

Response of Tomato to Napropamide during Rabi Season

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The earlier study in tomato crop showed that napropamide treated plots had weed population less upto 35 to 40 days from transplanting. In order to keep the plot weed-free for longer period, one hand weeding is essential after napropamide herbicide treatment. Hence, the present investigation was conducted during rabi season of 2000-01. The soil of the experimental field was sandy clay loam in texture with pH 8.00. The values of the F. C., PWP and bulk density were 27.95%, 13.41% and 1.42 g cm⁻³, respectively. The experiment was laid out in randomized block design replicated three times. The treatments consisted of 12 combinations of doses of napropamide and pendimethalin and one hand weeding at 45 days after transplanting (Table 1). The herbicides were applied as spray by Aspee Knapsac spray pump and immediately irrigation was applied for proper incorporation

of herbicides in soil. The tomato variety Dhanshree was transplanted on November 17, 2000. The major weeds present in the experimental field were : *Panicum isachmi* (4 m⁻²), *Cyperus rotundus* (6 m⁻²), *Cynodon dactylon* (3 m⁻²), *Eragrotis major* (2 m⁻²), *Euphorbia geniculata* (2 m⁻²), *Euphorbia hirta* (1 m⁻²), *Amaranthus viridis* (2 m⁻²) and *Logusca mollis* (3 m⁻²).

Maximum weed intensity was noticed with napropamide at 2.0 kg ha⁻¹ and it was on par with napropamide at 1.5 kg ha⁻¹. One hand weeding at 45 days after transplanting over application of herbicide recorded significant reduction in weed intensity when compared with herbicide alone (Table 1). These results are in conformity with those reported by Caussanel *et al.* (1990).

Significantly higher yield (58.70 t ha⁻¹) was obtained in hand weeded plots (3 weedings), the lowest yield (32.40 t ha⁻¹) in weedy. Herbicide

Table 1. Weed intensity (No. m⁻²) and tomato yield as influenced by different treatments

Treatment	Dose (kg ha ⁻¹)	Number of days after transplanting (DAT)						Yield (t ha ⁻¹)
		20	40	60	80	100	At harvest	
Unweeded	-	39	66	79	116	133	142	32.40
Hand weeding (3)	-	35	14	8	14	15	22	58.70
Napropamide	0.75	27	36	57	63	75	88	40.30
Napropamide+Hand weeding	0.75	25	36	18	28	33	36	42.20
Napropamide	1.00	21	28	49	56	68	79	44.60
Napropamide+Hand weeding	1.00	23	28	16	24	29	33	46.30
Napropamide	1.25	19	25	39	49	57	66	51.70
Napropamide+Hand weeding	1.25	17	26	13	17	22	28	53.40
Napropamide	1.50	14	22	43	46	55	62	52.90
Napropamide+Hand weeding	1.50	14	20	13	15	20	25	55.30
Napropamide	2.00	11	19	38	41	50	58	52.60
Napropamide+Hand weeding	2.00	11	20	12	11	16	20	56.20
Pendimethalin	1.50	18	26	40	49	60	68	48.70
Pendimethalin+Hand weeding	1.50	19	28	15	19	26	31	50.30
LSD (P=0.05)		3	4	4	5	5	6	1.58

Weeding=45 DAT.

application supplemented with one hand weeding at 45 days after transplanting recorded higher yield when compared with herbicide alone. Napropamide at 2.0 kg ha⁻¹ with one hand weeding produced significantly higher yield (56.20 t ha⁻¹) and on par with napropamide at 1.50 kg ha⁻¹ with one hand weeding at 45 DAT (55.30 t ha⁻¹). Similar results were reported by Morales *et al.* (1997).

REFERENCES

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