B-62: Effect of organic residues as substitutes for nitrogen fertilizer on growth and yield of lowland rice

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A field experiment was carried out to study the effect of different sources and different rates of organic residues as substitutes for inorganic nitrogen fertilizer on growth and yield of lowland rice (variety BW 351) during the Yala season, 1993 (from 28th March to 2nd August) at the Research farm, Faculty of Agriculture, Mapalana.

Six treatment combinations of 2 levels sud 3 types of organic residues (rice straw, cowpea stover and Gliricidia leaves) and the control treatment of recommended level of basal nitrogen as urea in RCB design with 4 replicates were used in this experiment. Number of tillers per plant were counted at 2 weeks interval starting from 2 weeks after transplanting while grain yield and dry matter yield of rice straw were recorded at harvesting.

Non significant response to the different sources of organic residue and different levels of nitrogen was indicated on growth parameters (number of tillers per hill and dry matter yield of rice straw) and yield parameters (grain yield). The grain yield of rice obtained by the treatment of recommended dose of basal nitrogen as urea was similar to the treatments of organic residue with 50% reduced basal urea nitrogen applied and only organic residue without urea as basal nitrogen applied.

Therefore it is clear that the inorganic basal nitrogenous fertilizer for lowland rice can be substituted partially or completely by organic residues such as rice straw, cowpea stover and Gliricidia leaves etc. without any significant affects on paddy yield.