Citation: Biswas, H. and Narayan, D. (2014) Performance of aonla based agri-horticulture land use system under integrated nutrient management in Bundelkhand region. *Journal of Soil and Water Conservation* **13**(4): 378-381.

Performance of aonla based agri-horticulture land use system under integrated nutrient management in Bundelkhand Region

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ABSTRACT

A field experiment was conducted to evaluate an aonla based agri-horticulture land use system for red soils with low organic carbon, under integrated nutrient management practices for rainfed Bundelkhand region during 2005-06 to 2007-08 at Central Soil and Water Conservation Research and Training Institute, Research Centre, Datia, Madhya Pradesh. Five treatment combinations viz. T_1 : Control (no nutrient supplement); T_2 : Recommended doses of NPK through chemical fertilizers; T_3 : T_2 + FYM @ 10 t ha^{-1}; T_4 : T_2 + NADEP manure @ 5 t ha^{-1} and T_5 : T_2 + vermi-compost @ 2 t ha^{-1}, were studied and statistically analyzed using RBD. Observations recorded during 3 years of study reveal that the integrated nutrient management has significantly improved physico-chemical properties the soil, plant height of aonla and yield of intercrops, in comparison to control. Highest plant height of aonla (1.44m), grain yield of green gram (560 kg ha^{-1}) and seed yield of Indian mustard (627 kg ha^{-1}) was recorded in treatment combination T_5 (recommended dose of NPK + Vermicompost @ 2 t ha^{-1}) hence found superior over rest of the treatments. Furthermore, highest buildup in organic carbon and available N, P and K in soil profile was also recorded in treatment T_5.