ROTHAMSTED RESEARCH

Yields of the Field Experiments 1978

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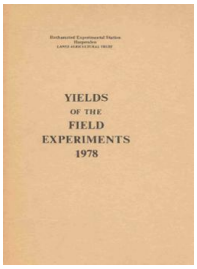

78/S/C/1 Varieties, N and Ccc - Barley

Rothamsted Research

Rothamsted Research (1979) *78/S/C/1 Varieties, N and Ccc - Barley ;* Yields Of The Field Experiments 1978, pp 326 - 335 **- DOI: https://doi.org/10.23637/ERADOC-1-30**

78/S/CS/1

VARIETIES, N AND CCC

Object: To study the effects of varieties, fungicides, and rates and times of applying nitrogen fertiliser on the incidence of foliar diseases and on yield of barley - Saxmundham, Oldershaw's and Garner's plots.

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

The 13th year, barley.

For previous years see 66/C/30(t), 67/C/23(t), 68/C/39, 69-70/S/CS/1, 71/S/CS/1(t), 72/S/CS/1(t) and 73-77/S/CS/1.

Design: A single replicate of 2^6 in 4 blocks of 4 plots each split into half and quarter plots, plus one additional plot per block similarly split. Treatments to wheat 1966-1976 have been ignored.

Whole plot dimensions: 5.49 x 40.2.

Treatments (cumulative to 1977): All combinations of:-

Whole plots

1. VARIETY	Varieties:-	
	JULIA	
	WING	
2. MILDFUNG	Fungicides to control mildew:	
	NONE	None
	ETH+TRI	Ethirimol seed dressing + tridemorph foliar spray (0.53 kg applied with the weedkillers on 18 May, 1978)

Half plots

3. S N RATE	Rates of solid nitrogen fertiliser (kg N):	
	50	
	100	
4. S N TIME	Times of applying solid nitrogen fertiliser:	
	SEEDBED	Seedbed on 6 Apr
	TOPDRESS	Top dressed on 18 May

Quarter plots

5. L N RATE	Rates of liquid nitrogen fertiliser (kg N):	
	0	None
	50	25 on 7 June + 25 on 21 June
6. RUSTFUNG	Fungicide to control rust:	
	NONE	None
	BENODANI	Benodanil foliar spray (1.12 kg in 280 l on 21 June and 6 July)

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XTRA WMR — Plus one additional whole plot per block sown to variety Wing, seed dressed ethirimol, given foliar sprays of tridemorph and benodanil and testing all combinations of:

Half plots

1. S N — Rates of solid nitrogen fertiliser (kg N):

25+25	25 to seedbed + 25 top dressed
50+50	50 to seedbed + 50 top dressed

2. GRTH REG — Growth regulator:

NONE	None
MEP+ETH	Mepiquat chloride + ethephon ('BAS 09800W' at 2.0 l in 250 l on 8 June)

Quarter plots

3. L N — Rates of liquid nitrogen fertiliser (kg N):

0	None
25+25	25 on 7 June + 25 on 21 June

Basal applications: Manures: (7.5:17.5:17.5) at 250 kg. Weedkillers: Ioxynil at 0.42 kg with mecoprop at 1.3 kg in 220 l.

Seed: sown at 190 kg.

Cultivations, etc.:- Ploughed: 14 Sept, 1977. NPK applied, seed sown: 7 Apr, 1978. Weedkillers applied: 18 May. Combine harvested: 5 Sept.

