Integrated nutrient management in groundnut-field pea-summer groundnut cropping system

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ABSTRACT
A field experiment was carried out on nutrients denuded sandy loam soil during 2000-2001 and 2001-2002 at Regional Research Station Mainpuri, C.S. Azad University of Agriculture and Technology, Kanpur. The main objective was to enhance the productivity of crops in draught prone area with organic farming under groundnut-field pea -summer groundnut cropping system. Results displayed that the application of 15 kg N + 30 kg P2O5 + 45 kg K2O ha⁻¹ in association of 100 q FYM ha⁻¹, inoculated with vermicompost + vermiculture @ 5 q/100 q FYM gave significantly higher pod yield of rainy season groundnut by 28.14 q ha⁻¹ over control and conventional system of RDF. The residual effect of inoculated 100 q FYM ha⁻¹ in the integration of 25 kg N + 50 kg P2O5 ha⁻¹ registered significantly higher grain yield of field pea as 35.27 q ha⁻¹ over control and conventional system of RDF. Likewise, application of 15 kg N + 30 kg P2O5 + 45 kg K2O ha⁻¹ with remaining residual effect of 100 q FYM ha⁻¹ also significantly increased pod yield of summer groundnut by 22.42 q ha⁻¹ over control and conventional system of RDF. The growth and yield contributing characters noted in groundnut and field pea was concordant to the yield of both crops. The uptake of NPK was increased under different crops of cropping system, when fertilized with RDF in association of FYM. Analysis of soil after harvesting of different crops of the sequence showed a significant build up of NPK with the application of FYM. The demography of earthworms was higher in the soil receiving plenty of FYM, inoculated with vermicast and vermicast eggs.

Key words: Draught prone, Cropping system, Vermicompost, Vermiculture, Vermicast eggs.