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86/R/WW/6 N and Dcd - W. Wheat

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86/R/WW/6

WINTER WHEAT

N AND DCD

Object: To study the effects of a nitrification inhibitor in combination with different rates and timings of N on yield - New Zealand.

Sponsors: G.A. Rodgers, F.V. Widdowson.

Design: 2 randomised blocks of 26 plots.

Whole plot dimensions: 3.0 x 11.0.

Treatments: All combinations of:-

1. N INHIB Nitrification inhibitor added to nitrogen fertilizer:

NONE	None
DICYANDI	Dicyandiamide at 16 kg, divided equally between applications

2. N TIME Time and division of nitrogen fertilizer:

1111	Quarter of N on each of 13 Mar, 1986, 4 Apr, 28 Apr, 16 May
22--	Half of N on each of 13 Mar, 4 Apr
2-2-	Half of N on each of 13 Mar, 28 Apr
-22-	Half of N on each of 4 Apr, 28 Apr
4---	All of N on 13 Mar
--4-	All of N on 28 Apr

3. N RATE Amount of nitrogen fertilizer applied (kg N):

160	160
240	240

plus one extra treatment

EXTRA

NONE No nitrogen fertilizer or inhibitor (duplicated)

NOTE: Nitrogen was applied as a mixture of urea and ammonium nitrate (28% N).

Basal applications: Weedkillers: Paraquat at 0.60 kg ion in 200 l. Clopyralid at 0.07 kg, bromoxynil octanoate at 0.34 kg, mecoprop at 2.5 kg and isoproturon at 2.1 kg in 200 l applied with the prochloraz and carbendazim. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg. Propiconazole at 0.12 kg in 200 l.

Seed: Avalon, sown at 190 kg.

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Cultivations, etc.: - Heavy spring-tine cultivated: 30 Aug, 1985.
 Paraquat applied: 24 Sept. Heavy spring-tine cultivated, rotary harrowed, seed sown: 1 Oct. Remaining weedkillers with prochloraz and carbendazim applied: 30 Apr, 1986. Propiconazole applied: 26 June. Combine harvested: 22 Aug. Previous crops: W. wheat 1984, w. oats 1985.

NOTE: A green crop sample was taken at the end of June to measure dry matter, ear numbers and N content. The N content of grain was determined.

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

N TIME	1111	22--	2-2-	-22-	4---	--4-	MEAN
N INHIB							
NONE	9.26	9.14	8.90	9.35	8.73	9.34	9.12
DICYANDI	8.89	9.01	9.16	9.16	8.94	9.19	9.06
MEAN	9.08	9.08	9.03	9.26	8.83	9.27	9.09
N RATE	160	240	MEAN				
N INHIB							
NONE	9.00	9.24	9.12				
DICYANDI	8.89	9.24	9.06				
MEAN	8.94	9.24	9.09				
N RATE	160	240	MEAN				
N TIME							
1111	8.96	9.20	9.08				
22--	8.94	9.21	9.08				
2-2-	8.82	9.23	9.03				
-22-	9.03	9.48	9.26				
4---	8.71	8.96	8.83				
--4-	9.18	9.35	9.27				
MEAN	8.94	9.24	9.09				
N INHIB	N RATE	160	240				
NONE	N TIME						
	1111	9.11	9.41				
	22--	8.99	9.30				
	2-2-	8.96	8.83				
	-22-	9.19	9.51				
	4---	8.57	8.88				
	--4-	9.16	9.53				
DICYANDI	1111	8.80	8.98				
	22--	8.89	9.13				
	2-2-	8.69	9.64				
	-22-	8.87	9.45				
	4---	8.84	9.04				
	--4-	9.21	9.18				
NONE	6.04						
GRAND MEAN	8.86						

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GRAIN TONNES/HECTARE

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	N INHIB	N TIME	N RATE	N INHIB N TIME
SED	0.097	0.168	0.097	0.238
TABLE	N INHIB N RATE	N TIME N RATE	N INHIB N TIME N RATE	
SED	0.137	0.238	0.336	

SED FOR COMPARING NONE WITH ANY ITEM IN
N INHIB.N TIME.N RATE TABLE IS 0.291

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	26	0.336	3.8

GRAIN MEAN DM% 76.3

PLOT AREA HARVESTED 0.00251