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## Yields of the Field Experiments 1993

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

#### Rothamsted Research

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93/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 ninth year, w. wheat.

For previous years see 85-92/R/CS/302.

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

**Whole plot dimensions:** 12.0 x 24.0.

**Treatments:** All combinations of:-

Whole plots

1. <b>FUNGICIDE</b>	Fungicides applied cumulatively 1985-93:
NONE	None
CARB	Carbendazim at 0.25 kg
PRO	Prochloraz at 0.40 kg from 1985 to 1992, 0.50 kg in 1993
CARB+PRO	Carbendazim at 0.25 kg + prochloraz at 0.40 kg from 1985 to 1992, 0.50 kg in 1993

Sub plots

2. <b>EYE INOC</b>	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

**NOTE:** The eyespot inoculum was colonised on oat seed and this was broadcast in October, 1984.

**Experimental diary:**

- 13-Aug-92 : B : Deep-tine cultivated with vibrating tines 60 cm apart and 45 cm deep.
- 08-Sep-92 : B : Ploughed, furrow pressed.
- 29-Sep-92 : B : Rotary harrowed, Mercia, dressed Cerevax, drilled at 380 seeds per square metre.
- 08-Dec-92 : T : **FUNGICIDE** CARB: Tripart Defensor FL at 0.50 l in 200 l.
- : T : **FUNGICIDE** PRO: Sportak 45 at 1.1 l in 200 l.
- : T : **FUNGICIDE** CARB+PRO: Tripart Defensor FL at 0.50 l and Sportak 45 at 1.1 l in 200 l.

93/R/CS/302

**Experimental diary:**

10-Feb-93 : B : Panther at 2.0 l in 200 l.  
 08-Mar-93 : B : 34.5% N at 120 kg.  
 15-Apr-93 : T : **FUNGCIDE** CARB: Tripart Defensor FL at 0.50 l in 200 l.  
           : T : **FUNGCIDE** PRO: Sportak 45 at 1.1 l in 200 l.  
           : T : **FUNGCIDE** CARB+PRO: Tripart Defensor FL at 0.50 l and  
                   Sportak 45 at 1.1 l in 200 l.  
 21-Apr-93 : B : 34.5% N at 370 kg.  
 13-May-93 : B : 34.5% N at 120 kg.  
 18-May-93 : B : Starane 2 at 0.50 l with Codacide Oil at 2.5 l in 200 l.  
 25-May-93 : B : Commando at 3.0 l in 70 l.  
 16-Aug-93 : B : Combine harvested.

**NOTE:** Eyespot and sharp eyespot were assessed on plants sampled in early July. Isolates of the eyespot fungus were identified by type (W and R) and assessed for resistance to carbendazim.

**GRAIN TONNES/HECTARE**

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

<b>EYE INOC FUNGCIDE</b>	NATURAL	W 19R 1S	W 1R 19S	R 19R 1S	R 1R 19S	Mean
NONE	7.54	7.78	7.74	7.09	7.28	7.50
CARB	7.20	7.49	7.11	7.40	7.58	7.33
PRO	6.90	7.29	7.44	7.61	7.71	7.31
CARB+PRO	7.82	7.39	7.61	8.03	7.95	7.77
Mean	7.36	7.49	7.48	7.53	7.63	7.48

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

<b>EYE INOC</b>	<b>FUNGCIDE*</b>
0.230	0.460 min.rep
0.199	0.399 max-min

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

\* Within the same level of **FUNGCIDE** only

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP.SP	24	0.460	6.2
GRAIN MEAN DM%	86.2		
SUB PLOT AREA HARVESTED	0.00137		