ROTHAMSTED RESEARCH

Yields of the Field Experiments 1978

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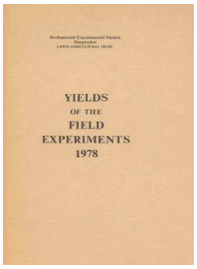

78/S/WW/1 Rates and Times of N and Fungicides - W. Wheat

Rothamsted Research

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78/S/WW/1

WINTER WHEAT

RATES AND TIMES OF N AND FUNGICIDE

Object: To study the effects of fungicides and rates and times of nitrogen fertiliser on the incidence of foliar diseases and on yield of winter wheat - Saxmundham.

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

Design: Half replicate of 4 x 2^4 plus 8 extra plots.

Whole plot dimensions: 6.40 x 2.74.

Treatments: Combinations of:

1. N AUTUMN	Nitrogen fertiliser in autumn (19 Oct, 1977):	
	0	None
	IBDU 1	Isobutylidene diurea at 50 kg N
2. N SPRING	Nitrogen fertiliser in spring (14 Mar, 1978):	
	0	None
	NC 1	'Nitro-Chalk' 25% N at 50 kg N
	NC 2	'Nitro-Chalk' 25% N at 100 kg N
	NC 3	'Nitro-Chalk' 25% N at 150 kg N
3. N SUMMER	Nitrogen fertiliser in summer:	
	0	None
	AG 1	'Agsol 26% N' at 50 kg N. Foliar spray, half on 7 June, half on 21 June
4. FUNGCIDE(1)	Fungicide:	
	0	None
	BN+CA+MA	Benomyl on 18 May, carbendazim + maneb on 7 June and 6 July
5. FUNGCIDE(2)	Fungicide:	
	0	None
	BENODANI	Benodanil on 21 June and on 6 July

plus four extra treatments (duplicated), all given FUNGCIDE(1) and FUNGCIDE(2):

EXTRA	
NCA1NCD2	'Nitro-Chalk' in autumn at 50 kg N, 'Nitro-Chalk' in spring/summer at 100 kg N dressing divided 1/5 at G.S.3, 3/5 at G.S.5, 1/5 at G.S.8.
NCA1NCD3	As previous treatment but spring/summer dressing at 150 kg N
IBA1NCD2	Isobutylidene diurea in autumn at 50 kg N, 'Nitro-Chalk' in spring/summer at 100 kg N dressing divided as above
IBA1NCD3	As previous treatment but spring/summer dressing at 150 kg N

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NOTES: (1) EXTRA nitrogen treatments were applied on the following dates: G.S.3 14 Mar, G.S.5 20 Apr, G.S.8 18 May.
(2) 'FUNGCIDE(1)' Benomyl was applied at 0.28 kg in 280 l and carbendazim at 0.25 kg plus maneb at 1.6 kg in 280 l.
(3) 'FUNGCIDE(2)' Benodanil was applied at 1.1 kg in 280 l.

Basal applications: Manures: Muriate of potash at 250 kg. (0:20:20) at 250 kg. Weedkillers: Isoproturon at 1.8 kg in 450 l. Ioxynil at 0.53 kg with mecoprop at 1.9 kg in 280 l applied with the fungicide and growth regulator (see below). Fungicide: Tridemorph at 0.53 kg. Insecticide: Pirimicarb at 0.14 kg in 280 l. Growth regulator: Chlormequat at 1.7 kg.

Seed: Maris Huntsman, sown at 200 kg.

Cultivations, etc.:- Muriate of potash applied: 21 Sept, 1977. Ploughed: 24 Sept. Harrowed and rolled three times: 12 Oct. PK applied, seed sown, isoproturon applied: 19 Oct. Ioxynil, mecoprop, tridemorph and chlormequat applied: 18 May, 1978. Pirimicarb applied: 3 Aug. Combine harvested: 23 Aug.

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GRAIN TONNES/HECTARE

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

N SPRING / N AUTUMN	0	NC 1	NC 2	NC 3	MEAN
0	2.83	5.20	6.37	6.88	5.32
IBDU 1	3.98	5.90	6.67	7.01	5.89
MEAN	3.40	5.55	6.52	6.94	5.60

N SUMMER / N AUTUMN	0	AG 1	MEAN
0	5.00	5.63	5.32
IBDU 1	5.74	6.04	5.89
MEAN	5.37	5.84	5.60

N SUMMER / N SPRING	0	AG 1	MEAN
0	3.06	3.75	3.40
NC 1	5.18	5.93	5.55
NC 2	6.45	6.58	6.52
NC 3	6.79	7.09	6.94
MEAN	5.37	5.84	5.60

FUNGCIDE(1) / N AUTUMN	0	BN+CA+MA	MEAN
0	5.23	5.41	5.32
IBDU 1	5.80	5.98	5.89
MEAN	5.51	5.69	5.60

FUNGCIDE(1) / N SPRING	0	BN+CA+MA	MEAN
0	3.27	3.54	3.40
NC 1	5.61	5.50	5.55
NC 2	6.40	6.63	6.52
NC 3	6.77	7.11	6.94
MEAN	5.51	5.69	5.60

FUNGCIDE(1) / N SUMMER	0	BN+CA+MA	MEAN
0	5.25	5.49	5.37
AG 1	5.78	5.90	5.84
MEAN	5.51	5.69	5.60

FUNGCIDE(2) / N AUTUMN	0	BENODANI	MEAN
0	5.36	5.27	5.32
IBDU 1	5.97	5.81	5.89
MEAN	5.67	5.54	5.60

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GRAIN TONNES/HECTARE

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

FUNGCIDE(2) N SPRING	0	BENODANI	MEAN
0	3.34	3.47	3.40
NC 1	5.63	5.48	5.55
NC 2	6.56	6.48	6.52
NC 3	7.14	6.75	6.94
MEAN	5.67	5.54	5.60

FUNGCIDE(2) N SUMMER	0	BENODANI	MEAN
0	5.32	5.42	5.37
AG 1	6.01	5.67	5.84
MEAN	5.67	5.54	5.60

FUNGCIDE(2) FUNGCIDE(1)	0	BENODANI	MEAN
0	5.64	5.39	5.51
BN+CA+MA	5.69	5.70	5.69
MEAN	5.67	5.54	5.60

EXTRA	NCA1NCD2	NCA1NCD3	IBA1NCD2	IBA1NCD3	MEAN
	7.27	7.69	6.64	7.52	7.28

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

TABLE	N AUTUMN	N SPRING	N SUMMER	FUNGCIDE(1)
SED	0.093	0.132	0.093	0.093

TABLE	FUNGCIDE(2)	EXTRA	N AUTUMN N SUMMER	N SPRING N SUMMER
SED	0.093	0.263	0.132	0.186

TABLE	N AUTUMN FUNGCIDE(1)	N SPRING FUNGCIDE(1)	N SUMMER FUNGCIDE(1)	N AUTUMN FUNGCIDE(2)
SED	0.132	0.186	0.132	0.132

TABLE	N SPRING FUNGCIDE(2)	N SUMMER FUNGCIDE(2)	FUNGCIDE(1) FUNGCIDE(2)	N AUTUMN N SPRING
SED	0.186	0.132	0.132	0.186

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

STRATUM	DF	SE	CV%
WP	10	0.263	4.4

GRAIN MEAN DM% 79.8

PLOT AREA HARVESTED 0.00098

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