

## **Effect of date of sowing on yield and disease intensity of *Alternaria* blight in linseed**

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### **ABSTRACT**

*Alternaria* blight of linseed caused by a fungal pathogen, *Alternaria lini* is an important disease. Investigations were made on the effect of sowing dates on disease intensity and yield of linseed crop. Highest disease intensity was recorded when crop was sown on 10<sup>th</sup> October and it gradually declined on later dates sown crop. Highest seed yield with less disease intensity was obtained when crop was sown on 30<sup>th</sup> October followed by 20<sup>th</sup> October.

**Key words :** *Alternaria lini*, *Linum usitatissimum*, Sowing dates.

**L**inseed (*Linum usitatissimum* L.) is an important *rabi* oilseed crop and a major source of oil and fibre. The average productivity of this crop is very low (about 3.0 q/ha), for which diseases are one of the major reasons. Among fungal diseases, *Alternaria* leaf /bud blight caused by *A. lini* Dey is a serious threat in Northern high humidity regions of the country causing 22.3% yield losses (Singh and Singh, 2004). Present study was undertaken to record the first appearance and progress of *Alternaria* blight in relation to different sowing dates and effect on disease intensity and yield.

Effect of sowing date plays a key role in the disease development and yield of the crops and the knowledge of this factor is imperative in working out a strategy for disease management. To avoid disease loss in the crop, it is to adjust the sowing date so that it escapes this factor conducive to disease development. So, the studies were carried out in relation to disease intensity and date of sowing on yield of linseed crop.

### **MATERIALS AND METHODS**

The experiment was conducted at Research Farm of C.S.A. University of Agriculture, Kanpur for two successive years 1999-2000 and 2000-2001. Chambal variety of linseed was sown in 3x2.1 m plot size at 10 days intervals starting from 10<sup>th</sup>, Oct, 20<sup>th</sup> Oct., 30<sup>th</sup> Oct., 10<sup>th</sup> Nov. and 20<sup>th</sup> Nov. in R.B.D. with four replications. Disease severity was recorded based on infected leaf area percentage. The data on first disease appearance were recorded at each sowing date.

### **RESULTS AND DISCUSSION**

The disease appearance and further progress in

relation to different dates of sowing were observed at Kanpur during *rabi* 1999-2000 and 2000-2001. On the basis of two years investigation, it was observed that the disease first appeared in first week of January when crop was sown on 10<sup>th</sup> and 20<sup>th</sup> October whereas on 30<sup>th</sup> October and 10<sup>th</sup> November sown crop, the disease appeared in the second week of January. However, in case of 20<sup>th</sup> November and 30<sup>th</sup> November sowing, the disease appeared in third week of January.

The data in respect of the effect of date of sowing, disease intensity and yield were recorded and statistically analysed, which are presented in Table 1.

A perusal of Table 1 indicates that the effect of different sowing dates on disease intensity as well as seed yield was found to be significant in both the years. Highest average yield (523.80 q/ha) was obtained when sowing was done on 30<sup>th</sup> October followed by 20<sup>th</sup> October sowing having the average yield of 484.12 kg/ha and intensity 26.52% during both the years. However, sowing on 20<sup>th</sup> November gave lowest yield during both the years. No significant yield difference was observed when sowing was done on 10<sup>th</sup> and 20<sup>th</sup> October during both the years.

The disease intensity was slow during the month of January. It became rapid during the last week of February. Similar trends were reported by Singh and Singh (2004), who recorded that the linseed crop sown on 5<sup>th</sup> November gave highest yield and less disease intensity. Saxena (1998) reported that mustard crop sown on 15<sup>th</sup> October gave the maximum yield with lower disease intensity in case of blight of mustard caused by *Alternaria brassicae*.

**Table 1: Date of sowing, disease intensity and seed yield (kg/ha) of linseed during 1999-2000 and 2000-2001**

Sr. No.	Date of sowing		Disease intensity (%)			Seed yield in kg/ha		
	1999-2000	2000-2001	1999-2000	2000-2001	Aver.	1999-2000	2000-2001	Aver. yield
1.	10 <sup>th</sup> Oct.	10 <sup>th</sup> Oct.	15.37 (23.07)	35.90 (36.81)	29.94	456.34	480.15	468.24
2.	20 <sup>th</sup> Oct.	20 <sup>th</sup> Oct.	14.17 (22.11)	26.45 (30.94)	26.52	476.19	492.06	484.12
3.	30 <sup>th</sup> Oct.	30 <sup>th</sup> Oct.	9.22 (17.67)	19.10 (25.90)	21.77	500.00	547.61	523.80
4.	10 <sup>th</sup> Nov.	10 <sup>th</sup> Nov.	4.87 (12.74)	14.95 (22.73)	17.73	523.80	253.96	388.88
5.	20 <sup>th</sup> Nov.	20 <sup>th</sup> Nov.	1.75 (7.57)	6.90 (15.19)	11.38	242.06	226.19	234.12
		S.E. <sub>±</sub>	0.3536	0.5700	0.0165(26.169kg/ha)			0.0150(23.81kg/ha)
		C.D. (P=0.05)	1.0898	1.7567	0.0511 (81.11 kg/ha)			0.0462(73.33 kg/ha)
		C.V.	4.25%	4.33%	11.97%			11.94%

Figures in parenthesis indicate angular transformed values

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