ORGANIC MANURE COMBINATIONS ON GROWTH AND YIELD OF ORGANIC RICE

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A field experiment was conducted to study the effect of organic manure combinations on growth and yield of organic rice. The experiment was conducted using split plot design, with 3 replicates. Main plots were BG 352 (V_1) and Kaluheenati (V_2) and 7 input combinations were used in sub plots. They were T_0 – control (without fertilizer), T_1 – 5000 kg/ha compost + 625 kg/ha rice husk charcoal, T_2- 4000 kg/ha rice straw + 6000 kg/ha + 350 kg/ha ERP + 600 liters/ha gliricidia leaf extract (fortnightly), T_3 – half dose of T_2, T_4 – 5000 kg/ha phosphocompost ,T_5 – 5000 Kg/ha phosphocompost + 600 liters/ ha gliricidia leaf extract (fortnightly) + 625 kg/ha wood ash at panicle initiation stage, and T_6 – DOA recommended inorganic fertilizer.

Plant height, root length, root dry weight, number of leaves/ plant, and number of tillers/plant were significantly different among treatments at 50 % heading stage. T_6 in V_2 recorded the longest root length (8.61cm) and it is significantly different from the T_0, T_1, T_3, and T_5 ($Pr < 0.005$). Highest root weight (75.3 g/ m^2) was recorded by T_6 in V_2 was significantly different from T_0, T_4 and T_5. T_3 in V_2 showed the highest plant height (24.86 cm) which was significantly different only from T_4 ($Pr < 0.0001$). T_6 in V_1 recorded the highest plant height (39.87 cm). It was significantly different from T_0, T_3, T_4, and T_5 ($Pr < 0.0001$). T_5 in V_1 recorded the longest root length (7.66 cm). It was significantly from T_0, T_1, T3, and T_4 ($Pr < 0.005$). T_1 in V_1 resulted in the highest root dry weight (69.65g/ m^2) and was significantly different from T_4 ($Pr < 0.02$). T_6 in V_1 recorded the highest yield (1.46 t/ha), followed by T_1 (1.45 t/ha) and T_2 (1.43 t/ha) treatments. In V_2 the highest yield was recorded by T_6 (1.97t/ha) followed by T_2 (1.80t/ha), and T_3 (1.76t/ha). These values were not significantly different from each other. Therefore organic manures can be used to produce organic rice without any significant yield reduction over conventional rice production.

Key words: Organic inputs, Yield and growth parameters, BG 352, Kaluheenati, Organic rice