

Response of French bean (*Phaseolus vulgaris*) genotypes to nitrogen

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A field experiment was conducted during the summer 1990 at Kukumseri, to study the comparative performance of 4 genotypes of French bean (*Phaseolus vulgaris* L.) ('Katrain 1', 'Him 1', 'B 4' and 'B 6') at different levels of nitrogen (0, 30, 60 and 90 kg/ha). The experiment was laid out in split-plot design with 3 replications, keeping genotypes in main plots and N levels in sub-plots. The soil was sandy loam, rich in organic matter (2.4%) with near neutral reaction (pH 6.8). The available N, P and K in the soil were 600, 10 and 160 kg/ha respectively. The crop was sown in lines 30

cm apart on 21 May and given a basal dressing of 100 kg P₂O₅ and 50 kg K₂O/ha and the whole nitrogen as per treatment.

All the genotypes differed significantly for grain yield and yield attributes (Table 1). 'B 6' showed significantly higher plant height than the other genotypes in our study. Branches/plant, pods/plant and grain yield (19.90 q/ha) were also maximum in the genotype. Nitrogen @ 60 and 90 kg/ha being at par resulted in significantly higher grain yield than that at 0 and 30 kg/ha. Nitrogen application exerted significant beneficial effect on yield attributes which in

Table 1. Effect of N and variety on yield and yield attributes of French bean

Treatment	Plant height (cm)	Branches/plant	Pods/plant	Grain yield (q/ha)	Straw yield (q/ha)
Variety					
'Katrain 1'	35.1	14.8	10.6	14.5	18.8
'Him 1'	28.9	15.3	12.4	17.8	18.2
'B 4'	29.5	18.3	14.1	18.2	18.5
'B 6'	38.7	19.1	15.1	19.9	20.9
CD (P = 0.05)	3.2	4.2	3.9	1.9	NS
N (kg/ha)					
0	26.6	12.5	8.6	11.7	14.0
30	34.0	16.9	13.7	17.9	20.2
60	35.8	19.0	15.2	20.9	22.0
90	35.7	19.0	14.7	19.8	20.2
CD (P = 0.05)	7.2	2.2	4.6	1.2	3.5

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turn increased the grain and straw yields. The results confirm the findings of Masood Ali and Tripathi (1988) and Srinivas and Naik (1988).

The relationship of grain yield and N application was quadratic and the following equations were computed:

'Katrain 1'

$$Y = 2\,823.9 + 73.18 X - 0.56444 X^2$$

'Him 1'

$$Y = 3\,513.0 + 85.365 X - 0.63083 X^2$$

'B 4'

$$Y = 3\,728.1 + 78.1367 X - 0.56389 X^2$$

'B 6'

$$Y = 3\,978.4 + 90.6967 X - 0.66389 X^2$$

The economic optimum doses of N were 64.26, 67.15, 68.72 and 67.83 kg/ha for 'Katrain 1', 'Him 1', 'B 4', and 'B 6' respectively.

REFERENCES

- Ali Masood and Tripathi, A. 1988. Dry matter accumulation and yield of winter french bean (*P. vulgaris*) as influenced by genotypes, nitrogen levels and plant population. *Indian Journal of Agricultural Sciences* 58 (4) : 263-267.
- Srinivas, K. and Naik, K. 1988. Response of vegetable French bean (*Phaseolus vulgaris*) to N and P-fertilization. *Indian Journal of Agricultural Sciences* 58 (9) : 707-708.

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Relative performance of groundnut (*Arachis hypogaea*) varieties to sowing date

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Among oilseeds, groundnut (*Arachis hypogaea* L.) is getting popular with the farmers because it provides greater and assured returns compared to most of the competing crops and also facilitates the sowing of rainy-season crop at normal time. This necessitated to find out the optimum time of sowing of summer groundnut to boost up its productivity.

The field experiment was conducted during the summer season of 1990 at Jagital. 'ICGS 11' and 'K 3' varieties were used

under varying dates of sowing (10 January, 20 January, 30 January, and 9 February) in a factorial randomized block design with 3 replications. The soil of the experimental site was sandy loam, poor in nitrogen, medium in phosphorus and potassium and neutral in reaction. The groundnut varieties were sown as per the treatment at 30 cm × 10 cm spacing. The crop received recommended fertilizer (30 kg N, 60 kg P₂O₅ and 30 kg K₂O/ha). N @ 20 kg/ha and entire P₂O₅ were given basal and the remaining N