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## Yields of the Field Experiments 1989

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

#### Rothamsted Research

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89/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.

**Sponsor:** G.L. Bateman.

The fifth year, w. wheat.

For previous years see 85-88/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, 1987 and 1988 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 15 Nov, 1988 and 29 Mar, 1989.

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

**Basal applications:** Manures: (0:18:36) at 920 kg. 'Nitram' at 580 kg. Weedkillers: Glyphosate at 0.27 kg in 200 l. Chlortoluron at 3.5 kg in 200 l. Metsulfuron-methyl at 6.0 g in 400 l.

**Seed:** Avalon, sown at 190 kg.

**Cultivations, etc.:-** Rotary cultivated: 6 Sept, 1988. PK applied: 22 Sept. Glyphosate applied: 1 Oct. Heavy spring-tine cultivated: 14 Oct. Cultivated with rotary grubber, seed sown: 17 Oct. Chlortoluron applied: 21 Oct. N applied: 15 Apr, 1989. Metsulfuron-methyl applied: 3 May. Combine harvested: 3 Aug.

**NOTE:** Eyespot and sharp eyespot were assessed in July.

89/R/CS/302

GRAIN TONNES/HECTARE

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

EYE INOC FUNGICIDE	NATURAL	W 19R 1S	W 1R 19S	R 19R 1S	R 1R 19S	Mean
NONE	7.29	6.95	7.01	6.85	7.50	7.15
CARB	7.09	7.05	7.37	6.91	7.10	7.10
PRO	6.85	6.78	7.01	7.27	7.27	7.01
CARB+PRO	7.55	6.73	7.51	7.38	7.92	7.44
Mean	7.19	6.88	7.22	7.10	7.45	7.17

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

EYE INOC	FUNGICIDE*
	EYE INOC
0.226	0.451 min.rep
0.195	0.391 max-min

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

\* Within the same level of FUNGICIDE only

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	24	0.451	6.3
GRAIN MEAN DM%	85.9		
SUB PLOT AREA HARVESTED	0.00138		