

Influence of Sowing Environment on Phenology and Yield of Various Fenugreek Cultivars

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ABSTRACT: A field experiment on fenugreek (*Trigonella foenum-graecum* L) was conducted during winter seasons of 1993-96 and 1996-97 at Rajpura, Jaipur (Raj). The treatment comprised of five dates of sowing (1st October 15th October, 1st November 15th November & December) and ten cultivars (LEM Selection 1, CO-1, GC-77, FM-65 EC36177-3, IC-3487, 11-226-1, P-1, Prabha (NLM) and RMT-1) were replicated thrice in factorial randomized block design. The results revealed that the delay in sowing increased the seedling emergence whereas days taken for fruit formation filling of fruits and maturity were reduced significantly with the delay in sowing. The highest yield was obtained from the crop sown on 15th October as compared to other sowing dates. There was no significant variation in seedling emergence among the ten cultivars. Different fenugreek cultivars were found to differ significantly among themselves for various phenological parameters i.e., fruit formation, filling of fruit, and maturity of fruits.

KEYWORDS: Fenugreek, Sowing time, cultivars, phenology, yield.

Introduction

Fenugreek is one of the important legume space crop mainly cultivated for forage and seed purposes in winter season in northern India: Its rich in proteins, Minerals, carbohydrates, and vitamins particularly Vitamin A and C. Its seeds have both feed and medicinal value, particularly for digestive disorder. In addition, the seed

of fenugreek are also used in curry powder, perfumes and pickles. Being a leguminous crop it also enriches the soil by adding nitrogen through atmospheric nitrogen fixation. Since the yield potential of a crop also depends on the various phenological developments that occur during the crop period. Therefore, an attempt was made to evaluate the various fenugreek cultivars for their phenological characteristics under different sowing times.

MATERIALS AND METHODS

A field experiment was conducted during the rabi season of 1995-96 and 1996-97 at Rajpura, Jaipur. The crop was planted on five sowing dates (1st October, 15th October, 1st November, 15th November & 1st December) with ten fenugreek cultivars namely; Lam Selection-1, CO-1, GC-77, HFM-65, EC-26177-3, IC-5487, IL-326-1, PEB-1, Prabha (NLM) and RMT-1. The experiment was laid down in a factorial randomized block design. The soil of the experimental field was low in organic 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. All the recommended packages of practice were adopted during the crop period.

The data on seed yield was recorded at the time of harvesting whereas, the data on the development of various phenophases i.e., seedling emergence, initiation of flowering, completion of pod development, and maturity of the crop in different treatments were recorded on five

randomly selected tagged plant in each plot.

Table 1. Effect of sowing time on development of fenugreek cultivars during 1995-96 and 1996-97.

Parameter	1995-96		1996-97		Mean		S.E.D.	
	1995-96	1996-97	1995-96	1996-97	1995-96	1996-97	1995-96	1996-97
Seedling emergence	4.1	4.5	4.4	4.2	4.3	4.3	0.2	0.2
Days to fruit formation	72	55	68	51	65	65	10	10
Days to maturity	115	105	110	100	108	108	10	10
Seed yield (kg/ha)	120	150	135	140	138	138	15	15
1000 seed weight (g)	1.2	1.3	1.25	1.25	1.25	1.25	0.05	0.05

RESULTS AND DISCUSSION

Effect of sowing time:

A perusal of data given in Table 1 revealed that various phenological characters influenced significantly with the sowing time. The delay in sowing from 1st October to 1st December significantly increased the time of emergence during both years. Contrary to this, the delayed sowing resulted in a reduction in the time taken for fruit formation. However, the reduction in time to fruit formation between 1st November and 15th November during 1995-96 was non-

Effect of cultivars:

The data further indicate that the cultivars did not exhibit any significant variation in seedling emergence during both years. The cultivar 11-326-1 took the maximum time (72 days) for fruit formation followed by RMT-1 and HFM-65. These three cultivars took significantly longer time for fruit formation than all other rested cultivars with the shortest duration of 51 and 55 days by Lam Selection-1 during 1995-96 and 1996-97 respectively. It was also observed that the cultivar PEB-I took significantly more days for filling of fruits than the other cultivars during 1995-96 whereas, during 1996-97 RMT-1, HFM-65, IL-326-1 remain statistically at par for the time taken to fill the pods and took significantly longer period than the other remaining cultivars. The significant variation was also observed among all

significant. Likewise, the time taken for filling of fruits was significantly reduced with the delay in the sowing of crops from 15th November to 1st December. However, non-significant differences were observed between the sowing dates from 1st October to 15th November. The significant reduction in time taken for fruit formation and filling of fruits also resulted in the significant reduction in the days taken for maturity with the delay in sowing from 1st October to 1st December during both years. A similar reduction in these phenological parameters has also been reported by Randhawa (1996) and Pinzzaru and Dhumba (1996).

The data further indicate that the crop sown on 15th October gave a significantly higher seed yield as compared to other dates of sowing during both years. The increased yield in the 15th October sown crop over early and late planting might be due to favorable weather conditions at the reproductive phase. Similar results were also reported by Dhindwal (1994), Sheoran (1997), and Singh (1998).

these fenugreek cultivars with regard to their maturity period.

It is also apparent from the data (Table 1) that out of ten cultivars tested, PEB-1 proved to be best during both years. It was closely followed by cultivars EC-26177-3, Lam Selection-1 and RMT-1. Saini (1986), Singh (1992) and Sheoran (1999) have also reported significant variation in maturity duration and seed yield of fenugreek.

CONCLUSION

The current article uncovered that planting during November month under open field and shade net house condition is helpful to work on the yield and the pay. Additionally, it is demonstrated that development under conceal net house conditions can work on the development of verdant fenugreek which is gainful for the farmer.

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