Indian Journal of Weed Science 40 (1&2) : 113-114, 2008 **Short comunication**

Efficacy of herbicides on weed infestation and seed yield of fenugreek

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Fenugreek is one of the most important spice crops of northern India. Heavy weed infestation and inadequate management of weeds are the major threats in its cultivation. Tripathi and Singh (1993) recorded 69% reduction in seed yield due to uncontrolled weeds throughout growing season of the crop. Herbicides may effectively be used for managing weeds in this crop. Keeping this in consideration, a field experiment consisting of 16 treatments (Table 1) was conducted in randomized block design with three replications during *rabi* season of 2005-2006 at Vegetable Research Centre of G.B.Pant University of Agriculture & Technology, Pantnagar, U.S. Nagar, Uttarakhand. Pendimethalin, isoproturon and metribuzin at their respective doses were sprayed as pre-emergence application just after sowing the crop. Fluchloralin was incorporated in to the soil before planting. Metribuzin at 0.15 kg/ha was subjected to one hand weeding at 40 days after sowing (DAS). Metribuzin at 0.35 kg/ha as pre-emergence spray was also compared with its post-emergence application. All the herbicides were applied as spray using 500 l of water per hectare.

Fenugreek variety "Pusa early bunching" was sown on November 16, 2005 with a seed rate of 20 kg/ha, 30 cm apart in rows. The crop was fertilized uniformly with 40 kg N, 60 kg P_2O_5/ha and 40 kg K_2O/ha through urea, diammonium phosphate and muriate of potosh, respectively. The crop was harvested on April 22, 2006.

Phalaris minor, Chenopodium album, Anagallis arvensis, Fumaria parviflora, Vicia sativa, Cyperus rotundus and *Medicago denticulata* were the major weeds observed in the crop. Some other notable weeds were *Physalis minima*, *Coronopus* spp. and *Melilotus* spp.

All the herbicides reduced weed density significantly as compared to weedy check at 30 days stage. Dry matter accumulation by the weeds at lower doses of isoproturon (0.50 and 0.75 kg/ha) and metribuzin (0.15 kg/ha) was at par to that of weedy check plots.

Table 1. Effect of different herbicides on seed yield of fenugreek and associated weeds

Treatment	Dose (kg/ha)	Stage of application (DAS)	Seed yield (kg/ha)	Weed density/m^2 at 30 DAS	Weed dry weight (kg/m^2) at 30 DAS
Fluchloralin	0.50	PPI	430	1.67 (48)	0.96 (8)
Fluchloralin	0.75	PPI	500	1.72 (53)	0.92 (7)
Fluchloralin	1.00	PPI	830	1.66 (52)	0.86 (6)
Pendimethalin	0.50	PE	900	1.69 (52)	0.63 (3)
Pendimethalin	0.75	PE	960	1.60 (41)	0.79 (5)
Pendimethalin	1.00	PE	1010	1.53 (33)	0.63 (3)
Isoproturon	0.50	PE	320	1.92 (87)	1.13 (12)
Isoproturon	0.75	PE	330	1.81 (68)	0.93 (8)
Isoproturon	1.00	PE	460	1.63 (48)	0.86 (6)
Metribuzin + Hand weeding	0.15	PE + 40	1360	1.46 (28)	1.14 (13)
Metribuzin	0.25	PE	460	1.46 (28)	1.09 (11)
Metribuzin	0.35	PE	550	1.53 (33)	1.10 (12)
Metribuzin	0.35	Po.E	220	1.58 (37)	0.79 (5)
Hand Weeding	-	20 & 40	1350	0.00 (0)	0.00 (0)
Weed-free	-	_	1530	0.00 (0)	0.00 (0)
Weedy	-	_	210	2.25 (179)	1.18 (14)
LSD (P=0.05)			141	0.23	0.09

DAS= Days after spraying

Uncontrolled growth of weeds on an average resulted 86.3% reduction in the seed yield of fenugreek when compared with weed-free treatment. Isoproturon at 0.5 and 0.75 kg/ha and post-emergence spray of metribuzin at 0.35 kg/ha gave the similer yield to that of weedy plots. Post-emergence application of metribuzin proved toxic to the crop. Weed-free treatment followed by hand weeding twice (20 & 40 DAS), metribuzin at 0.15 kg/ha + one hand weeding and pendimethalin at 1 kg/ha proved promising (Table 1) for fenugreek and increased seed yield significantly over control. Patel *et al.* (2008) also recorded highest seed yield (1649 kg/ha) under weed-free condition followed by pendimethalin 1 kg/ha (1511 kg/ha).

REFERENCES

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