EFFECTS OF PARTIALLY-BURNT PADDY HUSK ON GROWTH AND YIELD OF *Curcuma longa* L. (TURMERIC) CULTIVATION IN SRI LANKA

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Farmers use higher amount of potassium fertilizer in the form of Muriate of Potash (MOP) than other fertilizer for Turmeric cultivation because Turmeric plants show positive response to it. There are so many disadvantages of the usage of inorganic fertilizer, at the same time it increases the cost of production. Excessive use of chemical fertilizers and other agro-chemicals, which are the important inputs in modern farming, creates depletion in soil fertility and pollution in surface water bodies. The combined use of organic and inorganic fertilizers in crop production has been widely recognized as a way of increasing yield and improving productivity of soil. In Sri Lanka, paddy husk is available in sufficient quantities as by products from paddy industry at relatively low cost, paddy husk is converted into partially-burnt paddy husk by controlled burning. Therefore, this experiment was conducted at the Intercropping and Betel Research Station, Narammala and designed to identify the optimum percentage of inorganic fertilizer and partially-burnt paddy husk (PBPH) for highest yield in Turmeric cultivation. One factor in RCBD with three replicates was used as the design with 7 treatments; T1 (Control with no fertilizer), T2 (100% MOP= 20 g/m^2), T3 (75% MOP= 15 g/m^2 and 25% PBPH= 230 g/m^2), T4 (50% MOP= 10 g/m^2 and 50% PBPH= 450 g/m^2), T5 (25% MOP= 5 g/m^2 and 75% PBPH= 680 g/m^2), T6 (100% PBPH= 900 g/m^2) and T7 (100% MOP= 20 g/m^2 and 50% PBPH= 450 g/m^2). All data were subjected to Analysis of Variance (ANOVA) using SAS software package. Results revealed that T7 was significantly different from other treatments having highest plant height, number of leaves, stem diameter, number of rhizome fingers, fresh weight and rhizome and dry weight of rhizome. Therefore, farmers could use the freely available paddy husk in the farm field with muriate of potash to get highest yield than using it alone. Partially-burnt paddy husk has other advantages such as potassium contribution, enhanced moisture content and assist the turmeric plants to withstand the drought conditions.

Keywords: Turmeric, partially-burnt paddy husk, potassium, yield

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