Effect of some organic and chemical fertilizer combinations on the growth and the yield of *Oriza sativa*

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Soil fertility is very important for the productivity of *Oriza sativa*. As rice is a continuously cultivated crop throughout the year, a lot of nutrients are removed with the harvest, drainage, runoff water and leaching. Chemical fertilizers provide nutrients to meet the nutrients removed from the soil due to the above factors. Organic fertilizers supply nutrients and promote the chemical and biological activities and physical properties of the soil. Therefore, this investigation was carried out to evaluate the effect of organic fertilizers, chemical fertilizers and combination of both organic and chemical fertilizers on the growth and the yield paddy.

The experiment was carried out in Yala season with the variety of BG 94-1 and the experimental design was Randomized Complete Block Design with four replicates. There were five treatments. As basal fertilizers, poultry manure 2 kg (T1), cattle manure 2 kg (T2), cattle and poultry manure (1:1) 2 kg (T3), Urea 14 g, TSP 26 g and MOP 10 g (T4) and cattle and poultry manure (1:1) 2 kg (T5) were applied. For T1, T2, T3 and T4, Urea 20 g and 54 g and for T5, cattle manure 2 kg and poultry manure 2 kg were applied as first and second topdressings respectively after 4^{th} and 6^{th} weeks from the transplanting. The plot size of the experiment was 4 m^2. The amounts of chemical fertilizers were the recommended levels of the Department of Agriculture. T4 (Chemical fertilizers alone) and T5 (Organic fertilizers alone) were the controls. Plant height, number of tillers and grain yield were analyzed. SAS package was used in the analysis. Data were analyzed using ANOVA, and CATMOD was used for number of tillers, and the means were compared by DNMRT.

Cattle and poultry manure (1:1) 2 kg/ 4 m^2 (5000 kg/ ha) as basal mixture and chemical fertilizer, Urea 74 g/ 4 m^2 (185 kg/ ha) as top dressings provided rice plants with medium height, good tillering ability and a significantly ($p < 0.05$) higher yield 2.62 kg/ 4 m^2 (6550 kg/ ha) comparing with organic manure and chemical fertilizer alone.

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