

Weed Management in Maize Systems in New Alluvial Zone of West Bengal

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Abstract—A field experiment was conducted to evaluate the potions of best weed management Practices in maize-wheat cropping system during kharif season, 2015 at Regional Research Station, Gayespur, Bidhan Chandra Krishi Viswavidalaya, Nadia, West Bengal. The soil was silty clay loam in texture having pH 7.32, organic carbon 0.53% , available N 145.28 kg/ha, available P 28.82 kg/ha and available K 282.24 kg/ha. The experiment was laid down in RBD design with three replication and ten (10) weed management practices. The treatment were T_1 : Control (weedy check), T_2 : Weed free, T_3 : Atrazine @ 1.5 kg/ha pre-emergence, T_4 : Atrazine (750 g /ha) + Pendemathalin (750 ml/ha) pre-emergence , T_5 : Atrazine (750 g/ha) + 2,4-D Amine (500 g/ha) at 25 DAS as Post-emergence , T_6 : Halosulfuron 60 g/ha at 25 DAS , T_7 : Atrazine @ 1.5 kg/ha pre-emergence fb Halosulfuron 60 g/ha 25 DAS , T_8 : Tembotrione (Laudis) 120 g/ha Post-emergence at 25 DAS, T_9 : Pendemathalin (1000 ml/ha) pre-emergence fb Atrazine (750 g/ha) + 2,4-D Amine (500 g/ha) at 25 DAS as Post-emergence and T_{10} : Atrazine @ 1.5 kg/ha pre-emergence fb Tembotrione (Laudis) 120 g/ha Post-emergence at 25 DAS. In maize field, lowest no. of weeds per m² and weed dry weight was observed in T_{10} treatment which was remained at par with T_9 treatment. Highest grain yield (4135 kg/ ha), cob yield (5138 kg/ha), Cobs/ha (68.4 thousand) were recorded in weed free Treatment (T_2) which was remained at par with T_{10} treatment. Significantly highest net returns (Rs. 22,385/ha) and B: C ratio (1.92) was obtained in T_9 treatment. The highest system productivity as maize equivalent yield (7609.2 kg/ha) was obtained in weed free plot which was remained at par with T_9 and T_{10} treatment. The results indicate that two best weed management practices were T_{10} treatment i.e use of Atrazine @ 1.5 kg/ha pre-emergence fb Tembotrione (Laudis) 120 g/ha post-emergence at 25 DAS and T_9 i.e use of Pendemathalin (1000 ml/ha) pre-emergence fb Atrazine (750 g/ha) + 2,4-D Amine (500 g/ha) at 25 DAS as Post-emergence in maize-wheat system in new alluvial zone during kharif season will not only increased productivity but also providing an option of economical weed management.

Keywords: Maize, Weed management, System productivity, Net return.