GAU Res. J. 1985, 11 (1): 57-58

Response of Gram to Dates of Sowing Under Different Fertility Levels

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A field experiment was carried out at the College Farm of N. M. College of Agriculture, Gujarat Agricultural University, Navsari Campus, Navsari during *rabi* season of 1981-82 in split plot design with three dates of sowing (October, 22; November, 6 and November, 21) in main plots and six treatment combinations consisting of two levels of nitrogen (0 and 25 kg N/ha) and three levels of phosphorus (0, 25 and 50 kg P_2O_5/ha) as sub-plot treatments. All the treatments were replicated four times. The variety *Dahod Yellow* of gram was sown at 30 cm apart with 75 kg seed rate/ha and was harvested on attainment of maturity. The soil was clayey in texture having pH 7.6, organic carbon 0.92%, total nitrogen 0.06%, available P_2O_5 24.78 and K_2O 416.0 kg/ha.

Data presented in Table 1 revealed that number of pods per plant, grain yield per plant, grain yield per hectare and fodder yield per hectare were significantly influenced by the sowing time. However, number of grains per plant and test weight remained unaffected due to dates of sowing. Late sowing on November, 21 resulted into significantly higher grain and fodder yield of 1372 and 2156 kg/ha, respectively. The higher grain yield of gram in late sowing was due to more number of pods per plant and higher grain yield per plant. These results are in conformity with those recorded by Ageeb and Ayoub (1977) and Nema (1981).

Application of nitrogen was found beneficial as compared to no application with respect to development of most of the yield characters studied. Application of 25 kg N/ha significantly increased grain as well as fodder yield by 17.31 and 9.19 per cent over no application, respectively. Application of phosphorus significantly increased the number of pods per plant, grain yield per plant and grain yield per hectare. However, number of grains per plant, test weight and fodder yield were not significantly influenced by the phosphorus application. Application of phosphorus @ 25 and 50 kg P_2O_5/ha significantly increased the grain yield by 17.29 and 18.37 per cent over control. Similar results were also recorded by Mann (1968), Chundawat *et al.* (1976) and Suryawanshi and Chaudhari (1979).

From the above discussion it is clear that, sowing gram on 21st November along with the application of 25 kg N + 25 kg P_2O_5 per hectare proved better for getting higher yield under South Gujarat condition.

(Received on 7th July, 1984)

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TABLE 1

Yield and yield attributes of gram as influenced by dates of sowing and fertilizer application.

Treatments	*No. of developed pods per plant*	*No. of developed grains per plant*	*Grain yield gm/plant*	*1000 grain weight (gm)*	*Grain yield (kg/ha)*	*Fodder yield (kg/ha)*
Date of sowing						
22-10-81	28.00	32.58	5.73	137.7	1182	2003
6-11-81	24.79	27.78	4.46	140.4	1156	1853
21-11-81	29.93	32.56	7.99	141.2	1372	2156
S.Em. ±	1.008	1.575	0.677	0.885	31.94	65.28
C.D. 5%	3.478	N.S.	2.336	N.S.	109.72	225.00
Nitrogen levels (kg/ha)						
0	24.67	27.16	5.31	137.9	1138	1916
25	30.48	34.79	6.80	143.0	1335	2092
S.Em. ±	0.371	1.290	0.197	0.747	23.61	48.61
C.D. 5%	1.055	3.667	0.560	2.120	66.67	138.20
Phosphorus levels (kg/ha)						
0	26.38	30.94	5.27	139.0	1105	1887
25	27.63	30.51	6.53	140.5	1296	2049
50	28.72	31.48	6.37	141.9	1308	2077
S.Em. ±	0.454	1.580	0.241	0.915	29.17	59.72
C.D. 5%	1.291	N.S.	0.685	N.S.	82.92	N.S.

N.S.=Not significant.

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