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76/R/B/5 Sowing Dates and Pathogen Control - Barley

Rothamsted Research

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76/R/R/5

SPRING BARLEY

SOWING DATES AND PATHOGEN CONTROL

Object: To study the effects of aphid, virus and fungus control on pathogens and yield of barley sown on two dates - Gt. Harpenden II.

Sponsors: R.T. Plumb, J.F. Jenkyn.

Design: 3 blocks of 2 x 2 x 2 x 2, randomisation restricted.

Whole plot dimensions: 6.40 x 15.2.

Treatments: All combinations of:-

1. SOW DATE Dates of sowing:

4 MAR	4 March, 1976
13 APR	13 April

2. FUNGICIDE Fungicide:

NONE	None
E+T+B	Ethirimol seed dressing; tridemorph and benodanil sprays

3. APHICIDE(1) Aphicide to seedbed:

NONE	None
PHORATE	Phorate at 5 kg as granules

4. APHICIDE(2) Aphicide on 4 June:

NONE	None
MENAZON	Merazon ('Saphi-col' at 0.7 l in 450 l)

NOTES: (1) Fungicides applied:-

Tridemorph at 0.53 kg in 450 l on 27 May and with benodanil on 7 July. Benodanil at 1.12 kg with 175 ml 'Citowett' in 450-l.

(2) The second application of fungicides was applied to SOW DATE 13 APR only.

Basal applications: Manures: (20:14:14) at 310 kg, combine drilled. Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 5.6 l in 220 l).

Seed: Julia, sown at 160 kg.

Cultivations, etc.: Heavy spring-tine cultivated twice: 4 Nov, 1975. Deep-tine cultivated twice: 13, 14 Nov. Heavy spring-tine cultivated: 1 Mar, 1976. Power harrowed for early sowing: 4 Mar. Power harrowed for late sowing: 13 Apr. Weedkiller applied: 10 May. Combine harvested: 23 July. Previous crops: Beans 1974, potatoes 1975.

NOTE: Emergence counts were made for both sowings. Mildew was assessed on two occasions, aphids on five and viruses once. Tiller counts were made on two occasions in July.

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GRAIN TONNES/HECTARE

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

FUNGICIDE	NONE	E+T+B	MEAN
SOW DATE			
4 MAR	4.82	5.47	5.15
13 APR	3.06	3.55	3.30
MEAN	3.94	4.51	4.23
APHICIDE(1)	NONE	PHORATE	MEAN
SOW DATE			
4 MAR	4.87	5.42	5.15
13 APR	3.17	3.44	3.30
MEAN	4.02	4.43	4.23
APHICIDE(1)	NONE	PHORATE	MEAN
FUNGICIDE			
NONE	3.71	4.17	3.94
E+T+B	4.33	4.69	4.51
MEAN	4.02	4.43	4.23
APHICIDE(2)	NONE	MENAZON	MEAN
SOW DATE			
4 MAR	4.98	5.31	5.15
13 APR	3.06	3.55	3.30
MEAN	4.02	4.43	4.23
APHICIDE(2)	NONE	MENAZON	MEAN
FUNGICIDE			
NONE	3.70	4.18	3.94
E+T+B	4.34	4.68	4.51
MEAN	4.02	4.43	4.23
APHICIDE(2)	NONE	MENAZON	MEAN
APHICIDE(1)			
NONE	3.76	4.28	4.02
PHORATE	4.28	4.58	4.43
MEAN	4.02	4.43	4.23
FUNGICIDE	NONE	E+T+B	
APHICIDE(1)	NONE	PHORATE	
SOW DATE			
4 MAR	4.55	5.09	5.19
13 APR	2.86	3.25	3.47
FUNGICIDE	NONE	E+T+B	
APHICIDE(2)	NONE	MENAZON	
SOW DATE			
4 MAR	4.61	5.03	5.35
13 APR	2.78	3.33	3.33

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GRAIN TONNES/HECTARE

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

APHICIDE(1)	NONE		PHORATE	
APHICIDE(2)	NONE	MENAZON	NONE	MENAZON
SOW DATE				
4 MAR	4.63	5.12	5.34	5.51
13 APR	2.90	3.44	3.22	3.66

APHICIDE(1)	NONE		PHORATE	
APHICIDE(2)	NONE	MENAZON	NONE	MENAZON
FUNGCIDE				
NONE	3.44	3.98	3.96	4.39
E+T+B	4.09	4.58	4.60	4.78

APHICIDE(1)	NONE		PHORATE	
APHICIDE(2)	NONE	MENAZON	NONE	MENAZON
SOW DATE FUNGCIDE				
4 MAR	NONE	4.31	4.80	4.92
	E+T+B	4.95	5.44	5.75
13 APR	NONE	2.57	3.15	2.99
	E+T+B	3.22	3.72	3.45

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

TABLE	SOW DATE	FUNGCIDE	APHICIDE(1)	APHICIDE(2)
SED	0.075	0.075	0.075	0.075

TABLE	SOW DATE	SOW DATE	FUNGCIDE	SOW DATE
	FUNGCIDE	APHICIDE(1)	APHICIDE(1)	APHICIDE(2)
SED	0.106	0.106	0.106	0.106

TABLE	FUNGCIDE	APHICIDE(1)	SOW DATE	SOW DATE
	APHICIDE(2)	APHICIDE(2)	FUNGCIDE	FUNGCIDE
			APHICIDE(1)	APHICIDE(2)
SED	0.106	0.106	0.150	0.150

TABLE	SOW DATE	FUNGCIDE	SOW DATE
	APHICIDE(1)	APHICIDE(1)	FUNGCIDE
	APHICIDE(2)	APHICIDE(2)	APHICIDE(1)
			APHICIDE(2)
SED	0.150	0.150	0.212

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

STRATUM	DF	SE	CV%
BLOCK.WP	30	0.260	6.2
GRAIN MEAN DM%	85.0		
PLOT AREA HARVESTED	0.00260		