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Short Communications

Response of Wheat to Date of Sowing and Nitrogen

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Wheat is the most important staple food crop grown in India and its own outstanding importance as a human food. Fertilizer responsive high yielding dwarf wheat varieties are available. Yield of the wheat can be boost up by adopting the proper agronomical practices including date of sowing and nitrogen fertilizers (Singh *et al.*, 1985). The information on responce of fertilizers and date of sowing is very scanty under heavy black soil of south Gujarat. Therefore, an attempt is made to study the response of irrigated wheat crop to date of sowing and nitrogen fertilizer.

A field experiment was conducted during the winter season of 1985-86 at the college farm of Gujarat Agricultural University, Navsari to study the effect of dates of sowing and nitrogen levels on the growth and yield attributing characters of wheat (Var. J-405). The treatments consisting of all combination of four dates of sowing (15th and 25th November and 5th and 15th December) in main plots and four levels of nitrogen (75, 100, 125 and 150 kg N/ha) as sub-plots were tested in split plot design with four replications. All the plots received uniform dose of 60 kg P_2O_5/ha in the form of single super phosphate at the time of sowing. Nitrogen as per treatments in the form of urea was applied in two splits, half at the time of sowing and remaining half top dressed 25 days after sowing at the time of first irrigation. The soil of experimental plot was clayey in texture containing 0.04% total nitrogen, 28 kg available P_2O_5/ha and 38 kg available K_2O/ha. The pH of the soil was 7.9.

The results indicated that crop sown on 5th December recorded maximum grain yield of 43.90 q/ha which was significantly higher than rest of the sowing dates (Table 1). The increased in grain yield under 5th Dec. Sowing was high which evidently has resulted from remarkably more number of effective tillers/plant, higher earhead length, more number of spikelets and grains/earhead and higher 1000 grain weight (Table 1). These are the important yield attributing characters which showed significant positive correlation with the grain yield and were influenced favourably by environment particularly that of temperature prevailed during the time of sowing and vegetative and reproductive stages. These findings lend support the date reported by Singh *et al.* (1971) and Singh and Dixit (1985). Sowing on 5th December was also found beneficial for harvesting maximum straw yield.

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TABLE 1

Effect of dates of sowing and levels of nitrogen to yield and yield attributing characters of wheat.

Treatments	Effective tillers/ plant	Earhead length (cm)	Number of grains/ earhead	Test weight (g)	Yield (q/ha)		Net ICBR
					Grain	Straw	
Sowing dates							
15th November	2.80	7.41	31.99	42.20	38.54	61.72	
25th November	2.89	7.55	33.58	43.15	40.19	63.68	
5th December	3.10	8.13	35.54	43.46	43.92	68.44	
15th December	2.95	7.80	31.27	42.19	38.80	60.86	
C.D. at 5%	0.07	0.11	1.31	0.75	1.28	2.12	
Nitrogen levels (kg/ha)							
75	2.73	7.45	32.03	41.68	37.76	59.64	-
100	2.92	7.55	32.55	42.21	39.40	62.36	1:1.84
125	2.99	7.93	33.37	43.20	41.75	65.67	1:2.43
150	3.05	7.96	34.43	43.92	42.53	67.03	1:1.74
C.D. at 5%	0.08	0.14	0.83	0.41	8.10	1.83	

Crop fertilizer with 125 kg N/ha yielded significantly higher (42.5 q/ha) over rest of the levels. Higher grain yield recorded with 125 kg N/ha was probably due to positive and significant effect of nitrogen on yield contributing characters viz., test weight, effective tillers, earhead and number of grains/earhead. The results are substantiated with the studies conducted by Singh *et al.* (1985). Similar trend was also observed in case of straw yield of wheat. Maximum net ICBR of 1:2.43 was recorded with 125 kg N/ha and turned out to be profitable among all the levels (Table 1).

Results of one year experimentation indicated that potential production and profit from wheat (J-405) can be obtained by sowing the crop on 5th December with application of 125 kg N/ha.

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