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78/R/WW/8 Rates and Times of Applying N - W. Wheat

Rothamsted Research

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78/R/WW/8

WINTER WHEAT

RATES & TIMES OF APPLYING N

Object: To study the effects of applying a range of nitrogen rates before and after ear initiation on the growth and yield of winter wheat - Gt. Field I.

Sponsors: G.N. Thorne, P.J. Taylor, P.J. Welbank.

Design: 4 randomised blocks of 8 plots.

Whole plot dimensions: 4.27 x 13.1.

Treatments: All combinations of:-

1. N DATE Dates of applying nitrogen fertiliser:
 6 MARCH 6 March, before ear initiation
 17 APRIL 17 April, after ear initiation
2. N RATE Rates of applying nitrogen fertiliser (kg N as 'Nitro-Chalk 25'):
 0
 60
 120
 180

Basal applications: Manures: (0:20:20) at 310 kg. Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 4.9 l in 220 l). Fungicide: Triadimefon at 0.13 kg in 220 l.

Seed: Maris Huntsman, sown at 190 kg.

Cultivations, etc.:- Ploughed: 20 Oct, 1977. Heavy spring-tine cultivated and PK applied: 24 Oct. Rotary harrowed: 25 Oct. Seed sown: 26 Oct. Weedkiller applied: 10 May, 1978. Fungicide applied: 15 June. Combine harvested: 4 Sept. Previous crops: Barley 1976, beans 1977.

NOTE: Shoots were counted, apical development observed and lodging scored. Measurements of dry weights of tops and ears, leaf areas, nitrogen contents and shoot lengths were made during the season.

78/R/WW/8

GRAIN TONNES/HECTARE

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

N RATE	0	60	120	180	MEAN
N DATE					
6 MARCH		6.12	7.34	7.54	7.00
17 APRIL		6.34	7.43	8.13	7.30
MEAN	4.31	6.23	7.38	7.83	6.44

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

TABLE	N DATE	N RATE	N DATE N RATE
SED	0.140	0.172	0.243 0.210*

* FOR COMPARING WITH N RATE 0

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

STRATUM	DF	SE	CV%
BLOCK.WP	22	0.343	5.3

GRAIN MEAN DM% 82.3

PLOT AREA HARVESTED 0.00260