

RESPONSE OF GREEN GRAM (*Vigna radiata*) TO SOWING DATES UNDER RAINFED CONDITIONS.

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ABSTRACT

The experiment conducted at Gwalior showed that 13th July sowing and the variety ML-131 are the best for getting the high yield during *kharif* season in Northern Madhya Pradesh in respect of greengram.

KEY WORDS : Greengram, varieties, Time of Sowing.

Greengram (*Vigna radiata* (L) Wilczek) is one of the important pulse crops for Kharif season in Northern Madhya Pradesh. Timely planting of greengram contributes to higher grain yield and may also help in the succeeding crop to fit well in double cropping system. Identification of suitable varieties and optimum date of sowing is very important for high yield (Lal, 1985). Keeping this in view, an investigation was undertaken to evaluate some promising greengram varieties under different times of sowing for the agro-climatic conditions of Northern Madhya Pradesh.

The experiment was conducted during Kharif seasons of 1986 and 1987 at the J.N.K.V.V. Farm, college of Agriculture, Gwalior (M.P) in split plot design with three replication under rainfed conditions. The treatments consisted of four dates of sowing (13th, 23rd July, 2nd and 12th August) as main plot treatment and four cultivars (ML-131, GMC-47, GMC-73 and Pusa Baisakhi) as sub plot treatments. Seeds were sown in rows at 30 X 10cm. A basal dose of 100 kg diammonium phosphate (18 + 46 + 0 of N + P₂O₅+K₂O kg ha⁻¹) was applied. The soil was vertisol with medium to low status of available N, P, and K. The total rainfall was 753.3 mm and 338.7 mm during 1986 and 1987, respectively.

Effect of sowing dates

Dates of sowing had significant influence on yield, yield attributing characters and protein content of greengram in both the years. The highest grain yield was recorded with early sowing (13th July). The increase in grain yield was 917.0, 525.0 and 310.9 per cent in 1986 and 314.4, 247.4 and 209.3 percent in 1987 with 13th, 23rd July and 2nd August over last date of sowing (12th August), respectively. The increase in grain yield was due to higher number of primary and secondary branches, number of pods, number of seeds pod⁻¹, grain weight plant⁻¹ and thousand grain weight in early sowing. The early sowing produced more yield as compared to later dates of sowing, which might be due to longer crop duration under optimum required temperature and moisture conditions, in turn affected higher yields. Similar findings were also observed by Saxena and Yadav (1975), Saharia (1981) and Saharia (1985).

Effect of varieties

Cultivar ML -131 yielded significantly higher grain yield over the rest of the cultivars in both the years (Table 1). The higher yield and yield attributes in cv. ML -131 may be attributed to inherent genetic characters. Similar results have also been reported by Saharia (1985). The interaction effect between dates of sowing and varieties was found to be non significant.

Table 1. Effect of different sowing dates on greengram varieties.

Treatment	Grain yield (q.ha ⁻¹)	
	1986	1987
<u>Sowing date</u>		
13th July	10.9	7.42
23rd July	5.78	5.84
2nd August	3.42	4.94
12th August	1.10	2.36
C.D. (5%)	2.31	2.98
<u>Varieties</u>		
ML-131	6.68	7.57
GMC-73	4.35	4.40
GMC-47	4.21	4.58
Pusa Baisakhi	4.70	5.36
C.D. (5%)	1.97	2.06

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Madras agric. J.78 (9-12) Sep-Dec-1991

PRODUCTION POTENTIAL AND ECONOMICS OF WHEAT AND MUSTARD IN SOLE MIXED AND INTERCROPPING SYSTEMS

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ABSTRACT

A field experiment was conducted at Cropping Systems Research Centre, Gujarat Agricultural University, Navsari during 1979-1980 to 1981-1982. Recommended seed rates of two crops were mixed in different ratios of wheat and mustard (50:50, 66.7:33.3, 75:25 and 83.3:16.7 per cent) and wheat rows alternated with different number of mustard rows (1:1, 3:2, 6:2 and 10:2) were compared with sole crops of wheat and mustard. The highest wheat equivalent (20.8 q ha⁻¹) LER (1.59) and gross returns (6243 Rs/ha⁻¹) were obtained when wheat and mustard seeds were mixed in ratio of 75:25 per cent which was similar to alternate rows (10:2 ratio) Thus a lower population of mustard in wheat either mixed or grown in rows gave the maximum profit.

KEY WORDS : Wheat, Mustards, Sole cropping, Mixed Cropping, Intercropping, Ecomom

The practice of growing two or more crops was considered as a safeguard against total failure of any particular crop. It was also reported that mixed cropping had advantage over monocropping in total productivity and for ensuring normal yields under adverse climate conditions coupled with less incidence of pest and diseases (Mehrotra and Ali 1970) Information regarding production potential of wheat and mustard in sole, and mixed and intercropping systems in rainfed area under deep black soil are lacking. Hence the present study was made to find out most economic and productive proportion of

wheat and mustard crops in a mixed ; intercropping systems as compared to sole cro

MATERIALS AND METHODS

The experiment was conducted during 1979-1980 to 1981-1982, at Cropping System Research Centre, Gujarat Agricultural University, Navsari. The experiment consisted ten treatments (Table 1) in a randomised block design with three replications in rabi season. The soil was deep, black, neutral in reaction and contained 0.40 percent organic carbon, 22.70