RESEARCH PAPER

Effect of coir pith amended poultry compost (CPAPC) on physiological parameters of maize (*Zea mays* L.)

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ABSTRACT

Composting of poultry droppings were done with industrial waste of coir pith from coconut coir industry. The nutrient content of coir pith amended poultry compost (CPAPC) content 45.7%, E.C (d sm⁻¹) 0.3, P^H 5.60 and C/N ratio 124. Field experiment was conducted to assess the agronomic effectiveness of CPAPC along with inorganic fertilizers at different levels on Maize crop. Eleven treatments were taken up with CPAPC @ 2.5 and 5 t ha⁻¹ with the addition of inorganic fertilizers at 100%, 75%, 50%, 25% and without. Similarly inorganic (100% NPK) was tried without organic manure. The results of field experiments *viz.*, available soil nutrients, uptake of nutrients, grain yield in maize were found to be the highest in T₃ where NPK 100 % and CPAPC at 5t ha⁻¹ were added. The treatments T₅ and T₇ (T₅ - 75% NPK + 5t ha⁻¹ CPAPC, T₇ - 50% NPK + 5 t ha⁻¹ CPAPC) closely followed the effectiveness of T₃. Since the agronomic effectiveness of T₇ was higher with increased benefit cost ratio than T₃. The reduction in nutrient concentration of N, P and K was recorded in the plants. Also similar pattern of concentration of micronutrients was exhibited. But the uptake of NPK and micronutrient showed steady increase. The biometric characters, yield parameters and grain concentrations were higher in T₃ followed by T₅ and T₇. The grain yield and Stover yield also exhibited similar trend. T₇ where 50% inorganic fertilizers were reduced and 5 t ha⁻¹ of CPAPC was added was found to be beneficial for yield and soil health. The benefit cost ratio of T₇ (50% NPK + 5 t ha⁻¹ CPAPC) was 4.03. Among the treatments tested T₇ - 50% NPK and 5 t ha⁻¹ of CPAPC was optimum for maize crop.

Key words : CPAPC, Coir pith amended poultry compose