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RESEARCH ARTICLE :

Effect of different weed control methods on growth and yield of maize

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SUMMARY : A field experiment was carried out at the Agronomy Crop Research Farm SHUATS Allahabad, during *Kharif* season of 2015 to study the “Effect of different weed management practices (Chemical and Non-chemical) on growth and yield of maize”. The experiment comprised eleven treatments, viz., weed free, 2 hand weeding, Paddy straw mulching, black polythene mulching, Atrazine @ 0.75 kg ha⁻¹, Atrazine @ 1.0 kg ha⁻¹, Atrazine @ 1.50 kg ha⁻¹, Atrazine @ 0.75 kg ha⁻¹ + hand weeding, Atrazine @ 1.0 kg ha⁻¹ + hand weeding, Atrazine @ 1.50 kg ha⁻¹ + hand weeding and un weeded plot. Significantly lower density and dry weight of weeds per m² was recorded with Paddy straw mulching and Black polythene mulching (61.00g) compared to other weed management treatments. However, they were at par with Application of Atrazine @ 1.0 kg ha⁻¹ + one hand weeding at 45DAS (75.00 g) and significantly lower weed dry weight per m² was recorded in Paddy straw mulching (20.70g) compared to rest of the treatments. Pre-emergence application of Atrazine @ 1.0 kg ha⁻¹ + one hand weeding at 45 DAS was recorded significantly higher 1000 seed weight (203.48g) and grain yield (8.79 t ha⁻¹) over rest of the weed control treatments. Atrazine @ 1.0 kg ha⁻¹ + one hand weeding at 45 DAS recorded higher net returns (Rs.91700ha⁻¹) and B:C ratio (3.40) over other treatments and it was on par with the Paddy straw mulching and black polythene mulching treatment. These weed control methods significantly controlled weeds and enhanced yield and yield components of maize during the study years. The economic analysis of these weed control methods also showed better performance of application of Atrazine@ 1.0 kg ha⁻¹ + hand weeding at 45 DAS as compared to rest of the treatments.

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