



**EFFECT OF SOWING TIME ON SEED YIELD AND QUALITY TRAITS ON FENUGREEK CULTIVARS**

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**ABSTRACT**

The impact of planting date on yield (kg/ha) and nature of fenugreek seed (germination energy and all out germination) were explored. Planting was done on seven dates, 10 days between dates of each planting. Yield of fenugreek seed planted on various dates contrasted in the two years. Planting completed in the initial fourteen days in April brought about impressively better return contrasted with planting toward the finish of April and during May. The best return was delivered in the second planting date from April 10, then, at that point, in the first (April 1) and the third planting time frame (April 20). The most minimal yield of fenugreek seed was kept in planting did toward the finish of May. Yield of fenugreek seed wasn't altogether divergent in concentrate on years. Prior dates of planting brought about seed of better quality (better germination energy and absolute germination). In the second planting date fenugreek seed got was of best germination energy and all out germination (approx. almost 100%). Later planting dates gave seed of lower quality. Thus, planting did toward the finish of May brought about seed with the most reduced worth of germination energy and complete germination (approx. 91%).

**KEYWORDS:**

**INTRODUCTION**

Fenugreek (*Trigonella foenum-graecum* L.) popularly known as 'methi' or 'metha' is one of the important legume spice crop mainly cultivated for forage and seed purpose. The crop is rich in proteins, minerals, and carbohydrates. Fenugreek is one of such crops in which every plant part is consumed in one form or the other. Its tender leaves are consumed as vegetable, chopped leaves are mixed with flour to prepare 'parantha'. Dried leaves are also used to flavour various vegetable curry and other cooked preparations. Grains have carminative property and also form a concentrated feed for animals. Besides being used as spice, the fenugreek seed is also used in several Ayurvedic preparations mainly in those prescribed for prompting appetite, correcting digestive disorders, and relieving pains in joints, particularly in old age.

**MATERIALS AND METHODS**

The experimental material consisted of ten genotypes of fenugreek viz. (Lam Selection-1, CO-1, GC-77, HFM-65, EC26177-3, IC-5487, OL-326-1, PEB-1, Prabha (NLM) and RMT-1). There were five dates of sowing i.e. 1st October, 15th October, 1st November, 15th November and 1st December. The material was grown in

randomized block design with three replications. The soil of the experimental field was low inorganic carbon, available nitrogen and phosphorus, high in potash and slightly alkaline in reaction. The crop was sown in lines 30 cm. apart using a seed rate of 20 kg ha<sup>-1</sup>. All the recommended package of practice were adopted during the crop period. The data related to yield and yield attributes were recorded at the time of harvesting.

**RESULTS AND DISCUSSION**

**Yield:** The data presented in table indicate that the crop sown on 15th October gave significantly higher seed, straw and biological yield than the other dates of sowing during both the years except the straw yield during 1995-96, where the maximum straw was produced on 1st November and declined thereafter. A decline in seed and biological yield was noticed with the delayed planting from 15th October to 1st December during both the year. The crop sown on 15th October gave 9.8, 14.6, 34.9 and 67.0 percent higher seed yield than 1st October, 1st November, 15th November and 1st December respectively during 1995-96. Whereas, the magnitude of increase for the next year was to the tune of 8.3, 15.2, 36.1 and 70.9 per cent. The fenugreek cultivar PEB-1 out yielded the other cultivars for seed yield and it was closely followed by EC-26177- 3, Lam selection-1 and

RMT-1 during both the years. However, cultivar HFM-65 produced maximum straw yield during both the years. Non-significant differences were observed for biological yield among all the cultivars. A significant variation in seed yield of fenugreek was also reported by Saini et al. (1986), Singh (1992), Dhindwal (1994) and Sheoran et al. (1999).

**Germination Percentage:** The data given in table showed that there was no significant variation in germination percentage among the crop sown from 1st October to 1st December during both the year. Delay in sowing time brought a significant decline in germination percentage upto 1st December during both the years. The reduction in germination percentage with delayed planting may be due to low temperature regimes

at the time of sowing. Non of the cultivars differed significantly with respect to germination percentage.