GRAIN TONNES/HECTARE

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

MILDFUNG / VARIETY	NONE	ETH+TRI	MEAN
JULIA	5.27	5.37	5.32
WING	5.18	5.37	5.28
MEAN	5.23	5.37	5.30

S N RATE / VARIETY	50	100	MEAN
JULIA	5.38	5.26	5.32
WING	5.31	5.24	5.28
MEAN	5.34	5.25	5.30

S N RATE / MILDFUNG	50	100	MEAN
NONE	5.27	5.19	5.23
ETH+TRI	5.42	5.32	5.37
MEAN	5.34	5.25	5.30

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GRAIN TONNES/HECTARE

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

S N TIME VARIETY	SEEDBED	TOPDRESS	MEAN
JULIA	5.67	4.97	5.32
WING	5.60	4.95	5.28
MEAN	5.63	4.96	5.30

S N TIME MILDFUNG	SEEDBED	TOPDRESS	MEAN
NONE	5.56	4.90	5.23
ETH+TRI	5.71	5.03	5.37
MEAN	5.63	4.96	5.30

S N TIME S N RATE	SEEDBED	TOPDRESS	MEAN
50	5.60	5.09	5.34
100	5.67	4.84	5.25
MEAN	5.63	4.96	5.30

L N RATE VARIETY	0	50	MEAN
JULIA	5.43	5.21	5.32
WING	5.37	5.18	5.28
MEAN	5.40	5.20	5.30

L N RATE MILDFUNG	0	50	MEAN
NONE	5.31	5.14	5.23
ETH+TRI	5.49	5.25	5.37
MEAN	5.40	5.20	5.30

L N RATE S N RATE	0	50	MEAN
50	5.42	5.27	5.34
100	5.38	5.12	5.25
MEAN	5.40	5.20	5.30

L N RATE S N TIME	0	50	MEAN
SEEDBED	5.75	5.51	5.63
TOPDRESS	5.04	4.88	4.96
MEAN	5.40	5.20	5.30

RUSTFUNG VARIETY	NONE	BENODANI	MEAN
JULIA	5.19	5.45	5.32
WING	5.03	5.52	5.28
MEAN	5.11	5.48	5.30

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GRAIN TONNES/HECTARE

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

RUSTFUNG MILDFUNG	NONE	BENODANI	MEAN
NONE	5.06	5.40	5.23
ETH+TRI	5.17	5.57	5.37
MEAN	5.11	5.48	5.30

RUSTFUNG S N RATE	NONE	BENODANI	MEAN
50	5.18	5.51	5.34
100	5.05	5.46	5.25
MEAN	5.11	5.48	5.30

RUSTFUNG S N TIME	NONE	BENODANI	MEAN
SEEDBED	5.43	5.84	5.63
TOPDRESS	4.79	5.13	4.96
MEAN	5.11	5.48	5.30

RUSTFUNG L N RATE	NONE	BENODANI	MEAN
0	5.21	5.59	5.40
50	5.02	5.38	5.20
MEAN	5.11	5.48	5.30

MILDFUNG	NONE		ETH+TRI	
S N RATE	50	100	50	100
VARIETY				
JULIA	5.32	5.22	5.43	5.30
WING	5.21	5.15	5.41	5.34

MILDFUNG	NONE		ETH+TRI	
S N TIME	SEEDBED	TOPDRESS	SEEDBED	TOPDRESS
VARIETY				
JULIA	5.64	4.91	5.70	5.04
WING	5.47	4.89	5.73	5.02

S N RATE	50		100	
S N TIME	SEEDBED	TOPDRESS	SEEDBED	TOPDRESS
VARIETY				
JULIA	5.65	5.11	5.68	4.84
WING	5.55	5.07	5.65	4.84

S N RATE	50		100	
S N TIME	SEEDBED	TOPDRESS	SEEDBED	TOPDRESS
MILDFUNG				
NONE	5.57	4.96	5.54	4.84
ETH+TRI	5.63	5.21	5.79	4.85

