

## WEED DYNAMICS AND PRODUCTIVITY OF MAIZE (*ZEA MAYS* L.) UNDER PRE AND POST EMERGENCE APPLICATION OF HERBICIDE

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Received-04.07.2019, Revised-23.07.2019

**Abstract:** A field experiment was carried out at Ambikapur, during the *kharif* season of 2017-18 to work out effect of new herbicide molecule along with combinations of already tested herbicides in sequential application for weed management in maize. The field experiment was laid out in randomized block design with 11 weed management practices (alone and in combinations of atrazine, pendimethalin, halosulfuron, tembotrione, 2, 4-D, hand weeding and mechanical weeding) and replicated thrice. Pendimethalin (1000 ml ha<sup>-1</sup>) PE fb Atrazine (750 g ha<sup>-1</sup>) + 2,4-D Amine 0.4 kg ha<sup>-1</sup> at 25 DAS as PoE provided significant weed management during the critical period of crop-weed competition. The treatment also recorded the lowest total weed density and dry weight with higher weed control efficiency at 50<sup>th</sup> day of crop growth and contributed highest yield attributes *viz.*, cob length, cob girth, number of kernel rows cob<sup>-1</sup>, number of kernels row<sup>-1</sup>, 100 seed weight and kernel yield (5.98 t ha<sup>-1</sup>) which was found statistically at par with Atrazine 1.5 kgha PE fb Tembotrione 120 g ha PoE at 25 DAS (5.82 t ha<sup>-1</sup>) and mechanical weeding 20 and 45 DAS (5.53 t ha<sup>-1</sup>). Although hand weeding twice at 15 and 40 DAS is the most effective treatment as compare to herbicidal treatments. Highest net returns (Rs. 50297.65 ha<sup>-1</sup>) and B: C ratio (1.57) was recorded under by Atrazine 1.5 kgha PE fb Tembotrione 120 g ha PoE at 25 DAS which was found statistically at par with pendimethalin (1000 ml ha<sup>-1</sup>) PE fb Atrazine (750 gm ha<sup>-1</sup>) + 2,4-D Amine 0.4 kg ha<sup>-1</sup> at 25 DAS as PoE in terms of net return (Rs. 50064.04 ha<sup>-1</sup>) and B: C ratio (1.47).

**Keywords:** Maize, Weed management, Sequential application of herbicide

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