**Seedling length:** The data further revealed that the seedling length was found to be decreased significantly when the crop was sown after 1st November during both the years. However, Non- significant difference were observed for seedling length for the date of sowing from 1st October to 1st November during both the years. The reduction in seedling length may be due to reduced stored energy in the seed under late sowing condition. During 1995-96 the cultivar did not exhibit any significant difference for seedling length, however during 1996-97 the maximum seedling length was recorded in cultivar IL-326-1 followed by EC-26177-3 and RMT-1.

Table : Effect of sowing time on seed, quality characters of fenugreek cultivars

Treatment	Germination percentage		Seedling length (cm)		Seed vigour index	
	1995-96	1996-97	1995-96	1996-97	1995-96	1996-97
<b>Sowing time</b>						
1st October	95.5	94.8	13.9	13.5	1290.7	1266.6
15th October	95.4	94.8	13.8	13.4	1311.9	1290.9
1st November	95.6	95.1	13.2	12.7	1252.5	1230.8
15th November	89.7	88.3	12.3	11.9	1128.6	1106.2
1st December	86.2	85.2	11.0	10.8	951.6	942.3
C.D. at 5%	2.2	2.4	0.9	0.9	42.9	54.2
<b>Genotypes</b>						
Lam Selection-1	92.8	92.8	11.9	11.4	1100.1	1093.1
CO-1	93.6	92.3	12.6	12.2	1162.0	1141.9
GC-77	92.7	91.4	12.6	12.4	1146.8	1139.9
HFM-65	93.5	92.7	13.1	12.7	1222.1	1191.5
EC-26177-3	94.1	93.3	13.5	12.9	1313.1	1228.7
IC-5487	94.4	93.5	12.4	11.4	1091.5	1082.2
IL-326-1	93.6	92.2	12.1	13.7	1309.2	1285.1
PEB-1	92.1	91.8	12.8	12.5	1186.8	1170.4
Prabha (NML)	91.3	91.1	12.3	12.0	1126.3	1117.6
RMT-1	92.2	92.7	13.0	12.8	1212.6	1203.2
C.D. at 5%	NS	NS	NS	1.2	60.7	76.6

Table : Effect of sowing time on seed, straw and biological yield (kg ha<sup>-1</sup>) of fenugreek cultivars

Treatment	Seed yield kg ha <sup>-1</sup>		Straw yield		Biological yield	
	1995-96	1996-97	1995-96	1996-97	1995-96	1996-97
<b>Sowing time</b>						
1st October	1374	1340	2561	2121	3945	3464
15th October	1508	1451	2654	2100	4174	3553
1st November	1316	1259	2673	1932	3993	3189
15th November	1117	1066	1972	1793	3091	2856
1st December	891	849	1690	1434	2590	2282
C.D. at 5%	078	077	171	175	142	151
<b>Genotypes</b>						
Lam Selection-1	1345	1266	2310	1750	3655	3016
CO-1	1221	1172	2354	1930	3574	3102
GC-77	1147	1152	2483	1941	3623	3092
HFM-65	867	814	2662	2222	3532	3035
EC-26177-3	1358	1306	2211	1813	3570	3114
IC-5487	1237	1194	2250	1924	3491	3113
IL-326-1	1243	1197	2234	1750	3472	2952
PEB-1	1379	1335	2183	1801	3564	3131
Prabha (NML)	1287	1246	2222	1762	3513	3010
RMT-1	1328	1252	2221	1873	3550	3122
C.D. at 5%	111	108	254	240	NS	NS

**Seed vigour index:** Non-significant differences were observed for seed vigour index in sowing time between 1st October and 15th October for both the years. The sowing after 15th October resulted in a significant decline in seed vigour index in succeeding sowing dates. Among the cultivars the highest seed vigour index was observed in cultivar EC-26177-3 followed by IL-326-1 and HFM-65 during 1995-96, whereas during 1996-97 the trend was in order of IL-326-1 followed by EC-26177-3 and RMT-1. The minimum seed vigour index was noticed in cultivar IL-5487 during both the years.

## CONCLUSION

It was concluded that the crop sown on 15th October gave significantly higher seed straw and biological yield than that sown on 1st November, sowing after 15th October reduced the seed yield consistently fenugreek cultivar PEB-1 was found significantly superior to the remaining cultivars for seed yields. However HFM-65 gave maximum straw yield. Germination percentage, seedling length and seed vigor index were found to decrease with the delay in sowing. No significant variation was observed among different cultivars for germination percentage. However, seedling length and seed vigour index were found to vary among the cultivars.

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