MILDFUNG	NONE		ETH+TRI	
L N RATE	0	50	0	50
VARIETY				
JULIA	5.37	5.18	5.48	5.25
WING	5.25	5.11	5.49	5.25

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GRAIN TONNES/HECTARE

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

S N RATE	50		100	
L N RATE	0	50	0	50
VARIETY				
JULIA	5.46	5.29	5.39	5.13
WING	5.37	5.25	5.37	5.11

S N RATE	50		100	
L N RATE	0	50	0	50
MILDFUNG				
NONE	5.32	5.22	5.30	5.07
ETH+TRI	5.52	5.33	5.46	5.18

S N TIME	SEEDBED		TOPDRESS	
L N RATE	0	50	0	50
VARIETY				
JULIA	5.82	5.52	5.04	4.91
WING	5.69	5.51	5.05	4.85

S N TIME	SEEDBED		TOPDRESS	
L N RATE	0	50	0	50
MILDFUNG				
NONE	5.66	5.45	4.96	4.84
ETH+TRI	5.85	5.58	5.13	4.93

S N TIME	SEEDBED		TOPDRESS	
L N RATE	0	50	0	50
S N RATE				
50	5.70	5.51	5.14	5.04
100	5.81	5.52	4.95	4.73

MILDFUNG	NONE		ETH+TRI	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
VARIETY				
JULIA	5.16	5.38	5.22	5.51
WING	4.95	5.42	5.11	5.63

S N RATE	50		100	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
VARIETY				
JULIA	5.25	5.50	5.13	5.39
WING	5.10	5.52	4.96	5.52

S N RATE	50		100	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
MILDFUNG				
NONE	5.13	5.40	4.98	5.40
ETH+TRI	5.22	5.62	5.12	5.52

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GRAIN TONNES/HECTARE

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

S N TIME	SEEDBED		TOPDRESS	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
VARIETY				
JULIA	5.52	5.81	4.87	5.08
WING	5.35	5.86	4.71	5.19

S N TIME	SEEDBED		TOPDRESS	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
MILDFUNG				
NONE	5.38	5.73	4.73	5.06
ETH+TRI	5.49	5.94	4.85	5.20

S N TIME	SEEDBED		TOPDRESS	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
S N RATE				
50	5.41	5.80	4.95	5.23
100	5.46	5.87	4.64	5.04

L N RATE	0		50	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
VARIETY				
JULIA	5.34	5.51	5.04	5.38
WING	5.07	5.67	4.99	5.37

L N RATE	0		50	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
MILDFUNG				
NONE	5.09	5.53	5.02	5.27
ETH+TRI	5.32	5.65	5.02	5.49

L N RATE	0		50	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
S N RATE				
50	5.28	5.56	5.07	5.47
100	5.14	5.63	4.96	5.29

L N RATE	0		50	
RUSTFUNG	NONE	BENODANI	NONE	BENODANI
S N TIME				
SEEDBED	5.55	5.96	5.31	5.71
TOPDRESS	4.86	5.23	4.72	5.04

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GRAIN TONNES/HECTARE

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

TABLE	VARIETY	MILDFUNG	S N RATE	S N TIME
SED	0.109	0.109	0.046	0.046

TABLE	L N RATE	RUSTFUNG	VARIETY MILDFUNG	VARIETY S N RATE
SED	0.039	0.039	0.154	0.118
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY				0.065

TABLE	MILDFUNG S N RATE	VARIETY S N TIME	MILDFUNG S N TIME	S N RATE S N TIME
SED	0.118	0.118	0.118	0.065
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY		0.065		
MILDFUNG	0.065		0.065	
S N RATE				0.118
S N TIME				0.118

TABLE	VARIETY L N RATE	MILDFUNG L N RATE	S N RATE L N RATE	S N TIME L N RATE
SED	0.116	0.116	0.060	0.060
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY	0.055			
MILDFUNG		0.055		
S N RATE			0.055	
S N TIME				0.055

TABLE	VARIETY RUSTFUNG	MILDFUNG RUSTFUNG	S N RATE RUSTFUNG	S N TIME RUSTFUNG
SED	0.116	0.116	0.060	0.060
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY	0.055			
MILDFUNG		0.055		
S N RATE			0.055	
S N TIME				0.055

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GRAIN TONNES/HECTARE

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

TABLE	L N RATE RUSTFUNG	VARIETY MILDFUNG S N RATE	VARIETY MILDFUNG S N TIME	VARIETY S N RATE S N TIME
SED	0.055	0.167	0.167	0.167
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY				0.092
L N RATE	0.060			
RUSTFUNG	0.060			
VARIETY.MILDFUNG		0.092	0.092	

