

## Weed Management in Primary Nursery of Sisal

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### ABSTRACT

A field experiment was conducted at Sisal Research Station, Bamra, Sambalpur, Orissa in 2009 to study the effects of different weed management methods on the weeds in primary nursery of Sisal (*Agave sisalana*). Pre-emergence herbicide, Trifluralin (0.75 kg a.i./ha) was applied in the soil as pre-plant soil incorporation 3 days before planting (DBP) of sisal bulbils; whereas, other pre-emergence herbicides, S-Metolachlor (0.50 kg a.i./ha) and Pretilachlor (0.05 kg a.i./ha) were applied 1 DBP. Quizalofop ethyl (0.050 kg a.i./ha) was applied two times at 3 and 5 WAP. The 1<sup>st</sup> and the 2<sup>nd</sup> hand weeding were done at 3 and 5 weeks after planting (WAP). Observations recorded at 2 WAP showed that the total weed dry weight was the lowest in S-Metolachlor (3.22 g/m<sup>2</sup>) treatment followed by Pretilachlor (12.2 g/m<sup>2</sup>) and Trifluralin (46.25 g/m<sup>2</sup>). Similarly, at 2 WAP, the highest weed control efficiency (WCE) was recorded with S-Metolachlor (90.12%), followed by Pretilachlor (62.5%) and Trifluralin (46.25%). At 5 WAP, the lowest weed dry weight was recorded with hand weeding (5.35 to 8.43 g/m<sup>2</sup>), followed by S-Metolachlor (9.86 g/m<sup>2</sup>). The WCE was also followed the same trend and the highest WCE was 89-93% in case of hand weeding followed by S-Metolachlor (87.13%). However, at 7 WAP, only two hand weeding proved effective which produced the lowest weed dry weight (7.43 g/m<sup>2</sup>), followed by one hand weeding (62.01 g/m<sup>2</sup>) and S-Metolachlor (64.59 g/m<sup>2</sup>). Likewise, the WCE was the highest (92.34%) in two hand weeding treatment. Quizalofop ethyl controlled the grasses (98%) which in turn encouraged the growth of sedge weeds (2.33 times). Sisal leaf waste could not control the weeds, whereas, it supported weed growth might be due to its benefit as mulching material conserving soil moisture. From the one year experiment it was clear that only hand weeding twice (3 and 5 WAP) was effective in controlling weeds in the primary nursery of sisal (92.34%) beyond 7 WAP. However, among the herbicides tested, S-Metolachlor was effective up to 5 WAP (87.13% WCE) after which it requires one hand weeding for managing the weeds in sisal nursery.

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