

Herbicidal control of weeds in Indian mustard (*Brassica juncea*)

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In Indian mustard [*Brassica juncea* (L.) Czernj. & Cosson] weed menace is one of the important factors responsible for its decreased yield. Gill *et al.* (1984) found 30% reduction in seed yield of Indian mustard due to weed competition. Weed removal by manual method is costly and cumbersome. Therefore, present study was undertaken to find out appropriate source and level of herbicides for weed control in Indian mustard under such a situation.

Eight treatments comprising 3 herbicides, viz. isoproturon, oxadiazon and trifluralin each @ 0.5 and 0.75 kg/ha and farmers'

practice of hoeing and weeding (20 days after germination) and weedy check were tested in randomized block design with 3 replications. Herbicides were used as pre-emergence. The mustard variety 'BT 1' fertilized with 40, 20 and 20 kg N, P₂O₅ and K₂O/ha respectively was sown on 22 October 1988, maintaining 25-cm row spacing. The crop was thinned 10 days after germination to maintain plant-to-plant distance of 10 cm, weed control efficiency and weed index values were computed.

The weed flora of the experimental site included grasses, viz. *Cynodon dactylon*,

Table 1. Effect of various weed-control treatments on yield and yield attributes of Indian mustard

Treatment	Dry weight of weeds at harvest (tonnes/ha)	WCE	Branches/plant	Siliqua/plant	Seed yield (q/ha)	WI
Isoproturon 0.5 kg/ha	0.69	72.2	3.53	45.8	4.0	18.8
Isoproturon 0.75 kg/ha	1.09	56.0	3.13	43.4	3.0	40.4
Oxadiazon 0.5 kg/ha	0.95	61.7	3.20	44.4	3.5	30.9
Oxadiazon 0.75 kg/ha	1.06	57.3	3.13	43.0	3.8	44.7
Trifluralin 0.5 kg/ha	0.54	78.2	4.20	49.7	4.7	5.7
Trifluralin 0.6 kg/ha	0.81	67.3	3.43	44.7	3.9	23.0
Farmers' practice of 1 hoeing and weeding at 20 DAG	0.50	79.8	4.47	50.9	5.0	
Weedy check	2.48		2.60	29.4	2.1	58.0
CD (P = 0.05)	0.45		0.79	11.37	1.7	

WCE, Weed-control efficiency; WI, Weed index
DAG, Days after germination

Digitaria ciliaris, *Eleusine indica*, *Echinochloa colona*; sedge viz. *Cyperus rotundus* and broad-leaf weed, viz. *Cleome viscosa*, *Acanthospermum hispidum*, *Ageratum conyzoides*. *Cyperus rotundus* and *Cynodon dactylon* were resistant to all the herbicides. Maximum dry weight of 2.5 tonnes/ha at harvest was recorded in weedy plot. Farmers' practice of 1 hoeing coupled with manual weeding was 79.8% efficient in reducing the dry weight of weeds, whereas trifluralin, isoproturon and oxadiazon at their lower level (0.5 kg/ha) were respectively 78, 72 and 62% efficient in this regard.

Farmers' practice of 1 hoeing and weeding at 20 days after germination recorded the maximum seed yield of 502 kg/ha (Table 1). Isoproturon and oxadiazon at lower level and trifluralin at both levels remained at par

with the farmers' practice for pod yield. Yield increase in these treatments were due to favourable yield attributes, viz. number of branches and siliquae/plant. On the contrary the dose of isoproturon and oxadiazon showed phytotoxicity. This corroborates the finding of Mehra *et al.* (1989).

Unhindered growth of weeds during the crop season reduced the seed yield by 58%.

REFERENCES

- Gill, H.S., Sandu, K. S., Mehra, S. P. and Singh, Tarlok. 1984. Efficacy of some herbicides for control of weeds in Indian mustard. *Indian Journal of Weed Science* 16 (7) : 171-175.
- Mehra, S. P., Kanwar, R. S. and Bhatia, R. K. 1989. Herbicidal control of winter weeds in autumn cane + Indian mustard intercropping system. *Indian Journal of Weed Science* 21 (3, 4) : 37-41.

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Response of clusterbean (*Cyamopsis tetragonoloba*) varieties to sulphur and phosphorus

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Clusterbean [*Cyamopsis tetragonoloba* (L.) Taubert] is an important legume crop mainly grown in Rajasthan under rainfed conditions. It is tolerant to drought, and can be grown successfully in light soils having poor fertility and areas of erratic rainfall. The productivity of the crop in the Rajasthan

as well as in the country is very low, mainly due to use of traditional low-yielding varieties almost without fertilization. Sulphur plays an important role in synthesis of S containing amino acids, vitamins and helps synthesis of chlorophyll and nodule formation and growth of rhizobium. Hence an ex-