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Full Length Research Paper

Effect of poultry manure on selected soil physical and chemical properties, growth, yield and nutrient status of tomato

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Abstract

In order to study the effect of poultry manure additions on nutrient availability, soil physical and chemical properties and yield of tomato, five levels of the manure, namely 0, 10, 25, 40 and 50 t ha⁻¹ were applied at Akure, Southwest Nigeria. The soil at the two experimental sites were slightly acidic, low in organic matter, N, P, and Ca. Poultry manure increased soil organic matter, N and P. Soil bulk density were reduced and moisture content increased with levels of manure. Manure applications increased leaf N, P, K, Ca and Mg concentrations of tomato, plant height, number of branches, root length, number and weight of fruits. The 25 t ha⁻¹ poultry manure gave highest leaf P, K, Ca and Mg and yield relative to control. The 10, 25, 40 and 50 t ha⁻¹ manure levels increased average fruit weight by 58, 102, 37 and 31% respectively.

Key words: Poultry manure, nutrient availability, soil physical properties, soil chemical properties, tomato yield.

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