Journal of Tropical Forest Science 10(1): 35 - 49 (1997)

GROWTH, BIOMASS PRODUCTION AND DISTRIBUTION OF THREE MULTIPURPOSE TREE SPECIES IN AN AGROFORESTRY SYSTEM AS AFFECTED BY PRUNING

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Received August 1995

MIAH, M.G., ARAGON, M.L. & GARRITY, D. P. 1997. Growth, biomass production and distribution of three multipurpose tree species in an agroforestry system as affected by pruning. This paper presents the results of an experiment to assess the growth, biomass production and distribution pattern of three multipurpose tree species (*Acacia mangium, A. auriculiformis* and *Gliricidia sepium*) grown alone and in association with rice and mungbean under pruned and unpruned conditions. The experiment was laid out in July 1990 and concluded in August 1992. The two-year comparative study of tree species showed that *Acacia mangium* attained the highest height (7.6 m), diameter (12.1 cm), and stem dry biomass (17 141 kg ha^{-1}) while *A. auriculiformis* produced the highest leaf (12 465 kg ha^{-1}), branch (16 368 kg ha^{-1}) and total biomass (43 935 kg ha^{-1}) among the unpruned treatments. Intercropping annual crops with the trees had no significant effects on the performance of any of the tree species, but tree branch pruning had a significantly negative effect in all the tree parameters studied. The total biomass in pruned trees was 27-39% lower than that in unpruned trees at the age of two years. Tree species differed substantially in biomass distribution pattern among their constituent parts which might be due mainly to species differences.

Key words: MPTS - growth - biomass production - biomass distribution - tree pruning - annual crops

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