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82/W/B/1 Mildew Study - Winter & Spring Barley

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82/W/B/1

WINTER & SPRING BARLEY

MILDEW STUDY

Object: To study the effects of fungicides applied to w. and s. barley on the incidence of mildew and on yield and whether these effects are influenced by neighbouring treatments - Woburn, Far Field I.

Sponsor: D.W. Hollomon.

Design: W. barley: 2 blocks of 12 plots split into 2
S. barley: 2 blocks of 12 plots

Whole plot dimensions: 6.0 x 8.0.

Treatments to W. BARLEY: All combinations of:-

Whole plots

1. SD WB Seed dressings to w. barley:
 NONE None
 TRI+FUB Triadimenol + fuberidazole
2. FS WB Foliar sprays to w. barley applied 14 Apr, 1982:
 NONE None
 FENPROP Fenpropimorph at 0.79 kg in 280 l
 PROPICON Propiconazole at 0.12 kg in 280 l
3. SD SB Seed dressings to one adjacent plot of s. barley, other
 adjacent plot given no fungicides:
 NONE None
 TRI+FUB Triadimenol + fuberidazole

Sub plots

4. POSITION Position of w. barley plots in relation to s. barley plots
 testing seed dressing:
 S WEST South west
 N EAST North east

Treatments to S. BARLEY: All combinations of:-

1. SD SB Seed dressings to s. barley:
 NONE None
 TRI+FUB Triadimenol + fuberidazole
2. SD WB Seed dressings to both adjacent plots of w. barley:
 NONE None
 TRI+FUB Triadimenol + fuberidazole

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3. FS WB Foliar sprays to both adjacent plots of w. barley, none to s. barley:

NONE	None
FENPROP	Fenpropimorph as above
PROPICON	Propiconazole as above

Standard applications: Manures: N at 160 kg as 'Nitro-Chalk' to s. and w. barley. Weedkillers: Dicamba with mecoprop and MCPA (as 'Poly-Farmon' at 4.9 l) in 280 l to s. barley only.

Seed: W. barley: Maris Otter, sown at 190 kg.
S. barley: Golden Promise, sown at 160 kg.

Cultivations, etc.: - Heavy spring-tine cultivated three times for w. barley: twice 17 Oct, 1981, once 28 Oct. Spring-tine cultivated with crumbler attached for w. barley: 19 Oct. Deep-tine cultivated for w. and s. barley: 23 Oct. W. barley seed sown with rotary cultivator and drill attached together: 3 Nov. Heavy spring-tine cultivated for s. barley: 25 Mar, 1982. N applied for w. and s. barley, spring-tine cultivated with crumbler attached for s. barley: 26 Mar. S. barley, seed sown: 27 Mar. Weedkillers applied for s. barley: 17 May. W. barley combine harvested: 28 July. S. barley combine harvested: 11 Aug. Previous crops: W. oats 1980, potatoes 1981.

NOTE: The incidence of barley powdery mildew (*Erysiphe graminis* f. sp. *hordei*) and leaf blotch (*Rhynchosporium secalis*) was measured for w. barley in April, and powdery mildew on s. barley in May, June and July. The sensitivity of powdery mildew to the fungicides was measured on w. barley in April, s. barley once in May and once in June.

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WINTER BARLEY

GRAIN TONNES/HECTARE

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

SD WB	NONE	TRI+FUB	MEAN
SD SB			
NONE	5.91	6.42	6.16
TRI+FUB	5.83	6.03	5.93
MEAN	5.87	6.22	6.05

FS WB	NONE	FENPROP	PROPICON	MEAN
SD SB				
NONE	6.17	6.17	6.14	6.16
TRI+FUB	5.90	5.84	6.06	5.93
MEAN	6.03	6.01	6.10	6.05

FS WB	NONE	FENPROP	PROPICON	MEAN
SD WB				
NONE	5.85	5.70	6.05	5.87
TRI+FUB	6.21	6.31	6.15	6.22
MEAN	6.03	6.01	6.10	6.05

POSITION	S WEST	N EAST	MEAN
SD SB			
NONE	6.24	6.09	6.16
TRI+FUB	6.09	5.77	5.93
MEAN	6.16	5.93	6.05

POSITION	S WEST	N EAST	MEAN
SD WB			
NONE	6.02	5.73	5.87
TRI+FUB	6.31	6.13	6.22
MEAN	6.16	5.93	6.05

POSITION	S WEST	N EAST	MEAN
FS WB			
NONE	6.24	5.83	6.03
FENPROP	6.02	6.00	6.01
PROPICON	6.24	5.96	6.10
MEAN	6.16	5.93	6.05

