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# Yields of the Field Experiments 1985

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## 85/R/WW/11 N and Dcd- W. Wheat

### Rothamsted Research

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85/R/WW/11

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 - Summerdells I.

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

Design: 2 randomised blocks of 18 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 28 Feb 1985, 20 Mar, 18 Apr, 16 May
22--	Half of N on each of 28 Feb, 20 Mar
2-2-	Half of N on each of 28 Feb, 18 Apr
-22-	Half of N on each of 20 Mar, 18 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 500 l. Isoproturon at 2.0 kg with mecoprop at 2.0 kg, ioxynil at 0.25 kg and bromoxynil at 0.25 kg in 200 l. Fungicides: Propiconazole at 0.25 kg in 200 l. Propiconazole at 0.12 kg with carbendazim and maneb (as 'Septal' at 2.5 kg) in 200 l. Insecticide: Pirimicarb at 0.14 kg in 200 l.

Seed: Avalon, sown at 170 kg.

Cultivations, etc.:- Discd: 14 Aug, 1984. Paraquat applied, heavy spring-tine cultivated: 19 Sept. Rotary harrowed, seed sown: 27 Sept. Remaining weedkillers applied: 12 Mar, 1985. Propiconazole applied: 3 June. Propiconazole with 'Septal' applied: 2 July. Insecticide applied: 10 July. Combine harvested: 29 Aug. Previous crops: S. barley 1983, w. oats 1984.

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NOTE: Soil cores were taken in February and April for nitrate and ammonium analyses. Plant samples were taken at anthesis for measurements of dry weight, percentage N, N uptake and number of stems per square metre.

GRAIN TONNES/HECTARE

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

N TIME	1111	22--	2-2-	-22-	MEAN
N INHIB					
NONE	9.01	8.41	8.69	8.19	8.58
DICYANDI	8.81	9.14	9.03	8.72	8.93
MEAN	8.91	8.77	8.86	8.45	8.75
N RATE	160	240	MEAN		
N INHIB					
NONE	7.90	9.25	8.58		
DICYANDI	8.32	9.53	8.93		
MEAN	8.11	9.39	8.75		
N RATE	160	240	MEAN		
N TIME					
1111	8.36	9.46	8.91		
22--	8.10	9.44	8.77		
2-2-	8.29	9.44	8.86		
-22-	7.68	9.23	8.45		
MEAN	8.11	9.39	8.75		
		N RATE	160	240	
N INHIB		N TIME			
NONE		1111	8.59	9.43	
		22--	7.69	9.13	
		2-2-	8.04	9.35	
		-22-	7.27	9.11	
DICYANDI		1111	8.13	9.49	
		22--	8.52	9.76	
		2-2-	8.54	9.53	
		-22-	8.09	9.34	
NONE	2.68				
GRAND MEAN	8.08				

85/R/WW/11

GRAIN TONNES/HECTARE

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

TABLE	N INHIB	N TIME	N RATE	N INHIB N TIME
SED	0.128	0.181	0.128	0.257

TABLE	N INHIB N RATE	N TIME N RATE	N INHIB N TIME N RATE
SED	0.181	0.257	0.363

SED FOR COMPARING EXTRA NONE WITH ANY ITEM IN  
N INHIB.N TIME.N RATE TABLE IS 0.314

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

STRATUM	DF	SE	CV%
BLOCK.WP	18	0.363	4.5

GRAIN MEAN DM% 84.9

PLOT AREA HARVESTED 0.00254