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Response of Spreading Groundnut (*Arachis hypogea* L.) to Row Spacing Under Rainfed Condition

M. K. Khistaria*, D. R Padmani, J. C. Patel and M. G. Khokhani

Main Dry Farming Research Station, Gujarat Agricultural University, Targhadia (Rajkot)

Groundnut is a C_3 plant which is subjected to photo-respiration. One of the reason for low yield of groundnut is photo-respiration. It can be minimized by following proper crop geometry which can be obtained by sowing the crop at proper spacing. In case of groundnut crop, proper spacing provide sufficient interception of sunlight and satisfactory absorption of nutrients and water from the soil due to proper development of underground root system. Generally, farmers of Saurashtra area are followed wider row spacing of 90 cm for spreading groundnut.

A field experiment was conducted at the Research Station, Dhari (Rajkot) on medium black soil during *kharif* seasons of 1981-82 to 1985-86 to find out the optimum inter-row spacing for spreading groundnut (GAUG-10). Five inter row spacings (30, 45, 60, 75 and 90 cm) were tested in randomised block design with low to medium in available nitrogen and phosphorus but high in available potash. The crop was fertilized with 12.5 kg N + 25 kg P_2O_5/ha. Crop was sown using 80 kg seed/ha after sufficient rains received during *kharif* seasons of all the five years.

It is evident from the data in (Table 1) that the treatment differences were significant in respect of fodder yields during 1981-82, 83-84 and 84-85, whereas non-significant in 1982-83, 1985-86 and in pooled data. Significantly the highest pod yield of groundnut was recorded during 1982-83 to 1985-86 and in pooled data with row spacing of 60 cm, whereas non-significant in the first year. The pooled data revealed that significantly maximum pod yield (643 kg/ha with gross income 4500 Rs/ha) of groundnut was recorded with 60 cm row spacing. It was also reflected that pod yields reduced with wider row spacing (75 and 90 cm) as compared to lower spacing (30 and 45 cm). Similar trend was also recorded. in respect of gross income under 75 and 90 cm (3558 and 3511 Rs/ha) as compared to 30 and 45 cm (3917 and 3994 Rs/ha). These findings are also in close confirmation with those of Saini and Tripathi (1974). The superiority of closer spacing over wider spacing in groundnut has also been reported by

*Present address : Associate Research Scientist, Main Dry Farming Research Station, GAU, Targhadia, Rajkot.

TABLE 1

Yield of spreading groundnut (GAUG 10) as influenced by different row spacings.

Treatment (spacing)	*Years*												*Gross income Rs/ha*
	1981-82		*1982-83*		*1983-84*		*1984-85*		*1985-86*		*Pooled*		
	Pod	*Fodder*	*Pod*	*Fodder*	*Pod*	*Fodder*	*Pod*	*Fodder*	*Pod*	*Fodder*	*Pod*	*Fodder*	
30 cm	799	3950	612	6268	513	707	213	781	482	1259	524	2593	3917
45 cm	794	3602	668	6646	571	786	260	955	365	1345	532	2667	3994
60 cm	877	3277	830	6559	803	907	352	998	356	1259	643	2600	4500
75 cm	783	2875	528	5912	640	821	181	833	250	1333	476	2355	3558
90 cm	725	2279	509	6495	634	807	117	825	360	1259	469	2333	3511
S. Em. ±	40	71	42	244	40	27	15	28	21	55	33	142	—
C. D. at 5 %	NS	219	131	NS	124	84	47	86	66	NS	98	NS	—
C. V. %	10.18	4.44	13.50	7.64	12.78	6.74	13.66	6.35	11.74	8.47	12.84	9.35	—

Gross income is calculated as under :

Sr. No.	Item	Rs./q
1	Groundnut pod	500
2.	Groundnut fodder	50

Y X T interaction, S. Em. ± 34 (D = 96 at 5 %)

Gopalswamy *et al.* (1979), Similarly Patel *et al.* (1985) reported lower pod yield of groundnut with wider row spacing.

It was concluded that potential production from rainfed spreading groundnut could be secured by keeping inter-row spacing of 60 cm in North Saurashtra Agro-Climatic Zone.

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