FS WB	NONE	TRI+FUB	FENPROP	TRI+FUB	PROPICON	TRI+FUB
SD SB	NONE		NONE		NONE	
SD WB						
NONE	5.87	5.84	5.78	5.63	6.07	6.04
TRI+FUB	6.47	5.95	6.57	6.06	6.21	6.08

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WINTER BARLEY

GRAIN TONNES/HECTARE

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

FS WB POSITION	NONE S WEST	N EAST	FENPROP S WEST	N EAST	PROPICON S WEST	N EAST
SD WB NONE	6.10	5.61	5.82	5.59	6.13	5.97
TRI+FUB	6.38	6.04	6.22	6.41	6.34	5.95

SD SB POSITION	NONE S WEST	N EAST	TRI+FUB S WEST	N EAST
SD WB NONE	6.05	5.77	5.99	5.68
TRI+FUB	6.42	6.41	6.20	5.86

SD SB POSITION	NONE S WEST	N EAST	TRI+FUB S WEST	N EAST
FS WB NONE	6.32	6.02	6.16	5.63
FENPROP	6.21	6.14	5.83	5.86
PROPICON	6.18	6.10	6.29	5.83

SD SB POSITION	NONE S WEST	N EAST	TRI+FUB S WEST	N EAST
SD WB FS WB NONE	NONE	6.08	5.66	6.12
FENPROP	6.00	5.57	5.64	5.62
PROPICON	6.06	6.08	6.20	5.87
TRI+FUB NONE	6.56	6.38	6.20	5.71
FENPROP	6.42	6.72	6.02	6.09
PROPICON	6.30	6.12	6.39	5.78

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

TABLE	SD WB	FS WB	SD SB	POSITION
SED	0.098	0.120	0.098	0.087

TABLE	SD WB FS WB	SD WB SD SB	FS WB SD SB	SD WB POSITION
SED	0.170	0.139	0.170	0.131
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SD WB				0.123

TABLE	FS WB POSITION	SD SB POSITION	SD WB FS WB SD SB	SD WB FS WB POSITION
SED	0.160	0.131	0.240	0.227
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
FS WB	0.151			
SD SB		0.123		
SD WB.FS WB				0.213

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WINTER BARLEY

GRAIN TONNES/HECTARE

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

TABLE	SD WB	FS WB	SD WB
	SD SB	SD SB	FS WB
	POSITION	POSITION	SD SB POSITION
SED	0.185	0.227	0.321
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
SD WB.SD SB	0.174		
FS WB.SD SB		0.213	
SD WB.FS WB.SD SB			0.301

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

STRATUM	DF	SE	CV%
BLOCK.WP	11	0.240	4.0
BLOCK.WP.SP	12	0.301	5.0

GRAIN MEAN DM% 85.2

SUB PLOT AREA HARVESTED 0.00230

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SPRING BARLEY

GRAIN TONNES/HECTARE

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

SD WB	NONE	TRI+FUB	MEAN				
SD SB							
NONE	5.97	5.60	5.79				
TRI+FUB	5.53	5.46	5.50				
MEAN	5.75	5.53	5.64				
FS WB	NONE	FENPROP	PROPICON	MEAN			
SD SB							
NONE	5.87	5.40	6.09	5.79			
TRI+FUB	4.99	6.33	5.17	5.50			
MEAN	5.43	5.87	5.63	5.64			
FS WB	NONE	FENPROP	PROPICON	MEAN			
SD WB							
NONE	5.78	5.75	5.73	5.75			
TRI+FUB	5.07	5.99	5.53	5.53			
MEAN	5.43	5.87	5.63	5.64			
SD WB	NONE	FENPROP	PROPICON	TRI+FUB			
FS WB	NONE	FENPROP	PROPICON	NONE	FENPROP	PROPICON	
SD SB							
NONE	6.48	5.02	6.42	5.25	5.78	5.76	
TRI+FUB	5.09	6.48	5.03	4.89	6.19	5.30	

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

TABLE	SD SB	SD WB	FS WB	SD SB SD WB
-----	-----	-----	-----	-----
SED	0.248	0.248	0.304	0.351
TABLE	SD SB FS WB	SD WB FS WB	SD SB SD WB FS WB	
-----	-----	-----	-----	
SED	0.430	0.430	0.608	

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

STRATUM	DF	SE	CV%
BLOCK.WP	11	0.608	10.8
GRAIN MEAN DM%	88.8		
PLOT AREA HARVESTED	0.00220		