

Response of wheat (*Triticum aestivum*) genotypes to seed rates on dryland

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A field experiment was conducted during the winter seasons of 1987-88 and 1988-89 at Sidhi (a tribal area), to study the response of wheat (*Triticum aestivum* L. emend. Fiori & Paol.) genotypes to seed rates. The treatments consisted of 6 genotypes ('WH 147', 'HD 2189', 'HD 2285', 'Sujata', 'HD 2229' and 'C 306') and 3 seed rates (100, 125 and 150 kg/ha). The experiment was

conducted in randomized block design with 5 replications. The soil was well-drained, sandy loam with pH 7.9, organic carbon 0.56%, available P_2O_5 29.7 kg/ha and available K_2O 285 kg/ha. The crop was sown on 25 October 1987 and 20 October 1988. A basal dose of 30 kg N, 40 kg P_2O_5 and 20 kg K_2O /ha was applied to the crop sown at 10 cm depth in 25 cm-row spacing. One protective irrigation at crown-root-initiation stage was given and at the same time 30 kg N/ha was top-dressed.

'Sujata' wheat gave significantly higher grain yield than rest of the varieties (Table 1). This might be due to drought-resistant nature of the variety. It recorded 1.80, 8.09, 16.85, 17.32 and 38.27 higher grain yield than that of 'HD 2189', 'WH 147', 'HD 2285', 'HD 2229' and 'C 306' respectively in pooled analysis. Singh *et al.* (1990) and Upadhyay and Dubey (1991) also reported varietal response. The seed rate of 125 kg/ha was superior to 150 and 100 kg/ha during both the years. It may be attributed to the higher food materials diverted in the build-up of these characters at the cost of reduced tillering, as also reported by Vaishya and Singh (1981) and Mahajan *et al.* (1991).

There was slight difference in grain yield of seed rate @ 100 and 150 kg/ha during both the years. Interaction effect of variety ×

Table 1. Effect of varieties and seed rates on grain yield of wheat

Treatment	Grain yield (q/ha)		
	1987-88	1988-89	Pooled
<i>Variety (V)</i>			
'WH 147'	12.61	14.33	13.47
'HD 2189'	13.46	15.14	14.30
'HD 2285'	11.87	13.04	12.46
'Sujata'	13.79	15.32	14.56
'HD 2229'	11.78	13.03	12.41
'C 306'	10.08	10.97	10.53
CD (P = 0.05)	0.103	0.280	0.191
<i>Seed rate (S)</i>			
100 kg/ha	11.94	12.88	12.41
125 kg/ha	12.73	14.63	13.68
150 kg/ha	12.12	13.41	12.76
CD (P = 0.05)	0.072	0.199	0.135
<i>Interaction</i>			
V × S	0.180	0.485	0.332

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seed rate was observed significant during both the years. Similar finding was reported by Mahajan *et al.* (1991).

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Effect of seed rate, nitrogen and sowing method on yield of late-sown wheat (*Triticum aestivum*)

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An experiment was conducted during the winter season of 1986–87 at Hisar, to study the effect of seed rate, nitrogen level and sowing method on yield of late wheat (*Triticum aestivum* L. emend. Fiori & Paol.). The soil was sandy loam having 122, 12 and 368 kg/ha available nitrogen, phosphorus and potassium respectively with pH 7–9. Two seed rates (110 and 137.5 kg/ha), 2 N levels (120 and 150 kg/ha) and 4 methods of sowing (22 cm line sowing, 15 cm line sowing, 22 cm cross-sowing and 15 cm cross-sowing) were tested in randomized block design with 3 replications. The sowing was done on 16 December 1986. Four irrigations (1 pre-sowing and 3 after sowing) were given. Rainfall received during crop period was 70.0 mm.

Seed rate and N level did not affect the yield attributes and yield of wheat ('WH 291') under late-sown condition (Table 1). Though the yield was slightly higher with higher seed rate (137.5 kg/ha) over less seed rate (110 kg/ha), the difference was not significant. Moreover, higher seed rate and N level decreased the harvest index. The highest grain yield was obtained with 22 cm cross-sowing owing to more effective tillers, weight of ear, number of fertile spikelets and number of grains/ear. This increase in yield was 11.9, 4.6 and 13.3% higher over 22 cm line sowing, 15 cm line sowing and 15 cm cross-sowing. However, it was significantly higher to only 22 cm line sowing and 15 cm cross-sowing. The harvest index was also higher with 22 cm cross-sowing. Cheema *et*