

A preliminary investigation on organic applications to promote paddy growth and suppress weeds

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This study is a preliminary investigation on the production of an organic application in a liquid form to promote growth of rice while suppressing weeds. Air dried *Lantana camara* L., *Croton lacciferus* L., *Gliricidia sepium* L. and cattle dung were mixed with water in 8 different combinations, fermented for three weeks and filtrates were used as treatments with distilled water as the control. To identify the growth promoting effect, treatments were applied to two week old rice seedlings of cultivars BG 300 and BG 358 grown in pots under green house conditions. Plant height and number of tillers were monitored weekly and dry weight, number of filled grains and total weight of grains were measured at harvest. Data were analysed by ANOVA using Minitab 14 and the mean differences were compared by Duncan's Multiple Range Test. In order to identify the weed suppressive ability of treatments, 50 seeds of *Echinochloa crusgali*, *Ischaemcum rugosum* and *Cyperus iriya* were separately exposed to treatments under laboratory conditions and the inhibition % of weed seed germination was determined. The highest nitrate content (48mg/l) was reported in T2, phosphate in T8 (170.8mg/l) and potassium in T1 (20.1mg/l). Treatments significantly increased growth and reproductive parameters in both rice cultivars compared to the control. Grain weight per unit biomass was higher in BG 300 than in BG 358. In BG 300, highest grain weight per unit biomass was observed in T5 and T8 while in BG 358 it was in T1 and T8. *Echinochloa crusgali* (Bajiri) was highly sensitive to treatments showing 86% - 100% inhibition in germination with full strength treatments. The T5 full strength filtrate also inhibited (72%) seed germination in *Ischaemcum rugosum* (Batadella). As the organic application exhibited manuring and herbicidal properties, further investigations are recommended.