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## Evaluation of post-emergence herbicides on oil content and yield of Sesame [*Sesamum indicum* (L.)]

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### Abstract

A field experiment was carried out at the Research Farm, Department of Agronomy, College of Agriculture, RVSKVV, Gwalior (M.P.) during *kharif* 2013. Treatment Two hand weedings at 20 and 40 DAS recorded significantly higher oil content, followed by PoE application of treatment Propaquizafop 10% EC @ 50 g a.i./ha PoE. All the weed control treatments significantly influenced the grain yield and oil yield of sesame over weedy check/control. Treatment Two hand weedings at 20 and 40 DAS gave highest grain yield and oil yield followed by treatment Propaquizafop 10% EC @ 50 g a.i./ha PoE.

**Keywords:** Sesame, Herbicides, Oil content, B:C Ratio.

### 1. Introduction

Sesame [*Sesamum indicum* (L.)] popularly known as Til, Tilli, Gingelly etc. is important oilseed crop and belongs to the family *Pedaliaceae*. India ranks second both in area and production of sesame in the world. The area under the crop in India is about 1901 thousand hectares and total production is 810 thousand tonnes [Anonymous (2011-12)]<sup>[1]</sup>. In M.P. total cultivated area and production of sesame are 295 thousand hectares and 155 thousand tonnes; respectively. Average yield in India and Madhya Pradesh is 426 and 525 kg/ha, respectively [C. L. R. S. (2011-12)]<sup>[2]</sup>. The competitiveness of weeds on crop for nutrients, water, light and space is responsible for poor yield of sesame. Though the conventional methods of weed control viz., hand weedings, hand hoeing etc. are very much effective but due to high wages and non-availability of labourers during the critical weeding season (15-30 DAS) and incessant protracted rains, use of herbicides and their combination with cultural practices could be more time saving, economical and efficient to check early crop-weed competition.

### 2. Methods and Material

The present experiment was conducted at the Research Farm, College of Agriculture, Gwalior during the *kharif* season of 2013-2014 under the edaphic and climatic conditions of Gwalior (M.P.). The soil of the experimental field was sandy clay loam texture. The experiment was conducted in randomized block design with 3 replications and 7 treatments. The sesame crop variety TKG-22 was sown on 01-07-2013 and was grown with all recommended practices except weed control measures which were applied as per treatments undertaken for investigation. The crop was harvested on 18-10-2013, manually. The nutrients were applied at the rate of 60 kg N, 40 kg P<sub>2</sub>O<sub>5</sub> and 20 kg K<sub>2</sub>O/ha.

### 3. Results and Discussion

Grain yield and oil yield was found positively correlated with the number of capsule/plant and number of grains/capsule. The higher grain yield/ha was recorded under treatment two hand weedings at 20 and 40 DAS. The next effective treatment was Propaquizafop 10% EC @ 50 g a.i./ha PoE. The superiority of these treatments over control/weedy check in increasing yield had also been corroborating the findings of Shete *et al.* (2008)<sup>[4]</sup>. The oil content in grain did not differ significantly among various weed control treatments. However, it varied from 44.00 to 46.22 per cent but the oil yield was significantly influenced by various weed control treatments. All the weed control treatments produced significantly higher oil yield over control/weedy check. The higher oil yield/ha (311.05 kg) was recorded

under treatment Two hand weedings at 20 and 40 DAS. The next effective treatment was Propaquizafop 10% EC @ 50 g a.i./ha PoE. All these weed control treatments resulted in 96.86 to 240.35 per cent increase in oil yield over control/weedy check. The unchecked weeds of control/weedy check plot reduced the oil yield by 70.62 per cent when compared to yield of treatment two hand weedings at 20 and 40 DAS. The lower oil yield/ha (91.39 kg) was recorded under control/weedy check. Such findings were also reported by Patel *et al.* (2011) [3].

#### 4. Economics

The highest B:C ratio of was found under treatment Two hand weedings at 20 and 40 DAS followed by treatment Propaquizafop 10% EC @ 50 g a.i./ha. Under all weed control treatments B:C ratio were found low due to abnormal weather conditions in crop growth and maturity period. Such findings confirmed by the result of Vijayalaxmi *et al.* (2012) [5].

**Table 1:** Effect of weed control practices on number of capsules/plant, number of grains/capsule oil content, oil yield, grain yield and B:C Ratio of Sesame

Treatment	Number of capsules/plant	Number of grains /capsule	Oil content (%)	Oil yield (kg/ha)	Grain yield (kg/ha)	B:C Ratio
T <sub>1</sub> -Propaquizafop 10% EC (PoE) @ 50 g a.i./ha	24.20	34.53	45.67	235.44	515.83	2.76
T <sub>2</sub> -Propaquizafop 10% EC (PoE) @ 62.5 g a.i./ha	22.07	33.00	44.78	195.97	437.50	2.32
T <sub>3</sub> -Propaquizafop 10% EC (PoE) @ 100 g a.i./ha	21.47	32.73	44.33	185.10	416.94	2.14
T <sub>4</sub> -Quizalofop-p-ethyl 5% EC (PoE) @ 50 g a.i./ha	23.53	34.07	45.33	227.25	501.39	2.61
T <sub>5</sub> -Fenoxaprop-p-ethyl 9% EC (PoE) @ 100 g a.i./ha	21.07	32.60	44.00	179.91	409.44	2.10
T <sub>6</sub> -Two hand weedings at 20 and 40 DAS	26.87	38.07	46.22	311.05	673.61	2.81
T <sub>7</sub> -Control/Weedy check	16.93	24.93	44.00	91.39	207.78	1.21
S.E.(m)±	0.44	0.31	0.97	6.62	13.53	-
C.D. (P=0.05)	1.35	0.95	NS	20.39	41.68	-

#### 5. Conclusions

On the basis of above findings, it may be concluded that treatment Two hand weedings at 20 and 40 DAS, followed by treatment Propaquizafop 10% EC (PoE) @ 50 g a.i./ha are most effective and remunerative weed control practices for controlling the weeds and gave higher yield in sesame under sandy clay loam soils of Northern M.P..

#### 6. Reference

1. Anonymous Agricultural Statistics at a Glance, Ministry of Agriculture, GOI (New Delhi), 2011-12, 222.
2. C.L.R.S. Commissioner Land Record and Settlement, Gwalior, Madhya Pradesh, 2011-12, 87.
3. Patel BD, Khedkar HP, Patel RB, Sheta BT. Bioefficacy of some selective post-emergence herbicides in kharif soybean. *Research on Crops*. 2011; 12(2):405-408.
4. Shete BT, Patil HM, Ilhe SS. Effect of cultural practices and post-emergence herbicides against weed control in soybean. *Journal of Maharashtra Agricultural Universities*. 2008; 33(1):118-119.
5. Vijayalaxmi GS, Hiremath SM, Hosmath JA, Patil PL, Doddamani MB. Sequential application of pre and post emergence herbicides in soybean {*Glycine max(L.)*}. *Karnataka Journal of Agricultural Sciences*. 2012; 25(2):262-263.