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Note on the Effect of Sowing Dates on the Reaction of Twelve Lentil Varieties to Wilt Disease*

Lentil wilt is caused by *Fusarium oxysporum* f. sp. *lentis*. This disease is soil-borne in nature. The best method of controlling the soil-borne disease is the adoption of an approach of integrated disease control, i. e.. use of resistant varieties, adjustment in the date of sowing, etc. With this objective, screening of different lentil varieties in different dates of sowing was carried out and the results are presented.

This experiment was conducted in 1973—'74 *rabi* season, in a split-plot design with three replications. Five dates of sowing where the main-plot treatments and twelve varieties were the sub-plot treatments. The plot size was 5 × 3m. The wilt incidence was recorded up to pre-harvest stage.

Per cent wilt :

$$\text{Per cent seedling wilt} = \frac{\text{Total wilted plants within 45 days}}{\text{Total population}} \times 100$$

$$\text{Per cent advance state wilt} = \frac{\text{Total wilted plants after 45 days}}{\text{Total population—No. of plants wilted within 45 days}} \times 100$$

Both dates and varieties significantly affected the seedling and advance stage wilt (Table 1). The least seedling wilt was recorded in plantings of December 15th and it was followed by November 30th. In general the advance stage wilt was less. The lower percentage of advance stage wilt was observed in November 15th sowing. Among the varieties screened, the least seedling wilt was recorded in Pant 220, followed by Pant 234 and Pant 538. However, lower percentage of advance stage wilt was recorded in Pusa 4, UPL 175, Pant 209, Pant 220, Pant 538 and Pant 638.

The difference in the yields obtained from the various varieties tested was found to be statistically significant. Higher yields were recorded in Pant 406, Pant 638, Pant 538 and Pusa 4. On the other hand the different dates of sowing had no significant effect on the yields (Table 2).

The late sown varieties had less wilt than early sown ones. The low soil temperature in November 30th and December 15th period might have saved the lentil varieties from the wilt. These results agree with those reported by Myalova (1973) and Khare *et al.* (1972).

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TABLE 1. Reaction of lentil varieties to seedling and advance stage wilt in dates X varieties trial.

Varieties	Dates	Seedling wilt (%)						Advance stage wilt (%)					
		Oct. 15	Oct. 30	Nov. 15	Nov. 30	Dec. 15	Mean	Oct. 15	Oct. 30	Nov. 15	Nov. 30	Dec. 15	Mean
Pant 209		8.1	2.3	10.5	0.9	0.5	4.3	1.0	0.4	0.3	0.3	1.0	0.6
Pant 220		4.1	1.0	3.8	1.3	0.7	2.2	0.5	0.6	0.2	0.3	1.4	0.6
Pant 234		4.8	2.5	2.9	0.6	1.3	2.4	4.2	0.3	0.1	0.3	1.1	1.2
Pant 241		7.7	3.1	4.9	0.7	0.6	3.4	0.9	0.4	0.2	0.5	2.5	0.9
Pant 370		12.0	4.7	6.4	0.5	0.7	4.9	2.2	0.5	0.2	0.2	1.5	0.9
Pant 406		7.8	3.2	8.7	0.6	0.2	4.1	0.8	0.4	0.2	0.3	1.7	0.7
Pant 538		5.5	2.1	5.2	0.9	0.2	2.8	1.0	0.3	0.1	0.2	1.4	0.6
Pant 638		8.4	2.1	5.1	1.0	0.6	3.4	1.0	0.3	0.1	0.3	1.3	0.6
UPL 175		6.8	2.5	4.7	1.1	0.4	3.1	0.8	0.4	0.3	0.5	0.8	0.5
Pusa 4		12.0	4.1	3.8	0.5	1.3	4.3	1.0	0.3	0.2	0.2	0.9	0.5
L 9 12		14.4	4.0	2.7	0.9	0.9	4.6	1.3	0.4	0.2	0.7	1.4	0.8
T 36		12.2	3.1	4.9	1.1	1.2	4.5	0.8	1.2	0.3	0.7	3.4	1.3
Mean		8.7	2.8	5.3	0.8	0.7		1.3	0.5	0.2	0.4	1.5	
'F' test										N. S.			
C. D. (5%)				Significant Interaction a 1.9	b 7.9								

TABLE 2. Grain yield (q/ha) in dates X varietal trial.

Varieties	Dates					Mean
	Oct. 15	Oct. 30	Nov. 15	Nov. 30	Dec. 15	
Pant 209	24.1	30.9	27.1	14.4	15.2	22.2
Pant 220	24.1	20.4	26.0	19.7	16.9	21.2
Pant 234	16.9	23.3	29.2	17.4	10.6	19.4
Pant 241	24.6	28.8	27.5	19.5	15.2	23.1
Pant 370	16.9	26.5	28.4	19.3	10.6	20.3
Pant 406	31.7	33.0	30.9	21.2	17.8	26.9
Pant 538	27.5	29.2	25.4	19.0	19.0	24.0
Pant 638	30.5	28.4	33.2	23.8	17.6	26.3
UPL 176	18.2	23.7	25.8	16.6	12.3	19.3
Pusa 4	25.8	26.7	30.4	17.4	17.4	23.6
L 9 12	30.9	25.8	24.6	11.9	17.4	22.1
T 36	26.7	8.9	12.3	6.3	10.2	12.8
Mean	24.8	25.4	26.5	17.3	15.0	

	Dates	Varieties	Interactions (a)	Interactions (b)
'F' test	N. S.	Sig.	Sig.	Sig.
C. D. (5%)	..	3.5	5.2	10.0

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J. KANNAIYAN
Y. L. NENE

Department of Plant Pathology,
G. B. Pant Univ. of Agri. and Tech.,
Pantnagar, (Nainital).

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