

Evaluation of Various Fenugreek Cultivars for Yield and Yield Attributes Under Different Planting Dates

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ABSTRACT: A field experiment was conducted at Rajpura, Jaipur during 1995-96 and 1996-97 to study the effect of five sowing dates (1st Oct, 15th Oct, 1st Nov, 15th Nov & 1st Dec) on yield and yield attributes of ten fenugreek cultivars Lam Selection-1, CO-1, GC-77, HFM-63, EC26177-3, IC-5487, OL-326-1, PEN-1, Prabha (NLM) and RMT-1. On sandy loam soil, the experiment was repeated three times using factorial randomised block designs. The findings showed that crops sown on October 15 had significantly higher seed and biological yields than those sown on November 1. Crops sown after October 15 consistently have lower yields. Delay in planting was also observed to have a negative impact on the yield attribution characteristics. In both years, the fenugreek cultivar PEB-I outperformed the others in terms of yield and other qualities.

KEYWORDS: Fenugreek, cultivars, planting dates, yield attributes, seedling length

INTRODUCTION

Fenugreek (*Trigonella foenum-graecum*) is a multipurpose crop that grows during the winter season in northern India. It is one of the most significant green vegetables in India, and in recent years, it has also been planted for fodder and sauces. The high market values of this crop have drawn farmers to include it in their cropping system. Its seed is useful for food and medicine, especially in the treatment of digestive diseases. A good dose of protein, minerals, and vitamin C can be found in the leaves. Fenugreek seeds are also used

to make pickles, curry powder, and perfume, among other things. Due to the presence of the pharmaceutically useful alkaloids diosgenin and trigonelline, the significance of fenugreek seed has increased recently. The crop works well in Rajasthan's semi-arid agro-ecosystem since it has a minimal water need. Despite the significant value of fenugreek, research done so far does not offer adequate details about when to plant and which varieties to use. Lacking which leads to low production, an experiment was carried up to investigate the impact of planting timings on grain yield and yield characteristics of different fenugreek cultivars. Farm a concentrated feed for animals. Besides being used as a spice, the fenugreek seed is also used in several Ayurvedic preparations mainly in those prescribed for prompting appetite, correcting digestive disorders and relieving pains of 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 Oct, 15th Oct., 1st Nov, 15th Nov & 1st Dec. The material was grown in randomized block design with three replications. The experimental field's soil had high levels of potash but low levels of accessible nitrogen and phosphate, and it was somewhat alkaline in response. With a seed rate of 20 kg/ha, the crop was seeded in lines spaced 30 cm apart. During the crop time, the entire suggested package of practices was implemented. At the time of harvesting,

information on yield and yield attributes was recorded.

RESULTS AND DISCUSSION:

Yield: The data presented in Table 1 indicate that the crop sown on 15th Oct 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 Nov, and declined thereafter. A decline in seed and biological yield was noticed with the delayed planting from 15th Oct to 1st Dec. during both the year.

Table 2 : 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
Sowing time						
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
Genotypes						
Lam Selection-1	92.8	92.8	11.9	11.4	1100.1	1093.1
CO-1	91.6	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-3487	94.4	93.5	12.4	11.4	1091.5	1082.2
IL-526-1	93.6	92.2	12.1	11.7	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

The crop sown on 15th Oct gave 98, 14.6, 349 and 670 per cent higher seed yield than 1st Oct. 1st Nov. 15th Nov and 1st Dec 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 percent. The fenugreek cultivar PE-1 out yielded the other cultivars for seed yield and it was closely followed by EC-26177-3 Lam selection and RMT-1 during both the years. However, cultivar HFM-65 produced maximum straw during both 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

Saint (1986), Singh (1992), Dhindwal (1994) and Sheoran (1999)

Germination Percentage: The data given in Table 2 showed that there was no significant variation in germination percentage among the crop sown from 1st Oct to 1st Dec during both years. Delay in sowing time brought a significant decline in germination percentage upto 1st Dec. during both the years. The reduction in germination percentage with delayed planting may be due to low-temperature regimes at the time of sowing. None of the cultivars differed significantly with respect to germination percentage.

Table 2 : Effect of sowing time on seed, quality characters of fenugreek cultivars.

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Sowing time						
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C.D.at 5%	2.2	2.4	0.9	0.9	42.9	54.2
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Lam Selection -1	92.8	92.8	11.9	11.4	1100.1	1093.1
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IL-326-1	94.4	93.5	12.4	12.9	1313.1	1228.7
IL-326-1	93.6	92.2	12.1	11.4	1091.5	1082.2
PEB-1	92.1	91.8	12.8	13.7	1309.2	1285.1
Prabha (NML)	91.3	91.1	12.3	12.5	1186.8	1170.4
RMT-1	92.2	92.7	12.3	12.0	1126.3	1117.6
C.D. at 5%	NS	NS	13.0	12.8	1212.6	1203.2
				1.2	60.7	76.6

Seedling length: The data further revealed that the seedling length was found to be decrease significant when the crop was sown after 1st Nov during both years. However, non-significant differences were observed for seedling length for the date of sowing from 1st Oct to 1st Nov during both the years. The reduction in seedling length may be due to reduced stored energy in the seed under late sowing conditions. 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

Seed vigour index: Non-significant differences were observed for seed vigor index in sowing time between 1st Oct and 15th Oct for both years. The sowing after 15th Oct resulted in a significant decline in seed vigor index in succeeding sowing dates. Among the cultivars the highest seed vigor 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 vigor index was noticed in cultivar -5487 during both the years.

CONCLUSION

Yield is the main boundary for a harvest. In any case, the yield contributing boundaries are different in grains, seed flavors and heartbeats. In the event of fenugreek, we have estimated the plant level, day to blooming, number of cases per plant, number of seeds per unit, test weight, seed yield, natural yield, and collect file in eight fenugreek assortments. Water pressure caused decline in organic yield when contrasted with non-stress conditions. Organic yield is a significant model for development in yield, which is emphatically impacted by the environment. In the event of collecting file as a significant measure for development in the yield, which is firmly affected by climate. Dry spell vulnerability of a genotype is in many cases estimated as a component of the decrease in yield under dry season stress. Yield is the main boundary for a harvest. Be that as it may, the yield contributing boundaries are different in oats, heartbeats, oilseed and seed flavors crops. If there should arise an occurrence of fenugreek, we have estimated yield in charge as well as water pressure condition. In the current review, there is a decrease in yield because of water pressure at both stages. The

reduction was more in unit development when contrasted with the blossoming in water pressure. In the current article, genotypes Rmt-1 and Rmt-305 were less impacted by water pressure at both stages. These outcomes are upheld by different boundaries concentrated on in this article.

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