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## Yields of the Field Experiments 1986

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

#### Rothamsted Research

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86/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 second year, w. wheat.

For previous year see 85/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. FUNGCIDE Fungicides applied cumulatively to 1985 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 31 Oct, 1985 repeated on 1 May, 1986.

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

Basal applications: Manures: (5:14:30) at 340 kg. 'Nitram' at 600 kg. Weedkillers: Paraquat at 0.60 kg ion in 200 l. Clopyralid at 0.07 kg, bromoxynil octanoate at 0.34 kg, mecoprop at 2.5 kg and isoproturon at 2.0 kg in 200 l.

Seed: Avalon, sown at 190 kg.

Cultivations, etc.:- Paraquat applied: 23 Sept, 1985. Heavy spring-tine cultivated twice: 26 Sept. NPK applied, disced, rotary harrowed, seed sown: 4 Oct. N applied: 24 Apr, 1986. Weedkillers applied: 25 Apr. Combine harvested: 14 Aug.

NOTE: Eyespot and sharp eyespot were assessed in April and July. Eyespot was characterized according to type and MBC resistance.

86/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	8.79	8.99	8.05	8.67	9.40	8.78
CARB	8.60	8.57	8.35	8.38	8.75	8.54
PRO	8.23	8.26	8.71	8.51	8.44	8.40
CARB+PRO	9.11	8.23	9.13	8.46	9.27	8.89
MEAN	8.68	8.51	8.56	8.50	8.96	8.65

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

TABLE	EYE INOC	FUNGICIDE* EYE INOC	
SED	0.185	0.370	MIN REP
	0.160	0.321	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	DF	SE	CV%
BLOCK.WP.SP	24	0.370	4.3
GRAIN MEAN DM%	84.8		
SUB PLOT AREA HARVESTED	0.00139		