ESTIMATION OF BIOMASS, CARBON STOCKS AND LEAF LITTER DECOMPOSITION RATE IN TEAK TECTONA GRANDIS LINN PLANTATIONS IN CITY FOREST OF HASANUDDIN UNIVERSITY, MAKASSAR

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ABSTRACT

Teak *Tectona grandis* Linn is still used as the main product in the form of wood, while other products, especially environmental services have not received much attention. This study analyzed biomass, carbon stocks and decomposition rate of leaf litter in teak plantations in city forest of Hasanuddin University, Makassar. The individual biomass of teak plants is calculated using the allometric equation $Y=0.11xpx\ D^{2.62}$. Carbon stocks were analyzed using a formulation C=0.47xB. The leaf litter decomposition rate is expressed as the ratio of the remaining litter dry weight, with the formulation X= (A-B)/A. The number of teak plants in 5 sample plots were 239 trees with an average stem diameter of 20.6cm and an average height of 9.02m. Total biomass in 5 sample plots was 51,712.61g. Carbon stocks in 5 sample plots was 24,304.92g. Decomposition rate average of leaf litter of 24.4g during 60 days incubation. The existence of teak plantations is able to reduce CO2 in the atmosphere by as much as 89,199.06g CO2 and resulting in a decomposition rate of teak leaf litter 0.4g per day.

Key words :Tectona grandis, biomass, CO2 uptake, leaf litter, nutrient avalaibility