



RESEARCH ARTICLE

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Nutrient dynamics studies in sapota timber based agroforestry system under rainfed conditions

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ABSTRACT : Agroforestry plays a vital role in the biological build up of nutrients and sustaining soil fertility for growing crops and getting higher yields for livelihood security. An experiment on nutrient dynamics was conducted from the year 2006 to 2016 at Main Agricultural Research Station, University of Agricultural Sciences, Dharwad on medium black soils under rainfed conditions. Sapota was planted at 8 x 8 m spacing and one timber tree is planted in between two sapota trees. Five timber tree species viz., *Pterocarpus marsupium*, *Tectona grandis*, *Terminalia paniculata*, *Lagerstroemia lanceolata* and *Terminalia alata* were planted in between two sapota and compared to sole sapota. Field crops viz., soybean and safflower were grown in alleys of sapota-timber trees every year in both *Kharif* and *Rabi* season, respectively. The experiment was laid out in Randomized Block Design with four replications. Both physical and chemical parameters and litter fall was worked out. The integration of timber trees with sapota + field crops, pH, EC, WHC, moisture content was increased as compared to initial values. The nutrient build up of organic carbon, nitrogen, phosphorus, potassium were increased with *Tectona grandis*, *Lagerstroemia lanceolata*, *Pterocarpus marsupium* with sapota + Field crop as compared to other treatments. Hence, the trees in association with annuals could control runoff, improve soil quality, increase productivity and income of the farmers.

KEY WORDS : Nutrient dynamics, Litter fall, Sustainability, Agroforestry systems

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