

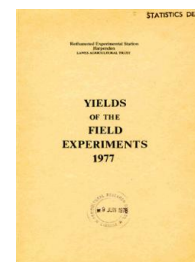
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77/R/B/3 N and Foliar Diseases - Barley

Rothamsted Research

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77/R/B/3

SPRING BARLEY

N AND FOLIAR DISEASES

Object: To study the effects of mildew and brown rust on response to a range of nitrogen rates applied at different times - Long Hoos I/II.

Sponsors: J.F. Jenkyn, M.E. Finney.

Design: Single replicate of 6 x 3 x 2 x 2.

Whole plot dimensions: 4.27 x 9.14.

Treatments: All combinations of:-

1. N RATE Amounts of nitrogen fertiliser (kg N):

25
50
70
90
110
135

2. N TIME Times of applying N:

SB Seedbed (12 Apr, 1976)
TD Top dressed (26 May)
SB/TD Half to seedbed, half top dressed

3. MILDEW F Mildew fungicide:

NONE None
TRIDEMOR Tridemorph on 20 June and 13 July

4. RUST F Rust fungicide:

NONE None
BENODANI Benodanil on 11 July

NOTES: (1) Fungicides were applied in 340 l:-

(a) Tridemorph at 0.53 kg

(b) Benodanil at 1.12 kg with 175 ml 'Citowett'

(2) Sides of plots were separated by a strip of Mazurka barley 2.13 m wide.

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

Seed: Zephyr, sown at 160 kg.

Cultivations, etc.:- Ploughed: 30 Sept, 1976. Spring-tine cultivated, seed sown: 31 Mar, 1977. Weedkillers applied: 26 May. Combine harvested: 27 Aug. Previous crops: Potatoes 1975, wheat 1976.

NOTES: (1) Seedling emergence counts were made.

(2) Mildew and brown rust were assessed throughout the season.

(3) Samples were taken for N analysis.

(4) Ear counts were made before harvest.

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GRAIN TONNES/HECTARE

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

N TIME N RATE	SB	TD	SB/TD	MEAN
25	4.99	5.00	5.00	4.99
50	5.18	5.54	5.60	5.44
70	5.48	5.49	5.71	5.56
90	5.54	5.66	6.09	5.76
110	5.73	5.48	6.05	5.75
135	5.77	5.75	6.08	5.86
MEAN	5.45	5.49	5.75	5.56

MILDEW F N RATE	NONE	TRIDEMOR	MEAN
25	4.90	5.09	4.99
50	5.34	5.55	5.44
70	5.33	5.79	5.56
90	5.49	6.03	5.76
110	5.49	6.01	5.75
135	5.59	6.14	5.86
MEAN	5.36	5.77	5.56

MILDEW F N TIME	NONE	TRIDEMOR	MEAN
SB	5.30	5.59	5.45
TD	5.23	5.75	5.49
SB/TD	5.54	5.96	5.75
MEAN	5.36	5.77	5.56

RUST F N RATE	NONE	BENODANI	MEAN
25	5.07	4.92	4.99
50	5.56	5.33	5.44
70	5.64	5.48	5.56
90	5.73	5.79	5.76
110	5.71	5.79	5.75
135	5.76	5.96	5.86
MEAN	5.58	5.55	5.56

RUST F N TIME	NONE	BENODANI	MEAN
SB	5.41	5.49	5.45
TD	5.50	5.48	5.49
SB/TD	5.83	5.68	5.75
MEAN	5.58	5.55	5.56

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GRAIN TONNES/HECTARE

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

RUST F	NONE	BENODANI	MEAN
MILDEW F			
NONE	5.39	5.33	5.36
TRIDEMOR	5.77	5.77	5.77
MEAN	5.58	5.55	5.56

N TIME	SB		TD		SB/TD	
	NONE	TRIDEMOR	NONE	TRIDEMOR	NONE	TRIDEMOR
MILDEW F						
N RATE						
25	4.72	5.26	4.98	5.01	5.00	5.00
50	5.22	5.15	5.25	5.84	5.54	5.67
70	5.34	5.62	5.14	5.84	5.52	5.90
90	5.41	5.66	5.44	5.89	5.63	6.55
110	5.52	5.94	5.06	5.89	5.90	6.19
135	5.61	5.92	5.48	6.01	5.69	6.47

N TIME	SB		TD		SB/TD	
	NONE	BENODANI	NONE	BENODANI	NONE	BENODANI
RUST F						
N RATE						
25	5.16	4.82	5.21	4.79	4.85	5.15
50	5.17	5.20	5.69	5.40	5.82	5.39
70	5.55	5.41	5.57	5.41	5.79	5.63
90	5.35	5.72	5.56	5.76	6.28	5.90
110	5.67	5.78	5.33	5.63	6.12	5.97
135	5.54	5.99	5.62	5.87	6.13	6.03

MILDEW F	NONE		TRIDEMOR	
	NONE	BENODANI	NONE	BENODANI
RUST F				
N RATE				
25	4.97	4.82	5.16	5.02
50	5.48	5.19	5.64	5.47
70	5.33	5.34	5.95	5.63
90	5.56	5.43	5.91	6.16
110	5.45	5.54	5.97	6.05
135	5.54	5.65	5.99	6.28

MILDEW F	NONE		TRIDEMOR	
	NONE	BENODANI	NONE	BENODANI
RUST F				
N TIME				
SB	5.30	5.31	5.52	5.66
TD	5.23	5.23	5.77	5.73
SB/TD	5.64	5.45	6.02	5.91

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GRAIN TONNES/HECTARE

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

TABLE	N RATE	N TIME	MILDEW F	RUST F
SED	0.093	0.066	0.054	0.054
TABLE	N RATE N TIME	N RATE MILDEW F	N TIME MILDEW F	N RATE RUST F
SED	0.161	0.131	0.093	0.131
TABLE	N TIME RUST F	MILDEW F RUST F	N RATE N TIME MILDEW F	N RATE N TIME RUST F
SED	0.093	0.076	0.228	0.228
TABLE	N RATE MILDEW F RUST F	N TIME MILDEW F RUST F		
SED	0.186	0.131		

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

STRATUM	DF	SE	CV%
WP	10	0.228	4.1

GRAIN MEAN DM% 77.0

PLOT AREA HARVESTED 0.00195