



# Effect of Chemical Weed Control on Weed Intensity in Summer Sesamum (*Sesamum indicum* L.) under Irrigated Conditions

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## ABSTRACT

An experiment was conducted at Bagusala farm, M.S. Swaminathan School of Agriculture, CUTM, Paralakhemundi, Odisha to find out the effectiveness of pre and post emergence herbicide for control of weeds in summer sesamum under irrigated conditions. Two hand weedings resulted in lower number of weeds as compared to application of herbicides Pendimethalin @ 750g ai.ha<sup>-1</sup> at 3 DAS, Pendimethalin @ 500g ai.ha<sup>-1</sup> at 3 DAS, Oxadiargyl 80WP @ 60g ai.ha<sup>-1</sup> at 3 DAS, Oxadiargyl 80WP @ 40g ai.ha<sup>-1</sup> at 3 DAS, Quizalofop @ 50g ai.ha<sup>-1</sup> at 20 DAS, Imazethapyr @ 60g ai.ha<sup>-1</sup> at 20 DAS, pendimethalin @ 500 ai.ha<sup>-1</sup> at 3 DAS + Quizalofop @ 50g ai.ha<sup>-1</sup> at 20 DAS, pendimethalin @ 500g ai.ha<sup>-1</sup> at 3 DAS + Imazethapyr @ 60g ai.ha<sup>-1</sup> at 20 DAS, Oxadiargyl @ 40g ai.ha<sup>-1</sup> at 3 DAS + Quizalofop @ 50g ai.ha<sup>-1</sup> at 20 DAS, Oxadiargyl @ 40g ai.ha<sup>-1</sup> at 3 DAS + Imazethapyr @ 60g ai.ha<sup>-1</sup> at 20 DAS. The weed number observed in all chemical weed control treatments was significantly lower than unweeded control. Application of herbicides was found to be effective in reduction of weed population in summer sesamum under irrigated conditions.

**Keywords:** Chemical weed control, Weed intensity, Sesamum, Summer season

In India, Sesamum (*Sesamum indicum* L.) occupies an area of 19.42 lakh ha with a production of 0.58 million tons and productivity of 303 Kg ha<sup>-1</sup>. This accounts respectively 6.1 and 2.8 percent of area and production of oil seeds in India (Anonymous, 2017). In Odisha, sesamum is cultivated in an area of 260.62 thousand ha (33.8 % of the total oil seed area of Odisha) and it is cultivated in all districts of the state during *kharif* (June and August), pre *Rabi* (September and October) and summer under irrigated conditions (January and March). The area under *kharif* is 196.8 thousand ha and 63.82 thousand ha and during *rabi* summer. The summer yields are higher and the crop is cultivated under irrigated conditions.

The irrigated sesamum crop suffers due to weeds

and the conventional method of hand weeding is effective. However, due to high wages and non availability of labour for weeding, the use of chemicals for weed control will be effective and economical. It was reported that there will be yield reduction of 74% and 35 to 70% (Balyan *et al.* 1993) and 30% (Babikar *et al.* 2014) due to weeds in sesamum. They reported that the initial period of crop weed competition is upto 50 days after sowing (Balyan *et al.* 1993) and between 2 to 3 weeks and

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