

**PRELIMINARY INVESTIGATIONS OF GROWTH RATES
AND GROWTH PERIODICITY OF ROOTS IN
SHISHAM (*DALBERGIA SISSOO*)**

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Received February 2, 2010 and Accepted July 11, 2010

ABSTRACT : Knowledge of root growth dynamics of tree species is crucial in selection of species, design of agroforestry system and its management. Preliminary investigations were carried out to find information on growth rates and growth periodicity of roots in *Dalbergia sissoo* in three different age class (three, five and seven year old) and seasonal variation in three distinct seasons viz., summer, rainy and winter. Root distribution study was carried out with Monolith method which involves the partial excavation of soil sample to represent the whole part of the rooting volume of the tree. Among the three seasons of observations, rainy season recorded the maximum rooting intensity, root density and root biomass followed by winter and summer. The results revealed that increase in distance and depth led to decrease in root activity by reduced rooting intensity, root density and root biomass. Maximum rooting intensity of 663.67 m^{-2} and maximum root density of $0.0449 \text{ cm.cm}^{-3}$ were registered in the upper soil category (50 cm distance of 0 - 15 cm soil depth) in seven year old trees during rainy season. Significantly higher root biomass of 501.67 g. m^{-3} was recorded in 50 cm distance of 45-60 cm soil depth category in seven year old trees during rainy season.

Key Words : Root growth dynamics, monolith, rooting intensity, root density, root biomass