

Study on row spacings for different varieties of linseed (*Linum usitatissimum* L.)

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SUMMARY

A field experiment was conducted to study the effect of 3 row spacings (20, 25, 30 cm) on three different varieties (Neelum, Garima, LCK 8657) of linseed for two years (2000-01 and 2001-2002) at Oilseeds Research Farm Kalyanpur, Kanpur. Effect of row spacing was not found significant on seed yield and plant stand per unit area. Among varieties, LCK 8657 has given significantly maximum yield followed by variety Neelum. Interaction was not found significant.

Key words : Linseed, Row spacings, Different varieties

Linseed is an important oilseed crop of India. Its oil forms the major raw material for surface coating industry. A sizeable portion of oil is also used for edible purposes. With a view to meet out the requirement of suitable genotypes for different conditions an intensive work on varietal improvement is under way. Different varieties vary in behavior and habit. Therefore, it was felt necessary to see the response of some different varieties to different row spacings which is one of the important cultivation factor.

MATERIALS AND METHODS

The present field experiment was conducted during *rabi* 2000-01 and 2001-02 at Oilseeds Research Farm Kalyanpur, C.S. Azad University of Agriculture and Technology, Kanpur (U.P.). The soil of the experiment field was loam with pH 7.4 having medium amount of organic carbon and available phosphorus. Available potash content of the soil was low. The treatments consisted of three levels row spacings (20, 25 and 30 cm) and three different varieties (Neelum, Garima and LCK 8657). Design adopted was split plot with row spacing in main plots and varieties in subplot. Replications used were three. A basal application of 30 kg N, 30 kg P₂O₅ and 30 kg K₂O per hectare was done uniformly to all the treatments. The top dressing of 30 kg N/ha was done after first irrigation. Crop was sown in rows behind plough on 15-10-2000 and 21-10-2001 by using the common seedrate 30 kg/ha. Crop was raised under irrigated conditions where two irrigations in each year were applied. Harvesting was done on 21-03-2001 and 05-04-2002 during two years of experimentation.

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RESULTS AND DISCUSSION

The effect of different treatments was evaluated on seed yield and some of the yield attributes. The data regarding all these characters have been summarized in Tables 1 and 2.

Effect of varieties:

The data given in Table 1 clearly indicate that different varieties affected the yield and plant stand both significantly during two years of study. Variety LCK 8657 out yielded both other varieties which were found at par with each other. Results remained similar during both years. On mean basis variety LCK 8657 yielded 10.6 and 6.5 per cent higher seed over Garima and Neelum varieties, respectively. As regards plant stand it was maintained maximum by Garima. However, variety Neelum also remained at par. In spite of poorest plant stand, the highest yield of variety LCK 8657 was mainly due to maximum number of capsules per plant and maximum number of seeds per capsule (Table 2). These two characters not only compensated the loss in plant stand but increase the total seed yield per unit area. Tomar and Mishra (1989) have also reported highest yield of linseed variety RLC-3 because of more number of capsules and more number of grains per capsule. Number of capsules and grains per capsule have been reported as inherited characters (Murty *et al.*, 1967).

Effect of row spacing:

Effect of row spacings was not found significant in any case. However, medium row spacing of 25 cm has given numerically highest yield. Though number of capsules per plant increased in wider row spacing but due to reduction in plant stand, it could not add in total yield. A row spacing of 20-30 cm have also been reported optimum for achieving high production of linseed by Gill

Table 1: Seed yield and plant stand under different treatments

Treatments	Seed yield (Kg/ha)			Plant stand (000/ha)		
	2000-01	2001-02	Mean	2000-01	2001-02	Mean
Varieties Neelum	2407	2386	2396	988	986	987
Garima	2318	2297	2308	1007	1003	1005
LCK 8657	2585	2519	2552	965	968	967
S.E. \pm	52	56	-	8	12	-
C.D. (P=0.05)	160	122	-	24	26	-
Row spacings (cm)	2333	2268	2301	1006	1001	1004
20						
25	2526	2510	2518	996	996	996
30	2452	2424	2438	959	960	960
S.E. \pm	80	84	-	15	20	-
C.D. (P=0.05)	N.S.	N.S.	-	N.S.	N.S.	-

Table 2 : Effect of row spacings and varieties on yield attributes of linseed

Treatments/ attributes	Varieties			Row spacings (cm)		
	Neelum	Garima	LCK 8657	20	25	30
No. of capsules/plant						
2000-01	27.17	26.30	29.43	24.47	28.67	29.77
2001-02	26.49	26.65	28.75	23.95	28.14	29.79
Mean	26.83	26.48	25.09	24.21	28.41	29.78
No. of seeds/ capsule						
2000-01	8.38	7.79	9.18	8.62	8.41	8.31
2001-02	8.27	8.01	9.08	8.70	8.32	8.34
Mean	8.33	7.90	9.13	8.66	8.37	8.33

(1987).

in all cases. It indicates that the varieties under test do not differ in the requirement of row spacing hence, may be grown at similar spacing.

Effect of interaction:

Interaction effect was also found to be non significant

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