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Effect of herbicides and row spacing on weed dynamics and productivity of bread wheat (*Triticum aestivum* L.)

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ABSTRACT : Application of herbicides caused significant reduction in weed density and weed dry matter. The maximum reduction in weed density and weed dry matter was recorded in the plots treated with metribuzin followed by isoproturon and sulfosulfuron at 45 DAS and at harvest. Herbicidal treatments significantly increased number of tillers 45 DAS and plant height at 90 DAS and at harvest. The dry matter accumulation by crop at all the growth stages was significantly higher under isoproturon which was closely followed by sulfosulfuron. The maximum value of effective tillers, ear length, number of grains ear⁻¹ and test weight were observed with isoproturon followed by sulfosulfuron. Consequently, isoproturon produced significantly higher grain (5.72 t ha⁻¹) and biological yield (12.64 t ha⁻¹) and also net return (83753 Rs. ha⁻¹) compared to other treatments. The effect of row spacing was significant on density and dry matter of weeds at 45 DAS and at harvest. The minimum density of weeds was observed under row spacing of 17.5 cm which was closely followed by 20.0 cm and both these had significantly lower than 22.5 cm in this respect. Row spacings did not have significant impact on plant height. The maximum number of effective tillers was recorded under 20.0 cm whereas dry matter accumulation was under 22.5 cm row spacing. Sowing at 17.5 cm row spacing produced significantly higher grain (4.94 t ha⁻¹) and biological yield (11.94 t ha⁻¹) also net return (71314 Rs. ha⁻¹) compared to other row spacing.

KEY WORDS : Bread wheat, Metribuzin, Isoproturon, Sulfosulfuron, Row spacing, Herbicides, Grain yield

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