

Short Communication

EVALUATION OF LENTIL GERMPLASM FROM NORTH WESTERN HIMALAYA

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Lentil (*Lens culinaris*) is considered to be one of the oldest food crops of mankind. The major lentil-growing countries of South-Asia are India, Nepal, Bangladesh, Pakistan and Myanmar. As a part of efforts to strengthen lentil breeding programme, the investigation under report was conducted to identify promising donors having consistently superior performance under North-Western Himalayan conditions.

A set of fifty lentil genotypes, comprising material collected from hills as well as from other agro ecological regions of the country, was evaluated in a randomized block design with three replications during the rabi seasons of 1991-92, 1992-93 and 1993-94. The data were recorded on (i) days to 50 per cent flowering, (ii) plant height (cm), (iii) number of pods per plant, (iv) days to maturity, and (v) grain yield (kg/ha). The data was subjected to pooled analysis of variance (ANOVA). The results of pooled ANOVA (Table 1) indicated that 'year' was a source of significant variation for all the characters except for the number of pods per plant. However, the genotype mean squares were significant for all the characters thereby indicating that the set of genotypes chosen had significant variation within it. The 'year \times genotype' interaction was significant only for the three characters viz., days to 50 per cent flowering, days to maturity and grain yield. This indicated that different years did cause differential effects on various genotypes with respect to these three characters.

Observations of such a phenomenon made 'instability of yield' as one of the important production constraints (Bahl *et al.*, 1993) in lentil. The analysis further revealed the presence of wide range of variability with respect to different characters (Table 1). Also top five highest yielding genotypes, on the basis of three years average, were identified and are listed in Table 2.

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Table 1. Pooled ANOVA for yield and its components in lentil over three years

	Days to 50% flowering	Plant height (cm)	No. of pods per plant	Days to maturity	Yield (kg/ha)
A. Mean squares					
Year	298.6**	54.1**	214.6	1652.4**	760143.1**
Genotype	241.4**	37.6**	922.9**	376.3**	432334.1**
Year × Genotype	29.4**	6.1	47.6	135.4**	89963.8**
Error	3.9	10.6	140.1	3.2	41305.5
B. Other parameters					
Mean	114.9	27.8	55.2	165.8	555.4
Standard error of mean	1.97	3.25	11.84	1.78	202.9
Critical difference at 5% level	3.16	5.21	18.9	2.86	324.85
Range	104 (PML 8803) to 128 (VL-4)	22.7 (VL 119) to 31.7 (DPL 05)	37 (301) to 85 (VL 115)	158 (VL 107) to 179 (T-36)	209 (NP 6565) to 1131 (VL-4)

Table 2. Performance of some promising genotypes evaluated during 1991-92 to 1993-94

Sl. No.	Days to 50% flowering	Plant height (cm)	No. of pods per plant	Days to maturity	Yield (kg/ha)
VL 103	125	28.0	71.4	179	966.2
VL 105	122	27.6	54.0	177	930.8
VL 108	121	24.3	49.9	176	909.7
VL 4	128	29.2	76.4	179	1131.4
VL 109	118	29.9	53.3	178	919.8

REFERENCE

- Bahl, P.N., S. Lal and B.M. Sharma. 1993. Lentil in South Asia. Proceedings of the Seminar on Lentils in South Asia, 11-15 March 1991, New Delhi, India, ICARDA, Aleppo, Syria.