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

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WINTER WHEAT

RATES AND TIMES OF N AND FUNGICIDE

Object: To study the effects of rates, times and forms of nitrogen fertiliser and of two fungicides on the incidence of diseases and on the yields and nitrogen uptake of wheat - Saxmundham: Grove Plot.

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

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

Whole plot dimensions: 2.74 x 6.40.

Treatments: Combinations of:-

1. N AUTUMN Nitrogen fertiliser in autumn (4 Oct, 1978):
 - 0 None
 - IBDU 1 Isobutylidene diurea at 50 kg N
2. N SPRING Nitrogen fertiliser in spring (18 Apr, 1979):
 - 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 12 June, half on 5 July
4. FUNGICIDE(1) Fungicide:
 - 0 None
 - BN+CA+MA Benomyl on 16 May, carbendazim + maneb on 12 June and on 5 July
5. FUNGICIDE(2) Fungicide:
 - 0 None
 - BENODANI Benodanil on 12 June and on 5 July

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

EXTRA

- NCA1NCD2 'Nitro-Chalk' in autumn at 50 kg N, 'Nitro-Chalk' in spring/summer at 100 kg N, dressing divided 1/5 on 6 Mar, 3/5 on 18 Apr, and 1/5 on 16 May
- NCA1NCD3 As previous treatment but 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 150 kg N.

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NOTE: Test fungicides were applied in 280 l. Rates: Benomyl at 0.28 kg, carbendazim at 0.25 kg with maneb at 1.6 kg, benodanil at 1.2 kg.

Basal applications: Manures: (0:14:28) at 190 kg. (0:20:20) at 380 kg, combine drilled. Autumn weedkiller: Isoproturon at 2.5 kg in 220 l. Spring weedkiller: Ioxynil at 0.42 kg and mecoprop at 1.3 kg in 220 l applied with the growth regulator. Fungicide: Tridemorph at 0.53 kg in 280 l. Growth regulator: Chlormequat at 1.7 kg. Aphicide: Pirimicarb at 0.14 kg in 280 l.

Seed: Maris Huntsman, sown at 180 kg.

Cultivations, etc.:— PK applied: 19 Sept, 1978. Seed sown and autumn test N applied: 4 Oct. Autumn weedkiller applied: 5 Oct. Spring weedkiller and growth regulator applied: 15 May, 1979. Basal fungicide applied: 16 May. Basal insecticide applied: 5 July. Harvested: 21 Aug.

NOTE: Plots were assessed for leaf diseases, numbers of ears, and N percentage in grains.

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GRAIN TONNES/HECTARE

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

N SPRING	0	NC 1	NC 2	NC 3	MEAN
N AUTUMN					
0	5.16	7.19	7.98	8.02	7.09
IBDU 1	6.01	7.70	8.29	8.06	7.52
MEAN	5.59	7.45	8.13	8.04	7.30
N SUMMER	0	AG 1	MEAN		
N AUTUMN					
0	6.96	7.22	7.09		
IBDU 1	7.39	7.64	7.52		
MEAN	7.18	7.43	7.30		
N SUMMER	0	AG 1	MEAN		
N SPRING					
0	5.36	5.82	5.59		
NC 1	7.24	7.65	7.45		
NC 2	8.15	8.12	8.13		
NC 3	7.95	8.14	8.04		
MEAN	7.18	7.43	7.30		
FUNGICIDE(1)	0	BN+CA+MA	MEAN		
N AUTUMN					
0	6.97	7.22	7.09		
IBDU 1	7.32	7.71	7.52		
MEAN	7.14	7.46	7.30		

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GRAIN TONNES/HECTARE

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

FUNGCIDE(1)	0	BN+CA+MA	MEAN		
N SPRING					
0	5.64	5.54	5.59		
NC 1	7.21	7.68	7.45		
NC 2	7.91	8.36	8.13		
NC 3	7.82	8.27	8.04		
MEAN	7.14	7.46	7.30		
FUNGCIDE(1)	0	BN+CA+MA	MEAN		
N SUMMER					
0	7.06	7.29	7.18		
AG 1	7.23	7.64	7.43		
MEAN	7.14	7.46	7.30		
FUNGCIDE(2)	0	BENODANI	MEAN		
N AUTUMN					
0	7.12	7.07	7.09		
IBDU 1	7.51	7.52	7.52		
MEAN	7.31	7.30	7.30		
FUNGCIDE(2)	0	BENODANI	MEAN		
N SPRING					
0	5.53	5.64	5.59		
NC 1	7.47	7.42	7.45		
NC 2	8.17	8.10	8.13		
NC 3	8.07	8.02	8.04		
MEAN	7.31	7.30	7.30		
FUNGCIDE(2)	0	BENODANI	MEAN		
N SUMMER					
0	7.16	7.19	7.18		
AG 1	7.46	7.40	7.43		
MEAN	7.31	7.30	7.30		
FUNGCIDE(2)	0	BENODANI	MEAN		
FUNGCIDE(1)					
0	7.18	7.11	7.14		
BN+CA+MA	7.44	7.49	7.46		
MEAN	7.31	7.30	7.30		
EXTRA	NCA1NCD2	NCA1NCD3	IBA1NCD2	IBA1NCD3	MEAN
	8.62	8.54	8.41	8.27	8.46
GRAND MEAN	7.54				

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GRAIN TONNES/HECTARE

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

TABLE	N AUTUMN	N SPRING	N SUMMER	FUNGCIDE(1)
SED	0.092	0.131	0.092	0.092
TABLE	FUNGCIDE(2)	N AUTUMN N SPRING	N AUTUMN N SUMMER	N SPRING N SUMMER
SED	0.092	0.185	0.131	0.185
TABLE	N AUTUMN FUNGCIDE(1)	N SPRING FUNGCIDE(1)	N SUMMER FUNGCIDE(1)	N AUTUMN FUNGCIDE(2)
SED	0.131	0.185	0.131	0.131
TABLE	N SPRING FUNGCIDE(2)	N SUMMER FUNGCIDE(2)	FUNGCIDE(1) FUNGCIDE(2)	EXTRA
SED	0.185	0.131	0.131	0.262

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

STRATUM	DF	SE	CV%
WP	10	0.262	3.5

GRAIN MEAN DM% 80.2

PLOT AREA HARVESTED 0.00098