GAU Res. J. 1997. 22 (2) : 113-115

Effect of Spacing Planting Pattern and Weed Control in Mustard

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Mustard occupy prime position both in area and production but the productivity is very low in India as compared to West European Countries. Mustard is a C_3 plant subjected to photo-respiration. Photo-respiration can be minimized by adopting proper spacing and planting pattern ultimately increasing the crop yield. The losses due to weeds in mustard yield range from 10 to 70 per cent depending upon the composition and intensity of weed flora. The use of herbicides have revolutionised the conventional weed control practices.

A field experiment was conducted on medium black soil of Instructional Farm, Gujarat Agricultural University, Junagadh to study the response of mustard to spacing, planting pattern and weed management practices during *rabi* season of 1992-93. Twenty four treatments comprising of two levels of row spacing viz., 30 and 45 cm (as main plot) and three levels of planting pattern viz., Uniform sowing (No skipping), one skipped row after three sown rows (3:1) and one skipped row after two sown rows (2:3) and four levels of weed management practices viz., fluchloralin 1.0 kg ha^{-1} as pre-emergence, one hand weeding at 30 days after sowing, fluchloralin 1.0 kg ha^{-1} as pre-emergence + one hand weeding at 30 days after sowing and unweeded check (as sub plot) were tried in split plot design with three replications.

The results revealed that narrow row spacing (30 cm) significantly recorded higher yield of seed, stover and oil by 19.88, 21.77 and 20.03 per cent respectively as compared to wider row spacing (45 cm). The results obtained are in close proximity of those reported by Chavan *et al.* (1989) in mustard. Uniform sowing (no skipping) recorded significantly higher seed, stover and oil yield by 34.16, 28.64 and 34.33 per cent, respectively as compared to one skipped row after three sown rows (3:1), whereas 14.96, 12.62 and 15.08 per cent, respectively when compared to one skipped row after two sown rows (2:1). Similar results were also observed by Saini and Gupta (1982) who reported that skip row planting pattern of toria produced the lowest seed yield as compared to solid palnting. Significantly the highest seed, stover and oil yield were observed with fluchloralin 1 kg ha^{-1} as pre-emergence + one hand weeding at 30 days after sowing.

TABLE 1

Seed, stover and oil yield of mustard (kg ha^{-1}) as influenced by spacing, planting pattern and weed management practices.

Treatment	*Yield kg ha^{-1}*			*Net realization Rs. ha^{-1}*
	Seed	*Stover*	*Oil*	
Spacing				
S_1 — 30 cm	2008	5364	725	7307
S_2 — 45 cm	1675	4405	604	5270
S. Em. ±	48	146	16	—
C. D. at 5%	290	887	98	—
C.V. %	15.51	17.90	14.58	—
Planting pattern				
P_1 Uniform sowing	2113	5498	763	7677
P_2 One skipped row after three sown rows	1575	4274	568	4864
P_3 One skipped row after two sown rows	1838	4882	663	6332
S. Em. ±	51	134	18	—
C. D. at 5%	145	383	52	—
C. V. %	13.56	13.46	13.42	—
Weed management practices				
W_1 Fluchloralin 1 kg ha^{-1}	2000	5200	722	7266
W_2 One hand weeding at 30 days after sowing	1650	4472	595	5101
W_3 (W_1 + W_2)	2350	6044	849	8678
W_4 Unweeded check	1367	3821	493	4115
S. Em. ±	59	155	21	—
C.D. at 5%	145	442	60	—
C.V. %	13.56	13.46	13.42	—