REFERENCES

Badiger, M. K., Reddy, M. P., Michal, R. and Shivraj, B. 1982. Influence of fertilizer K, S and Ca on the yield and quality attributes of groundnut. *Soil Science* 30 (2) : 166–169.

Pasricha, N. S., Aulakh, M. S., Bahl, G. S. and Baddesha, H. S. 1987. *Nutritional requirements of oilseeds and pulses, in Punjab (1974–1986),* Department of Soil Science, Punjab Agricultural University, Ludhiana.

Shehi Dwivedi, R. 1986. *Mineral nutrition of groundnut.* Book-Metropolitan, New Delhi, pp. 40.

Tandon, H.S. 1986. *Sulphur Research and Agriculture Production in Indian.* Fertiliser Development and Consultation Organisation, New Delhi.

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Response of promising groundnut (*Arachis hypogaea*) genotypes to fertilizer levels during summer

P. D. BHALERAO, P. N. JADHAO AND G. R. FULZELE

Oilseeds Research Unit, Punjabrao Krishi Vidyapeeth, Akola, Maharashtra 444 104

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Dhar (1981) pointed out that the improved varieties of a crop may require more liberal manurial treatment than that grown ordinarily. The information on fertilizer requirement of the newly evolved genotypes of summer groundnut (*Arachis hypogaea* L.) is inadequate, the present study was undertaken to find out fertilizer requirement of the some promising genotypes.

The field experiment was conducted during summer 1990 in a factorial randomized block design with 3 replications. The soil was medium black containing 250 kg/ha available N, 16 kg/ha P_2O_5 and 490 kg/ha K_2O, with pH 7.9. There were 12 treatment combinations, consisting of 4 genotypes and 3 fertilizer levels as in Table 1. The crop was sown on 27 January 1990 at a spacing of 30 cm × 10 cm by dibbling method. The fertilizer as per treatments was applied at the time of sowing through urea, single superphosphate and muriate of potash. A recommended agronomic package of practices and plant-protection measures were adopted throughout the growth period of crop. The crop was harvested at proper maturity. Data on pod and haulm yields and yield-attributing characters were recorded.

Among the genotypes tested, 'Sel. 7-9-5' gave significantly highest pod yield than 'ICGV 86309' and 'J 19', however, it was on a par with 'ICGV 87189'. Yield difference between 'ICGV 86309' and 'J 19' were non-significant. The higher yield given by genotype 'Sel. 7-9-5' was owing to higher values of yield-attributing characters, viz. number of pods/plant, weight of pods/plant and 100-pod weight. For haulm yield, genotypes 'Sel. 7-9-5', 'ICGV 86309' and 'J 19' being at par recorded significantly more yield than 'ICGV 87189'. Difference

Table 1. Dry-pod and haulm yields, growth and yield attributes as influenced by genotypes and fertilizer levels

Treatment	Yield (kg/ha)		Plant height (cm)	Pods/ plant	Pod weight/ plant (g)	100-pod weight (g)	Test weight (g)	Oil content (%)
	Dry pod	Haulm						
Genotype								
'J-19'	1,858	5,817	25.2	15.0	10.6	81.1	32.7	46.7
'Sel.7-9-5'	2,613	6,746	21.1	19.0	16.8	91.5	42.6	48.4
'ICGV 86309'	2,101	6,698	18.1	17.8	10.9	82.1	29.2	48.0
'ICGV 87189'	2,537	5,202	18.2	16.2	15.6	89.5	46.8	48.9
CD (P = 0.05)	164.16	1,196.8	2.50	NS	1.23	6.39	1.68	
NPK (kg/ha)								
50% recommended dose (12.5, 25, 15)	2,167	5,159	19.4	16.6	12.9	85.4	38.3	48.5
100% recommended dose (25, 50, 30)	2,308	5,992	20.6	16.9	13.5	87.2	38.3	47.2
150% recommended dose (37.5, 75, 45)	2,360	7,143	21.9	17.5	14.1	85.6	36.8	48.3
CD (P = 0.05)	138.49	1,036.5	NS	NS	NS	NS	NS	
Interaction								
G ×F	NS	NS	NS	NS	NS	NS	NS	

NS, Non-significant

G ×F, Genotype ×fertilizer

between the latter 2 genotypes was not significant.

The pod and haulm yields of groundnut increased significantly due to fertilizer levels. The application of 150% and recommended dose (25 : 50 : 30 NPK kg/ha) increased the pod yield significantly compared with 50% recommended dose. The higher fertilizer level (N, P and K @ 37.5, 75.0 and 45 kg/ha) recorded significantly higher haulm yield than lower fertilizer levels, i.e. N, P and K @ 25, 50 and 30 kg/ha and 12.5, 25.0 and 15 kg/ha respectively. This might be due to luxuriant crop growth with application of higher dose of fertilizer.

The result indicates that all the newly evolved genotypes met out their fertilizer requirement through recommended dose of fertilizer and there is no necessity to increase the recommended dose for Vidarbha region of Maharashtra.

REFERENCE

Dhar, B. K. 1981. *Fertilizer consumption trend and necessity for increasing fertilizer use efficiency.* Ministry of Agriculture, Government of India, New Delhi.

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Effect of nitrogen and phosphorus on growth and yield of sunflower (*Helianthus annuus*)

M. G. KHOKANI, R. P. S. AHLAWAT[1] AND S. J. TRIVEDI[2]

Department of Agronomy, N. M. College of Agriculture, Gujarat Agricultural University, Navasari 396 450

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A field experiment was conducted at Navasari during the winter season of 1988–90 to study the effect of nitrogen and phosphorus fertilization on growth and yield of sunflower (*Helianthus annuus* L.) The experiment was laid out in randomized block design with 4 replications, taking 4 levels each of N and P_2O_5 (0, 30, 60 and 90 kg/ha). Ammonium sulphate, urea and single superphosphate were used as a source of N and P. The soil was clay, having pH 7.7, available N 227.5 kg/ha, available P_2O_5 47 kg/ha and available K_2O 327 kg/ha. Sunflower variety 'EC 68414' was sown at a spacing of 60 cm × 20 cm on 5 December 1988 and harvested on 23 March 1989.

Nitrogen application significantly increased the plant height, leaf-area index, dry matter/plant, head diameter, 1,000-seed weight, grain yield/plant, seeds/head, stalk

Present address: [1,2]Office of the Associate Director of Research, GAU, Navasari