

Effect of Organic Manures, Inorganic Fertilizers and their Integration on Yield and Nutrient Uptake by Maize-Spinach Cropping System

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ABSTRACT

A field experiment was conducted on a red sandy loam soil (*Alfisol*) during *rabi* (maize) and summer (spinach) seasons of 2009-2010 with a view to study the effect of organic manures, inorganic fertilizers and their integration on soil nutrient uptake and yield of maize-spinach cropping system. Among different combinations application of 75% RDF + 25% through vermicompost recorded significantly highest grain and stover yields (52.38, 60.77 q ha⁻¹) at harvest but was on par with 75% RDF + 25% through poultry manure and 75% RDF + 25% through FYM. The spinach crop grown during summer responded favourably to the residual and cumulative treatments and the highest fresh leaf yield (14.68 and 12.37 t ha⁻¹) was recorded in cumulative and residual treatments. Application of 75% RDF + 25% through VC, PM and FYM to the maize crop showed the highest uptake of N, P and K at vegetative, tasseling and at harvesting stages. The highest leaf yield and nutrient uptake of N, P and K by spinach at harvest was recorded in residual and cumulative treatments receiving 100% organic manures.

Key words : Cropping system, Fertilizers, Nitrogen, Maize, Organic manures, Spinach, Uptake.