

Yield of rocket-salad (*Eruca sativa*) as affected by date of seeding and row spacing

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ABSTRACT

An experiment was conducted during 1989–90 and 1990–91 at Bichpuri (Agra), to study the effect of seeding and row spacing on yield of rocket-salad or *taramira* (*Eruca sativa* Mill.) cultivars. Seeding on 25 September gave the highest seed yield (8.05 q/ha). Among the ancillary characters, plant height, number and weight of siliquae/plant, seed yield/plant and physiological maturity of crop were also significantly higher when the crop was raised on 25 September. Among the varieties, 'T 27' gave significantly higher yield than 'ITSA' and 'TMH 52'. However, row spacing did not show significant effect on various characters under study.

Rocket-salad or *taramira* (*Eruca sativa* Mill.) is especially suitable for areas with meagre or no irrigation facilities because of efficient root-system to extract moisture from lower soil horizons (Singh and Sharma, 1976). Usually, sowing is done during September–October, depending on the rains or conserved soil moisture. Due to lack of adequate knowledge about the sowing time, the farmers cannot reap the required yield of the crop. Therefore, the present investigation was undertaken to study the effect of seeding dates and row spacings on different varieties of *taramira*.

MATERIALS AND METHODS

The field experiment was conducted during the winter (*rabi*) seasons of 1989–90 and 1990–91 at Bichpuri, Agra. The soil of the experimental plot was sandy loam with low water-holding capacity, slightly alkaline

and low in organic carbon (0.36–0.405) and N content (190 kg/ha) and medium in P_2O_5 (26 kg/ha), whereas it was rich in potash (305 kg K_2O /ha). The treatments consisted of 4 dates of seeding (25 September, 10, 25 October and 9 November) and 3 row spacings (30, 35 and 40 cm), with 3 varieties ('T 27', 'ITSA' and 'TMH 52'). The experiment was laid out in split-plot design keeping seeding dates and row spacings in main plots and varieties in subplots and replicated thrice. A common dose of 30 kg N and 20 kg P_2O_5 /ha was drilled at the time of seeding. The total rainfall during the crop season (10 September–25 March) was 84.5 mm in the first year and 283 mm in the second year.

RESULTS AND DISCUSSION

Seeding date

Seeding dates had significant effect on

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Table 1. Growth, development characters, yield attributes and seed yield of *taramira* varieties as affected by seeding dates and row spacings (average of 2 years)

Treatment	Plant stand/ m	Plant height (cm)	Primary branches/ plant	Days to physiology maturity	Siliqueae/ plant	1,000-seed weight (g)	Seed yield/ plant (g)	Seed yield (q/ha)
<i>Seeding date</i>								
25 Sep	7.64	97.6	7.78	154.5	195.1	3.53	6.44	8.05
10 Oct	7.57	97.2	7.81	150.0	152.0	3.53	6.25	7.67
25 Oct	7.36	75.0	6.61	139.3	81.0	3.46	5.14	5.51
9 Nov	6.98	62.8	5.44	130.1	57.6	3.40	4.07	4.11
CD (P = 0.05)	0.22	0.6	0.26	1.0	18.5	0.05	0.11	0.24
<i>Row spacing (cm)</i>								
30	7.44	83.0	6.95	143.7	127.5	3.47	5.36	6.35
35	7.40	83.3	6.94	143.5	115.0	3.48	5.46	6.38
40	7.36	83.5	6.83	143.3	119.7	3.51	5.60	6.28
CD (P = 0.05)	NS	NS	NS	NS	NS	NS	NS	NS
<i>Variety</i>								
'T 27'	7.47	83.9	7.14	143.5	126.0	3.50	5.62	6.93
'ITSA'	7.40	83.1	6.89	142.2	121.8	3.48	5.43	6.22
'TMH 52'	7.35	82.5	6.68	144.7	116.2	3.46	5.38	5.88
CD (P = 0.05)	NS	0.4	0.18	0.3	9.0	0.03	0.9	0.21

NS, Not significant

seed yield (Table 1). The crop sown on 25 September gave the maximum seed yield, closely followed by that sown on 10 October (7.67 q/ha). The higher yield in early seeding (25 September) compared with either 10 October or later seedings may be mainly due to more survival of plants. The first 2 dates of seeding showed higher yield, which was also due to the fact that the crop utilized sufficient time for its growth under favourable climatic conditions compared with later seedings. The crop sown on 9 September showed 49% reduction in yield compared with that sown on 25 September. These results corroborate the findings of Rai and Kumar (1981). Siliquae/plant and 1,000-seed weight which ultimately constituted the seed yield/plant and seed yield/ha seems to have been affected by the growth period, which in turn was influenced by seeding time.

The crop sown on 25 September showed maximum plant height, days to physiological maturity, siliquae/plant, primary branches/plant and seed yield/plant, followed by that sown on 10 October (Table 1). The crop sown on 25 October and 9 November showed decreasing trend in these growth, development and yield-attributing characters. The reduction in these attributes was mainly due to the shorter growth period of the of the late seeding crop coupled with low temperature and less bright sunshine hours. The crop sown at early 2 dates

required maximum time for physiological maturity, suggesting that the longer crop-span contributes to maximum plant height, siliquae/plant, branches/plant and 1,000-seed weight, finally resulting an increased crop yield.

Row spacing

Row spacings did not show any significant effect on crop growth, development and the yield-contributing characters due to closeness in row-to-row distance.

Variety

The varieties showed significant difference in seed yield. 'T 27' gave significantly higher seed yield by 11.4 and 17.9% than 'ITSA' and 'TMH 52' respectively. Evidently, siliquae/plant and 1,000-seed weight attributed to some increase in seed yield of 'T 27' compared with 'ITSA' and 'TMH 52'. Similar results were reported by Maliwal *et al.* (1984).

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