RICE STRAW MULCH ON GROWTH AND YIELD OF DIRECT SEEDED RICE (*Oryza sativa* L.) CULTIVATION

R.C.C.S. Croos[1] and D.A.U.D. Devasinghe[1]

[1]*Department of Plant Sciences, Faculty of Agriculture, Rajarata University of Sri Lanka, Puliyankulama, Anuradhapura, Sri Lanka.*

An experiment was carried out in 2009-2010 'Maha' season at the field, Faculty of Agriculture, at Puliyankulama. Six treatments were used in Randomized Complete Block Design (RCBD) with three replicates namely, T_1 – Dry seeded rice (DSR) with no weeding, T_2-DSR with 4 t/ha paddy straw mulch, T_3-DSR with chemical weeding, T_4-Wet seeded rice (WSR) with no weeding, T5-WSR with 4 t/ha paddy straw mulch and T_6- WSR with chemical weeding. BG 352 rice variety was used. Under dry seeding un-germinated seeds were sown in moist soil while in wet seeding pre-germinated seeds were sown in puddled soil. Growth parameters of rice and number of weeds and weed dry weights were measured at different growth stages. The yield and yield components in rice were measured at the time of harvesting.

Results revealed, the yield in T_5, T_6 and T_3 were significantly higher than the other treatments, showing the values of 6.55 t/ha, 6.09 t/ha and 5.75 t/ha respectively. At 50 % heading in rice plant, the highest plant height was recorded in T_5 treatment (47.76 cm), the highest total root length per plant was recorded in T_4 (319.4 cm), the highest root dry weight was recorded in T_6 (99.2 g/m^2) and the highest shoot dry weight was recorded in T_2 (795.47 g/m^2). The Highest total weed dry weight was recorded in T_1 (167.67 g/m^2) while minimum weed dry weights were in T_5, and T_6 (9.33, 3.67 g/m^2 respectively). Thus, the results indicated the WSR with rice straw mulch and DSR with chemical weeding could be practiced as WSR with chemical weeding which is the normal practice in rice farming of Sri Lanka.

Key words: Rice straw mulch, Dry seeded rice, Wet seeded rice, Weeds.