

Comparative Performance of Certain Varieties of Soybean (*Glycine max* (L) Merr) in Kharif Season

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ABSTRACT

In this experiment, twelve varieties viz. (1) Improved Pelican, (2) Punjab-1, (3) Lee, (4) Burette, (5) Monetta, (6) Hampaton 266, (7) Clark 63, (8) Bragg, (9) T.49 (10) Jalgaon 55 (11) S.B. 4 and (12) Mandala (local) were compared during the two years i.e. 1968-69 and 1969-70 in kharif season, in respect of the number of days required by them to reach flowering and maturity stages, yield of beans per hectare, test weight and protein and oil content. From the view point of maturity, Clark 63 was found to be early, Lee, Bragg, Punjab-1, Burette, Monetta and Hampton 266 were mid-late and improved Pelican, T. 49, Mandala (local), Jalgaon 55 and S. B. 4 were late in maturity. The over all results on yield of beans showed that Hampton 266 was top-ranking among all the twelve varieties. It yielded 4487 kg bean per hectare during 1969-70. Other promising varieties were Clark 63, Lee, Bragg and improved Pelican which yielded 3985, 3722, 3502 and 3320 kg beans per hectare, respectively, in the year 1969-70.

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INTRODUCTION

THE IMPORTANCE of soybean as a rich source of superior quality protein as well as edible and industrially useful oil has been well recognised in India in recent years. Indeterminate varieties grow well, flower late and yield higher than determinate varieties Sankara Reddi (1974) and Saxena, Singh and Pandey (1971) indicated that soybean varieties suitable for kharif planting are not suitable for spring season planting as they do not mature properly and produce poor or no yield. With a view to introduce and test promising varieties of soybean for their suitability and multiplication in middle Gujarat this experiment was planned.

MATERIAL AND METHODS

During 1968-69 and 1969-70 the

experimental crop was sown on 28-6-68 and 30-6-69 with row to row spacing of 45 cm and plant to plant spacing of 5 cm. During 1968-69; this experiment was laid down on soil having poor fertility level manured with 15 tonnes of F.Y.M. per hectare as basal manure and supplemented with 20 kg N and 60 kg P_2O_5 per hectare prior to sowing and 20 kg N/ha after sowing. During 1969-70 the experiment was laid down on medium soil having good fertility level and manuring was done at the rate of 75 kg nitrogen and 60 kg P_2O_5 per hectare. Of the total fertilizer, 25 kg nitrogen and all P_2O_5 were applied prior to sowing and the remaining 50 kg nitrogen per hectare was applied after sowing. During 1968-69 and 1969-70 three and two irrigations were, respectively, given due to want of adequate rainfall. During

both the years randomised block design was adopted with four replications.

RESULTS AND DISCUSSION

The results of the year 1968-69 and 1969-70 have been presented in Table 1. It was revealed that, from the view point of maturity Clark-63 was found to be early; Bragg, Punjab-1, Burette, Monetta, Mandala and Hampton 266 were midlate and improved Pelican, T. 49, Jalgaon-55 and Jalgaon S.B. 4 were late in maturity among the twelve varieties compared in both the years.

In the year 1968-69 the differences in yield of beans due to various varieties were significant. The four varieties viz. Hampton 266, T. 49, improved Pelican and Mandala yielded significantly higher than S.B. 4, Lee, Monetta, Bragg and Clark 63.

In the year 1969-70 the variety Hampton 266 yielded the highest (4487 kg/ha) and significantly more than the rest of the varieties. Among the rest, Clark-63, Lee and Bragg were in that descending order of their performance. The per hectare yields of these varieties were 3985, 3722, 3502 and 3320 kg respectively, which were quite high as compared to that of the other varieties.

In respect of test weight (weight per 100 seeds), the differences were significant only in 1969-70. Hampton 266 stood the first (16.13 gm) followed by Clark 63, Bragg, Lee and Mandala. There were no significant differences in respect of test weight among Hampton 266, Clark 63 and Bragg and similarly between Bragg and Lee and also between Lee and Mandala.

The relationship between protein

TABLE 1

Days to flower, days to mature, yield of beans per hectare test weight of different varieties of Soybean in kharif season.

Sr. No.	Variety	Days to flower		Days to maturity		Yield of beans kg/ha		Test weight (100 seedweight)		Yield of protein (%)		Yield of oil (%)	
		'68-69	'69-70	'68-69	'69-70	'68-69	'69-70	'68-69	'69-70	'68-69	'69-70	'68-69	'69-70
1.	Hampton 266	42	48	108	95	1720	4487	10.8	16.1	35.1	35.2	23.7	22.2
2.	T. 49	52	40	117	106	1647	2704	11.1	9.8	41.6	40.2	17.6	17.9
3.	Improved Pelican	48	56	112	106	1497	3320	9.8	10.8	39.7	37.5	19.4	17.8
4.	Mandala	46	48	106	108	1447	3040	11.6	13.3	41.3	40.0	18.3	17.2
5.	Burette	53	41	106	95	1324	3075	11.0	10.3	35.9	37.6	20.6	19.0
6.	Jalgaon 55	70	66	133	132	1300	1989	10.9	9.9	40.5	42.2	17.1	15.7
7.	Punjab-1	41	30	100	115	1285	2649	10.3	10.8	39.2	40.6	19.8	17.6
8.	Jalgaon S.B. 4	84	70	133	132	1020	1940	10.3	9.8	41.2	42.9	17.6	14.5
9.	Lee	48	37	108	91	990	3722	10.3	14.3	35.7	39.5	20.4	19.2
10.	Monetta	49	48	106	95	950	2996	11.6	10.1	36.2	36.4	20.2	18.2
11.	Bragg	37	30	92	95	803	3502	11.6	14.9	36.2	34.9	22.5	22.7
12.	Clark 63	32	25	80	83	633	3985	11.5	15.8	36.3	36.0	22.1	21.7
	S.Em.	—	—	—	—	111.8	124.0	0.83	0.47	—	—	—	—
	C.D. at 5%	—	—	—	—	321.8	357.5	N.S.	1.36	—	—	—	—
	C.V.%	—	—	—	—	30.6	7.9	15.2	7.67	—	—	—	—

and oil contents of the different varieties was negative in both the years. In the year 1968-69, the protein content of beans of T. 49, Mandala, Jalgaon S.B. 4, improved Pelican and Punjab-1 were higher than that of the remaining varieties but the oil content of these varieties were low.

Taking into consideration the overall performance of all the varieties, Hampton 266 has been found to be top ranking in respect of yield of bean. This was followed by Clark 63, Lee, Bragg and improved Pelican. All these varieties have been found to be promising.

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