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88/R/CS/302 Eyespot Resistance to Mbc - W. Wheat

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88/R/CS/302

EYESPOT RESISTANCE TO MBC

Object: To study the development of resistance to MBC fungicides in eyespot and the ability of resistant strains to survive, spread and infect - Meadow.

Sponsors: G.L. Bateman, B.D.L. Fitt.

The fourth year, w. wheat.

For previous years see 85-87/R/CS/302.

Design: 2 randomised blocks of 4 plots split into 6.

Whole plot dimensions: 12.0 x 24.0.

Treatments: All combinations of:-

Whole plots

1. **FUNGICIDE** Fungicides applied cumulatively to 1985, 1986 and 1987 treatments:

NONE	None
CARB	Carbendazim at 0.25 kg
PRO	Prochloraz at 0.40 kg
CARB+PRO	Carbendazim at 0.15 kg + prochloraz at 0.40 kg

Sub plots

2. **EYE INOC** Eyespot inoculum, applied in first year only:

NATURAL	Natural background population (duplicated)
W 19R 1S	Inoculated with wheat strains in proportion 19 resistant to one sensitive
W 1R 19S	As above but one resistant to 19 sensitive
R 19R 1S	Inoculated with rye strains, 19 resistant to one sensitive
R 1R 19S	As above but one resistant to 19 sensitive

NOTES: (1) Fungicide treatments were applied in 200 l on 10 Dec, 1987 and 11 Apr, 1988.

(2) The eyespot inoculum was colonised on oat seed and this was broadcast in October, 1984.

Basal applications: Manures: 'Nitram' at 120 kg and later at 480 kg.
Weedkillers: Paraquat at 0.60 kg ion in 200 l. Chlortoluron at 3.5 kg with bromoxynil at 0.19 kg and ioxynil at 0.19 kg in 200 l. Fluroxypyr at 0.20 kg with clopyralid at 0.07 kg and bromoxynil at 0.34 kg in 200 l.

Seed: Avalon, sown at 180 kg.

88/R/CS/302

Cultivations, etc.:- Paraquat applied: 25 Sept, 1987. Cultivated by rotary grubber: 28 Sept. Rotary harrowed, seed sown: 5 Oct. Chlortoluron, bromoxynil and ioxynil applied: 6 Nov. First N applied: 29 Feb, 1988. Second N applied: 21 Apr. Fluroxypyr, clopyralid and bromoxynil applied: 26 Apr. Combine harvested: 23 Aug.

NOTE: Eyespot and sharp eyespot were assessed in July.

GRAIN TONNES/HECTARE

***** Tables of means *****

EYE INOC FUNGICIDE	NATURAL	W 19R 1S	W 1R 19S	R 19R 1S	R 1R 19S	Mean
NONE	5.97	5.98	6.06	5.32	6.02	5.89
CARB	6.15	5.90	5.81	5.64	6.17	5.97
PRO	6.72	6.19	6.60	6.65	6.36	6.54
CARB+PRO	6.39	6.60	6.43	6.75	6.64	6.53
Mean	6.31	6.17	6.23	6.09	6.30	6.23

*** Standard errors of differences of means ***

EYE INOC	FUNGICIDE	EYE INOC
0.179	0.359	min.rep
0.155	0.311	max-min

EYE INOC

max-min NATURAL v any of the remainder
min.rep any of the remainder

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	24	0.359	5.8

GRAIN MEAN DM% 85.1

SUB PLOT AREA HARVESTED 0.00134