TABLE	MILDFUNG S N RATE S N TIME	VARIETY MILDFUNG L N RATE	VARIETY S N RATE L N RATE	MILDFUNG S N RATE L N RATE
SED	0.167	0.164	0.130	0.130
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY			0.085	
MILDFUNG	0.092			0.085
VARIETY.MILDFUNG		0.078		
VARIETY.S N RATE			0.078	
MILDFUNG.S N RATE				0.078

TABLE	VARIETY S N TIME L N RATE	MILDFUNG S N TIME L N RATE	S N RATE S N TIME L N RATE	VARIETY MILDFUNG RUSTFUNG
SED	0.130	0.130	0.085	0.164
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY	0.085			
MILDFUNG		0.085		
S N RATE			0.130	
S N TIME			0.130	
VARIETY.MILDFUNG				0.078
VARIETY.S N TIME	0.078			
MILDFUNG.S N TIME		0.078		
S N RATE.S N TIME			0.078	

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GRAIN TONNES/HECTARE

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

TABLE	VARIETY S N RATE RUSTFUNG	MILDFUNG S N RATE RUSTFUNG	VARIETY S N TIME RUSTFUNG	MILDFUNG S N TIME RUSTFUNG
SED	0.130	0.130	0.130	0.130
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY	0.085		0.085	
MILDFUNG		0.085		0.085
VARIETY.S N RATE	0.078			
MILDFUNG.S N RATE		0.078		
VARIETY.S N TIME			0.078	
MILDFUNG.S N TIME				0.078

TABLE	S N RATE S N TIME RUSTFUNG	VARIETY L N RATE RUSTFUNG	MILDFUNG L N RATE RUSTFUNG	S N RATE L N RATE RUSTFUNG
SED	0.085	0.130	0.130	0.130
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
VARIETY		0.078		
MILDFUNG			0.078	
S N RATE	0.130			0.078
S N TIME	0.130			
L N RATE				0.085
RUSTFUNG				0.085
S N RATE.S N TIME	0.078			
VARIETY.L N RATE		0.085		
MILDFUNG.L N RATE			0.085	
VARIETY.RUSTFUNG		0.085		
MILDFUNG.RUSTFUNG			0.085	

TABLE	S N TIME L N RATE RUSTFUNG
SED	0.130
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
S N TIME	0.078
L N RATE	0.085
RUSTFUNG	0.085

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

STRATUM	DF	SE	CV%
BLOCK.WP	4	0.218	4.1
BLOCK.WP.HP	5	0.130	2.5
BLOCK.WP.HP.QP	10	0.155	2.9

GRAIN MEAN DM% 83.9

SUB PLOT AREA HARVESTED 0.00479

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EXTRA

GRAIN TONNES/HECTARE

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

L N S N	0	25+25	MEAN
25+25	5.63	5.61	5.62
50+50	5.90	5.49	5.69
MEAN	5.76	5.55	5.66

GRTH REG S N	NONE	MEP+ETH	MEAN
25+25	5.60	5.64	5.62
50+50	5.74	5.64	5.69
MEAN	5.67	5.64	5.66

GRTH REG L N	NONE	MEP+ETH	MEAN
0	5.76	5.77	5.76
25+25	5.59	5.51	5.55
MEAN	5.67	5.64	5.66

L N	0		25+25	
GRTH REG	NONE	MEP+ETH	NONE	MEP+ETH
S N				
25+25	5.63	5.63	5.57	5.65
50+50	5.89	5.91	5.60	5.37

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

TABLE	S N	L N	GRTH REG	S N L N
SED	0.175	0.095	0.175	0.199
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
S N				0.134

TABLE	S N GRTH REG	L N GRTH REG	S N L N GRTH REG
SED	0.247	0.199	0.281
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
S N	0.208		0.247
GRTH REG	0.208	0.134	0.247
S N.GRTH REG			0.189

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

STRATUM	DF	SE	CV%
BLOCK.WP.HP.QP	4	0.189	3.3

GRAIN MEAN DM% 83.1

SUB PLOT AREA HARVESTED 0.00479

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