

Impact of spacing and inorganic fertilizer on growth characteristics of Sarpagandha (*Rauvolfia serpentina*) under poplar and teak based agroforestry system

Rahat Ali, Antony Joseph Raj and Sameer Daniel

Received October 7, 2010 and Accepted February 2, 2011

ABSTRACT : An experiment was conducted on impact of spacing and inorganic fertilizer on growth characteristics of sarpagandha (*Rauvolfia serpentina*) under poplar and teak based Agroforestry system in 2009-10, on the research farm of Agroforestry and Research centre, School of Forestry and Environment, Sam Higginbottom Institute of Agriculture, Technology & Sciences (Formerly-Allahabad Agricultural Institute) (Deemed-to-be-University) Allahabad, to assess the impact of spacing on growth characteristics of sarpagandha under poplar and teak based Agroforestry system, growth of sarpagandha under poplar and teak based Agroforestry system, spacing and fertilizer interaction on sarpagandha, design applied in split plot design (SPD) 12 treatment replicated thrice, condition were under sole crop, poplar based and teak based Agroforestry system, soil texture was sandy loam (Sand 70.5%, Silt 12.2% and Clay17.4%) for sole crop and shade condition for poplar (Sand 68.5%, Silt 14.5% and Clay17%), teak (Sand 69.4%, Silt 12.6% and Clay18%) respectively, 25 cutting were raised according and data was recorded after the cutting emerge the observation recorded for *Rauvolfia serpentina* plants the growth parameter were taken 90 and 180 days after planting (DAP). Optimum level of spacing 45×45cm and inorganic fertilizers N₃₀ P₄₀ K₃₀ kg/ha appear to the best under both conditions and *Rauvolfia serpentina* response positively as intercropped with poplar and teak. Poplar and Teak planted at row to row distance 9m×9m and plant to plant distance 3m×3m proved to be the suitable tree spacing for no or little adverse effect on the Sarpagandha plant growth.

Key Words: spacing, inorganic fertilizer, poplar, teak, sarpagandha, agroforestry.