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77/R/B/8 Effects of Mildew Sources on Disease Control - Barley

Rothamsted Research

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77/R/B/8

SPRING BARLEY

EFFECTS OF MILDEW SOURCES ON DISEASE CONTROL

Object: To study the effects of nearby sources of mildew on control by fungicides applied at a range of times - Black Horse I.

Sponsors: J.F. Jenkyn, A. Bainbridge.

Design: 3 randomised blocks of 3 plots split into 6.

Whole plot dimensions: 22.9 x 29.9.

Treatments: All combinations of:-

Whole plots

1. MILDSRCE Mildew source:
- | | |
|-------|---|
| NONE | None (seed treated ethirimol, crop sprayed tridemorph, on 9 June, 1977, 4 July) |
| EARLY | Early (tridemorph only on 9 June, 4 July) |
| FULL | Full (no mildew control) |

Sub plots

2. MILDCONT Times of applying mildew control:

ED	Ethirimol seed dressing
	Tridemorph spray on:
T S 1	31 May
T S 2	9 June
T S 3	20 June
T S 4	24 June
T S 5	29 June

NOTES: (1) The whole plot treatments were applied to a strip of crop 6.4 m wide at the ends of all sub plots. There were no discards between sub plots (0.6 m fallow paths only). Whole plots and the sides of sets of six sub plots were separated by strips of crop 17 m wide, seed treated ethirimol, crop sprayed tridemorph at 0.53 kg in 340 l on 4 July.

(2) Treatment tridemorph sprays were applied at 0.53 kg in 340 l.

Basal applications: Manures: (20:14:14) at 470 kg, combine drilled. Weedkillers: Ioxynil at 0.53 kg with mecoprop at 1.6 kg in 220 l.

Seed: Julia, sown at 160 kg.

Cultivations, etc.: - Ploughed: 14 Oct, 1976. Spring-tine cultivated: 4 Mar, 1977. Seed sown: 7 Mar. Weedkillers applied: 15 May. Combine harvested: 26 Aug. Previous crops: Barley 1975 and 1976.

NOTE: Seedling counts were made and mildew was assessed on two occasions.

77/R/B/8
 GRAIN TONNES/HECTARE
 SUBPLOTS

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

MILDCONT MILDSRCE	ED	T S 1	T S 2	T S 3	T S 4	T S 5	MEAN
NONE	5.73	5.81	5.78	5.86	5.84	5.40	5.73
EARLY	4.97	5.49	5.71	5.23	5.27	5.11	5.30
FULL	5.53	5.96	5.57	5.59	5.75	5.26	5.61
MEAN	5.41	5.75	5.69	5.56	5.62	5.26	5.55

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

TABLE	MILDSRCE	MILDCONT	MILDSRCE MILDCONT
SED	0.191	0.155	0.311
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:			
MILDSRCE			0.269

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

STRATUM	DF	SE	CV%
BLOCK.WP	4	0.234	4.2
BLOCK.WP.SP	30	0.329	5.9

GRAIN MEAN DM% 79.1

SUB PLOT AREA HARVESTED 0.00163

WHOLE PLOTS

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

MILDSRCE	NONE	EARLY	FULL	MEAN
	5.64	5.13	5.22	5.33

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

TABLE	MILDSRCE
SED	0.095

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

STRATUM	DF	SE	CV%
BLOCK.WP	4	0.116	2.2

GRAIN MEAN DM% 77.6

PLOT AREA HARVESTED 0.00611