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76/S/WW/1 Rates and Times of N and Fungicide - W. Wheat

Rothamsted Research

Rothamsted Research (1977) *76/S/WW/1 Rates and Times of N and Fungicide - W. Wheat* ; Yields Of The Field Experiments 1976, pp 289 - 291 - DOI: <https://doi.org/10.23637/ERADOC-1-15>

76/S/WW/1

WINTER WHEAT

RATES AND TIMES OF N AND FUNGICIDE

Object: To study the effects of rates and times of solid and liquid nitrogen fertilisers and foliar pathogen control on foliar disease incidence and yield of winter wheat - Saxmundham, Grove Plot.

Sponsors: F.V. Widdowson, A. Penny.

Design: Single replicate of 4 x 2 x 2 x 2 fully randomised.

Whole plot dimensions: 6.10 x 3.04.

Treatments: All combinations of:-

1. S N RATE Rates of solid nitrogen fertiliser ('Nitro-Chalk') (kg N):

0	None
50	50
100	100
150	150

2. S N TIME Times of applying solid nitrogen fertiliser:

APRIL	21 April
MAY	18 May

3. L N RATE Rates of liquid nitrogen fertiliser ('Agsol N26' - Urea + NH₄ NO₃) (kg N):

0	None
25+25	25 on 15 June + 25 on 8 July

4. FUNGICIDE Fungicides:

NONE	None
BE+MZ+MB	Benomyl + mancozeb + maneb on 18 May and 15 June

NOTE: Benomyl applied at 0.28 kg with mancozeb plus maneb ('Kascade' at 2.24 kg) in 380 l.

Basal applications: Manures: (20:10:10) at 310 kg. Weedkillers: Methabenzthiazuron at 3.1 kg in 380 l in autumn. Isoproturon at 2.2 kg with mecoprop at 0.63 kg plus ioxynil at 0.21 kg in 340-l in spring. Growth regulator: Chlormequat at 1.7 kg in 340 l.

Seed: Maris Huntsman, sown at 190 kg.

Cultivations, etc.: - Ploughed: 2 Oct, 1975. Seed sown and fertiliser applied: 14 Oct. Autumn weedkiller applied: 15 Oct. Spring weedkiller applied: 25 Mar, 1976. Growth regulator applied: 4 May. Combine harvested: 20 July. Previous crops: Beans 1975, barley 1974.

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GRAIN TONNES/HECTARE

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

ALL PLOTS

S N RATE	0	50	100	150	MEAN
L N RATE					
0	6.15	6.46	6.68	6.86	6.54
25+25	6.27	6.69	6.36	6.73	6.51
MEAN	6.21	6.58	6.52	6.80	6.53

S N RATE	0	50	100	150	MEAN
FUNGCIDE					
NONE	6.33	6.52	6.60	6.61	6.51
BE+MZ+MB	6.10	6.63	6.45	6.99	6.54
MEAN	6.21	6.58	6.52	6.80	6.53

FUNGCIDE	NONE	BE+MZ+MB	MEAN
L N RATE			
0	6.63	6.45	6.54
25+25	6.39	6.64	6.51
MEAN	6.51	6.54	6.53

EXCLUDING S N RATE 0

S N RATE	50	100	150	MEAN
S N TIME				
APRIL	6.89	6.45	7.17	6.84
MAY	6.26	6.59	6.43	6.43
MEAN	6.58	6.52	6.80	6.63

L N RATE	0	25+25	MEAN
S N TIME			
APRIL	6.78	6.89	6.84
MAY	6.56	6.30	6.43
MEAN	6.67	6.59	6.63

FUNGCIDE	NONE	BE+MZ+MB	MEAN
S N TIME			
APRIL	6.61	7.06	6.84
MAY	6.54	6.32	6.43
MEAN	6.57	6.69	6.63

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GRAIN TONNES/HECTARE

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

TABLE	L N RATE	FUNGCIDE	S N RATE	S N TIME
SED	0.138 0.160*	0.138 0.160*	0.196	0.160

TABLE	L N RATE FUNGCIDE	S N RATE S N TIME	S N RATE L N RATE	S N TIME L N RATE
SED	0.196	0.276	0.276	0.226

TABLE	S N RATE FUNGCIDE	S N TIME FUNGCIDE
SED	0.276	0.226

* USE ONLY WITH TABLES EXCLUDING S N RATE 0

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

STRATUM	DF	SE	CV%
WP	13	0.391	6.0

GRAIN MEAN DM% 78.8

PLOT AREA HARVESTED 0.00089