pavonina* while potassium in *Tectona grandis*. The present series of investigations clearly indicate that there is wide scope for selecting tree species based on their growth behaviour, wood properties and tissue nutrient content before recommending for commercial cultivation under social/agroforestry programme.

Key words : Growth,Biomass, Specific gravity, Calorific value, Heartwood, Sapwood