

RESPONSE OF IRRIGATED WHEAT AT CENTER OF BRAZIL TO PAIRED ROWS PLANTING AT DIFFERENT LEVELS OF NITROGEN

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Introduction

Wheat introduction at irrigated production systems is advantageous, for breaking the cycle of diseases and it is an alternative for crop rotation. In addition, we have great demand of wheat consumption in Brazil. This country imports around 43,4% of consumed wheat, according to Companhia Nacional de Abastecimento (2004). Wheat crop needs to reach high levels of productivity to cover the elevated costs of production.

Irrigated wheat needs to have adequate management of planting and to reach these high levels of productivity (Soesilva et al 2001). The aim of this work was to study the effects of two combined ways of planting and three level of nitrogen on irrigated wheat.

Results and discussion

There was observed significant differences only with 100kg N, between treatments on plant high, however, paired planting showed a trend to have lower plants at all level of nitrogen, when compared to no paired plants (Table 1).

There were significant differences between planting system, except for 100kg N, at size of spikes.

There were differences between planting system, independent of levels of N on productivity. Planting without paired rows showed higher productivity, independent of N levels (Table 1). Paired rows planting leads to higher lateral luminosity and lower plant competition, which probably promoted an increase on size of spikes. However, this kind of planting probably promoted a reduction on size of number of plants per square meter, which did not compensate for a higher tillering rate, showing a yield reduction.

Table 1. Effect of paired rows and nitrogen on plant height several parameters related to yield.

Paired rows	Nitrogen Kg/ha	Plant High (cm)	Size of Espike (cm)	Numb. of espikess	Yield K/ha	PH %	Weight of 1000 grains g
no	80	73,00	9,57	47,00	4436,18	82,03	40,33
no	100	75,67	10,57	51,67	4617,61	81,25	39,83
no	120	72,67	10,10	50,00	4690,88	81,10	41,33
yes	80	71,00	10,37	49,67	4080,46	80,80	42,17
yes	100	71,33	10,57	50,67	3409,36	81,50	40,00
yes	120	71,33	10,53	49,67	3665,04	81,48	41,00
Coefficient of variation		4,2%	2,4%	2,97%	10,1%	0,78%	2,79%
Lower Sign. Diff. (5%)		3,2	0,26	1,55	439	0,78	1,19

Material and Methods

The experiment was carried out at Embrapa Cerrados and wheat was planted on June of 2004. The experimental design was on randomised blocks with three replicates. The irrigation was made by sprinkler irrigation. The levels of N were 80, 100 and 120 kg N/ha. Planting was made on two ways: paired rows and not paired rows and the genotype used was Embrapa 42.



Figura 1. Treatment with paired row.

Acknowledgements

The support of Embrapa Cerrados and Embrapa Wheat are greatly appreciated.

References

- Companhia Nacional de Abastecimento, CONAB, Terceiro Levantamento, fevereiro 2004.
- Só e Silva, M., Sobrinho, J.S., Andrade, J.M.V., Albrecht, J.C. & Cánovas, A.D. (2002). Trigo já é opção para o Brasil Central. Rio de Janeiro. A Lavoura (643) 31-37.