

POSSIBILITY OF RAISING TWO CROPS OF MUNG BEAN IN ONE GROWING SEASON

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The feasibility of raising two crops of Mung bean in a single growing season was investigated. For this purpose varying growing periods commencing from March to the middle of August were tried. For getting better and economical yield of mung bean the crop should be sown from the middle of March to the middle of April. A second crop of Mung bean could successfully be raised in the same field after harvesting the March sown crop in July.

INTRODUCTION

Mung bean (*Phaseolus aureus*) is cultivated almost in all parts of the Indo-Pak-subcontinent during the summer months. Variable response of Mung bean to different growing periods is reported by Robert and Singh (1957) and Aziz (1960). In some cases these workers obtained increased yield of better quality under relatively late sown conditions. However, Wilson (1955) indicated that a few days delay in seeding may cause failure of various pulse crops. Recently Khan (1970) reported Mung bean, when planted from early March to the Middle of April, gave higher yield than the June planting. He further suggested that a second crop may be raised in the same field after harvesting the March sown crop in July. In view of these observations, the present study was designed to obtain more definite information regarding the feasibility of raising two crops of Mung bean in one growing season under Lyallpur conditions.

MATERIALS AND METHODS

These investigations were carried out at the Agronomic Research Farm, University of Agriculture, Lyallpur, during the year 1971. The experimental design was randomized complete block with four replications with a net plot size of 1/84 acre. The crop was sown from March to the middle of August at intervals of one month. After harvesting March and April sown crops, the same plots were reseeded as before. The seed was sown in rows 18 inches

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apart at the rate of 8 seers to an acre. Fifty pounds of P_2O_5 per acre was applied at sowing as a basal dose. All other agronomic practices were normal for the crop. Germination counts and stand per unit area at harvest were recorded from a unit area of 2 square feet, selected at random from three different place in each plot. For detailed observations on number of pods per plant, number of beans per pod etc., ten plants were randomly selected in each plot, properly labelled and kept under observation till harvest. The crop was harvested at maturity and the bean yield was recorded in maunds per acre. The data were statistically analysed by the analysis of variance method. Duncan's multiple range test at the 5 per cent probability level was employed to test the significance of the treatment means.

RESULTS AND DISCUSSION

Optimum time of sowing is required to raise the crops successfully. Seasonal variations and distribution of rains in a particular ecological zone play an important role in determining the optimum sowing time of crops (Delorite and Ahlgren, 1957). The results obtained showed that the highest yield of 7.60 and 6.16 mds. per acre was obtained from the mid March and mid April sown crops (Table 1). In the rest of the treatments the level of

TABLE 1. *Effect of sowing date on beans yield per acre.*

First crop		Second crop	
Planting date	Av. bean yield per acre (maunds).	Planting date	Av. yield per acre (maunds)
Early March	3.57 c (1)	Mid July	2.31 a
Mid March	7.60 a	Mid July	1.15 a
Mid April	6.16 b	Mid August	1.42 a
Mid May	1.76 d		
Mid June	3.90 c		
Mid July	2.72 de		
Mid August	1.11 d		

(1) Any two means not sharing a letter in common differ significantly at the 5 per cent level.

yield was very low and seems to be uneconomical. The high yield in case of mid March and mid April sown crops may be attributable to high fruiting capacity, low plant mortality and favourable environmental conditions as compared to other sowing dates. Possibly high temperature over a long period suppressed the growth potential of plants in sowings from mid June to mid August because the plants growing under these treatments were stunted and less-fruited. These findings are supported by Khan (1970) but differ from those of Robert and Singh (1951). As regards the second crop, no yield difference was observed in the July or August replantings. Thus, it would appear from the results in hand that the raising of a second crop after March-April sowing is feasible. However, these investigations should be continued for confirmation of the results. Similar observations were also recorded by Khan (1970).

Fruiting in the early planted crop was high as compared to the late sown crop (Table 2). This could be due to the reason that earlier planted crop had a longer growing period and produced more flowers per plant as compared to the late sown crop, which had relatively short growing period and flowering before the plants were well developed.

TABLE 2: *Effect of sowing dates on number of pods per plant.*

First crop		Second crop	
Planting date	Av. (1) number of pods per plant.	Planting date	Av. number of pods per plant.
Early March	32.85 b (2)	Mid July	18.70 a
Mid March	52.15 a	Mid July	17.05 a
Mid April	31.95 b	Mid August	10.70 a
Mid May	22.05 b		
Mid June	13.70 de		
Mid July	19.25 cd		
Mid August	11.57 c		

(1) Average of 40 plants.

(2) Any two means not sharing a letter in common differ significantly at the 5 per cent level.

Germination and plant stand was also modest in early March, July and August plantings (Table 3). The low temperature in early March adversely affected the seedling emergence and their subsequent development. Similar effects in July-August were attributable to high temperatures and incidence of rains during germination. Low germination, unsatisfactory plant growth, reduced number of pods per plant, lower number of beans per pod, variable 1000-grain weight etc. in early or later sown legumes were also reported by RIEPMA (1951), Wilson (1955), Camper and Smith (1960) and Nelson and Roberts (1962).

TABLE 3. *Effect of sowing dates on seedling emergence.*

First crop		Second crop	
Planting date	Av.(1) seedling density per unit area (2' x 2')	Planting date	Av. seedling density per unit area (2' x 2')
Early March	15.83 cd (2)	Min July	11.66 b
Mid March	18.58 abc	Mid July	12.58 b
Mid April	19.74 ab	Mid Augut	17.58 a
Mid May	17.49 bcd		
Mid June	21.33 a		
Mid July	11.41 e		
Mid August	13.83 de		

(1) Average of 12-two by two feet unit area samples.

(2) Any two means not sharing a letter in common differ significantly at the 5 per cent level.

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