

## **Poultry Manure Effect on Growth and Yield of Maize**

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### **Abstract**

The effect of poultry manure application on maize (*Zea mays*) growth and yields was studied on a Ferric Acrisol in the semi-deciduous rain forest zone of Ghana. Eight treatments of 0, 2, 4, 6, 8 tons of poultry manure (pm) per hectare, 60-40-40 kg NPK/ha, 2 × 2 t pm/ha and 2 t pm + 30-20-20 kg NPK/ha were used in a randomized complete block design (RCBD) with five replications. The study showed that poultry manure is a valuable fertilizer and can serve as a suitable alternative to chemical fertilizer in the forest zone of Ghana. Poultry manure treatments produced higher values for height, leaf area index and biomass. The 4 t pm/ha rate produced maize grain yield of 2.07 t/ha which was statistically not different from that of the chemical fertilizer rate (2.29 t/ha) and 6 t pm/ha (2.60 t/ha), while the 6 t pm/ha was not statistically different from the 8 t pm/ha rate. Split application of 4 t pm/ha (i.e. 2 × 2 t pm/ha) and 2 t pm/ha + 30-20-20 kg NPK/ha gave similar biomass and grain yields as the 4 t pm/ha. Poultry manure application registered over 53% increases of N levels in the soil, from 0.09% to 0.14%. Exchangeable cations increased with manure application. The study recommends an application rate of 4 t pm/ha for maize on this type of soil in this agro-ecology.