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Studies on Varietal Behaviour of Spanish Bunch Groundnut Cultivars in Summer Season in Gujarat State

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The Spanish bunch varieties of groundnut (*Arachis hypogaea* L. var. *vulgaris*) are predominently grown in the traditional kharif groundnut area in Gujarat State. The area under summer groundnut in Gujarat is steadily increasing. However, information on the most suitable variety for cultivation during summer under irrigated conditions is presently not available. Efforts were therefore made in the present study to collect the above information.

This study was undertaken during 1981 summer season at the Agronomy Farm of the B. A. College of Agriculture, Gujarat Agricultural University, Anand Campus, Anand. Ten spanish bunch groundnut cultivars were tested in a randomised block design with three replications. The soil was low in organic matter (0.51%), total nitrogen (847 kg/ha), medium in available phosphorous (24.6 kg/ha), and exchangeable potassium (249.0 kg/ha). The soil had slightly alkaline reaction (pH 7.8). Fertilizers at 25 kg N, 50 kg P_2O_5 and 25 kg K_2O/ha in the form of urea, super phosphate and muriate of potash were placed 5 cm away from seed rows and at 5 cm depth at sowing. The seeds were hand-dibbled on 11-2-81 at a spacing of 45 x 10 cm. The gross and net plot sizes were 2.7 x 4.0 m and 1.8 x 3.6 m, respectively. Irrigations were given at an interval of 10 days all through the crop period. All the cultivars matured in 110 days after sowing except cultivar G-201, which matured in 118 days.

Significant differences among cultivars were observed in mature pods per plant which ranged from 13.83 to 22.80. The cultivars 27-5-1, 28-4-1 and 99-5 produced 39.34, 38.99 and 29.44 per cent higher number of mature pods over JL-24, respectively. The cultivars studied differed significantly in respect of weight of mature pods per plant (on oven dry basis). The cultivars G-201 and TG-17 had 36.79 and 34.65 per cent higher pod weight per plant over JL-24, respectively. The highest 100 kernel weight was recorded with cultivar TG-18 (56.37 g) and it differed significantly from other cultivars. The lowest 100 kernel weight was recorded in cultivar 99-5 (34.23 g). The highest 100 kernel weight was due to larger seeds. The differences in shelling percentage among cultivars were significant and ranged from 55.20 to 71.80 per cent. The cultivars which had bigger pod size had lower shelling percentage.

Significant differences among the cultivars were found in pod yield. The cultivar G-201 (36.97 q/ha) had higher

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TABLE 1

Total number of mature pods and mature pod weight per plant, 100 kernel weight, shelling percentage, pod yield, oil and protein content of kernel of different cultivars of Spanish groundnut. (Mean of three replications).

Cultivars	*Number of mature pods per plant*	*Mature pod weight per plant (g)*	*100 kernel weight (g)*	*Shelling percentage*	*Pod yield (q/ha)*	*Oil content (%)*	*Protein content (%)*
GAUG-1	17.87	13.90	35.60	71.80	21.11	50.10	26.56
J-11	18.07	12.53	34.40	68.07	22.37	50.33	26.98
JL-24	13.83	12.20	41.80	61.90	19.83	49.60	30.73
TG-3	16.13	16.87	43.63	63.87	27.70	51.00	30.40
TG-17	18.40	18.67	46.07	58.17	31.40	50.50	24.92
TG-18	16.93	17.93	56.37	55.20	30.58	50.07	26.19
G-201	17.60	19.03	42.40	70.90	36.97	50.00	25.12
99-5	19.60	13.53	34.23	68.87	27.20	49.60	25.44
27-5-1	22.80	16.90	44.47	64.10	32.44	49.47	25.00
28-4-1	22.67	16.83	39.83	66.80	29.36	50.23	25.42
Mean	18.39	15.84	41.88	64.97	27.99	50.09	26.68
C.D. 5 %	3.29	3.01	4.22	5.91	5.10	N.S.	N.S.
C.V. %	10.45	11.07	5.88	5.30	10.63	1.51	10.40

pod yield compared to other cultivars, but was at par with cultivar 27-5-1 (32.44 q/ha). The lowest pod yield was recorded in cultivars JL-24 (19.83 q/ha). The cultivars G-201, 27-5-1, TG-17, TG-18 and 28-4-1, had 46.36, 38.87, 36.85, 35.15 and 32.46 per cent higher pod yield than JL-24, respectively.

The differences in oil content (49.47 to 51.00 per cent) and protein content (24.92 to 30.73 per cent) of kernel in different varieties were not significant.

The spanish bunch groundnut cultivars viz. G-201 27-5-1, TG-17, TG-18 and 28-4-1 gave higher pod yield in the summer season under Charotar tract conditions of the Gujarat State.

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