EFFECT OF INCORPORATION OF ORGANIC MATERIALS ON EXCHANGEABLE POTASSIUM CONTENT IN THE SOIL AND GROWTH AND YIELD OF RICE

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A pot experiment with rice plants (BG-94-1) was conducted in a green house to investigate the effect of incorporation of straw, ipil-ipil and gliricidia on potassium availability at two different soil moisture regimes (saturated, and flooded to a height of 5cm.) in a sandy loam soil without addition of mineral fertilizers. The organic materials were incorporated at the rate of 12 t/ha. Exchangeable potassium content in the soil, tiller number and shoot dry weight were determined at three week intervals.

Incorporation of organic materials increased the exchangeable potassium content in the soil significantly at all stages except at the first sampling. Contribution from straw and ipil-ipil was significantly higher than from gliricidia. The tiller number also significantly increased, with straw and ipil-ipil treatment showing a 40% and 60% increase respectively, when compared to the control. The shoot dry weight and grain yield also increased significantly, but there were no significant differences among the added organic materials.

The soil moisture regime, neither increased exchangeable potassium content in the soil nor the growth and yield parameters studied significantly, but showed higher values for saturated than flooded conditions.