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73/S/BS/1 - Varieties, N & Fungicide - Spring Barley

Rothamsted Research

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73/S/BS/1

SPRING BARLEY

VARIETIES, N AND FUNGICIDE

Object: To study the effects of a range of nitrogen levels, applied to seedbed or as a top dressing, on the yield of three barley varieties. The effects of a fungicide against brown rust are also studied - Saxmundham, Grove Plot.

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

Design: 3 randomised blocks of 9 plots split into 2.

Whole plot dimensions: 2.43 x 12.2. Area harvested: 0.00045.

Treatments: All combinations of:-

Whole plots:	1. Varieties:	VARIETY
	Julia	Julia
	Mazurka	Mazurka
	Midas	Midas
	2. Nitrogen fertiliser (kg N):	NRATE
	50	50
	100	100
	150	150
	3. Time of applying nitrogen:	NTIME
	All to seedbed on 20 Mar	Seedbed
	Half to seedbed, half top dressed on 22 May	SB/TD
	All top dressed on 22 May	Topdress
Sub plots:	4. Fungicide spray against brown rust:	FUNGICIDE
	None	None
	BAS3170F applied at 1.4 kg a.i. in 340 l on 19 June repeated on 10 July	BAS3170F

Basal applications: Manures: (0:20:20) at 280 kg. Weedkiller: Dichlorprop and MCPA ('Mephetol plus' at 5.6 l in 340 l). Fungicide: Tridemorph ('Calixin' at 0.7 l) applied with the weedkiller.

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Seed: Dressed with ethirimol, sown at 190 kg.

Cultivations, etc.: - Ploughed: 27 Oct, 1972. PK applied, seed sown: 21 Mar, 1973. Weedkiller and fungicide applied: 22 May. Cut by hand: 15 Aug. Previous crops: Barley 1971, 1972.

NOTE: Brown rust (*Puccinia hordei*) and mildew (*Erysiphe graminis*) were assessed on 16 July.

Standard errors per plot. Grain, tonnes/hectare:

Whole plot: 0.248 or 4.9% (6 d.f.)

Sub plot: 0.274 or 5.5% (8 d.f.)

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TABLES OF MEANS

GRAIN: TONS/HECTARE

VARIETY	NRADE			NTIME			FUNGICIDE		
	50	100	150	Seedbed	S/ID	Top dress	None	MS3170F	None
Julia	4.37	5.59	5.47	4.90	5.22	5.30	5.01	5.27	5.14
Mazurka	3.97	4.87	5.34	4.79	4.72	4.68	4.64	4.82	4.73
Midas	4.55	5.36	5.54	5.17	5.24	5.03	4.95	5.41	5.15
			NRADE						
			50	4.28	4.33	4.29	4.23	4.36	4.30
			100	5.22	5.46	5.13	5.06	5.49	5.27
			150	5.37	5.38	5.60	5.25	5.65	5.45
					NTIME				
					Seedbed		4.92	4.99	4.95
					S/ID		4.99	5.13	5.06
					Topdress		4.63	5.39	5.01
Mean							4.85	5.17	5.01

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TABLES OF MEANS

GRAIN: TONNES/HECTARE

STANDARD ERRORS OF DIFFERENCES

VARIETY	NRATE	NTIME	FUNGCIDE	VARIETY NRATE	VARIETY NTIME	NRATE NTIME
0.117	0.117	0.117	0.075	0.202	0.202	0.202
				VARIETY FUNGCIDE	NRATE FUNGCIDE	NTIME FUNGCIDE
				0.148	0.148	0.148
Except when comparing means with same level of				0.129	0.129	0.129
		VARIETY NRATE NTIME				

Mean D.M. % 87.8

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STRAW: TONNES/HECTARE

VARIETY	NRATE			NTIME			FUNGICIDE		Mean
	50	100	150	Seedbed	SB/TD	Top dress	None	BAS3170F	
Julia	3.80	4.79	5.11	4.70	4.59	4.40	4.51	4.62	4.56
Mazurka	3.84	4.82	5.30	4.81	4.86	4.30	4.67	4.64	4.65
Midas	4.01	4.93	5.20	4.96	4.67	4.52	4.88	4.55	4.77
				NRATE					
			50	4.01	3.88	3.75	3.84	3.92	3.88
			100	4.91	5.03	4.61	4.91	4.79	4.85
			150	5.55	5.20	4.86	5.31	5.10	5.20
				NTIME					
				Seedbed			4.94	4.70	4.82
				SB/TD			4.78	4.63	4.70
				Topdress			4.34	4.47	4.41
Mean							4.69	4.60	4.64

Mean D.M. % 88.5