

Short Communication

Evaluation of Garlic Cultivars in Semi-arid Plain of Rajasthan

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Garlic (*Allium sativum* L.) is an important spice and medicinal crop grown in India. It is also considered a cash crop due to its rich export potential. Although its importance in Indian economy is well realized, little work is done on its improvement. No information is available on the suitability of garlic cultivars in the semi-arid eastern plain (Zone III-A) of

of 1998 and 1999, at SKN College of Agriculture, Jobner. The plots were 2 x 2 m in size with plant spacing of 10 x 7.5 cm. Soil of the experimental site was sandy loam in texture, slightly alkaline in reaction, poor in organic carbon (0.17%) with low available N (130 kg ha⁻¹), P (15.2 kg ha⁻¹), S (12.60 ppm) and medium K (140 kg ha⁻¹). Full dose of fertilizers (NPK)

Table 1. Plant height, chlorophyll content, number of leaves, fresh weight of leaves, neck thickness of bulb and maturity period of different garlic cultivars (pooled mean of two years)

Cultivars	Plant height (cm)	Chlorophyll content of leaves (mg g ⁻¹)	Number of leaves plant ⁻¹	Fresh weight of leaves (g plant ⁻¹)	Neck thickness of bulb (cm)	Maturity period (days)
Yamuna Safed	47.71	0.961	9.09	22.51	0.91	158.68
Jajavar local	52.19	1.046	9.30	26.35	0.97	164.12
Mathani local	50.30	1.011	9.21	24.61	0.94	160.56
SEm±	0.221	0.004	0.130	0.055	0.004	0.289
CD 5%	0.624	0.012	NS	0.156	0.011	0.819

Rajasthan. Hence an attempt was made to evaluate suitable cultivars of garlic for this zone.

Three cultivars of garlic, viz., Jajavar local, Mathani local and Yamuna Safed were grown in four replications in randomized block design in rabi seasons

was applied @ 15:60:60 kg ha⁻¹ as basal dose, and other cultural and plant protection measures were followed. The observations were recorded on plant height, leaf number and weight and weight of leaves per plant, chlorophyll content, maturity period, neck thickness, diameter and fresh weight of

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Table 2. Diameter of bulb, fresh weight of bulb, number of cloves, weight of 20 cloves, bulb yield and harvest index of different garlic cultivars (pooled mean of two years)

Cultivars	Diameter of bulb (cm)	Fresh weight of bulb (g)	Number of cloves bulb ⁻¹	Weight of 20 cloves (g)	Bulb yield q ha ⁻¹	Harvest index (%)
Yamuna Safed	3.76	29.31	29.81	22.68	105.68	63.27
Jajavar local	3.87	32.32	34.00	26.81	114.00	67.15
Mathani local	3.81	31.14	31.68	24.68	109.87	61.13
SEm±	0.018	0.076	0.111	0.138	0.0092	0.074
CD 5%	0.051	0.216	0.314	0.390	0.261	0.210

bulb, number of cloves bulb⁻¹, weight of 20 cloves, bulb yield ha⁻¹ and harvest index for statistically analysis (Panse and Sukhatme, 1985).

Significant varietal differences were recorded for all the characters, except for number of leaves, studied during both the years (Tables 1 and 2). The cultivar 'Jajavar local' showed maximum plant height, chlorophyll content of leaves, fresh weight of leaves plant⁻¹, neck thickness of bulb, diameter of bulb, fresh weight of bulb, number of cloves bulb⁻¹, weight of 20 cloves, bulb yield ha⁻¹ and harvest index. Cultivar Mathani local was next to cultivar Jajavar local in terms of plant height, chlorophyll content of leaves, fresh weight of leaves plant⁻¹, neck thickness of bulb, diameter of bulb, fresh weight of bulb, number of cloves bulb⁻¹, weight of 20 cloves and bulb yield ha⁻¹. All these characters were minimum in cultivar 'Yamuna Safed'. Cultivar, Yamuna Safed matured 6 to 7 days earlier than Jajavar local. The growth, yield attributes and yield ha⁻¹ of cultivar Jajavar local was exceptionally higher than all other cultivars. This might be due to difference in their genotypic potential and adaptability to soil and climate. Cultivar

Jajavar local was also reported as best under the variability studies in garlic (Agarwal, 1999). Such differential behavior in garlic cultivars has also been reported by Singh *et al.* (1988) and Pandey (1996). In general, the higher yield may be due to higher photosynthetic rates, longer leaf area duration (LAD) and continuous vegetative growth during reproductive phase. These results are also supported by Pandey *et al.* (1981) that biomass production is positively correlated with LAI, CGR and RGR.

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