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## Yields of the Field Experiments 1997

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

#### Rothamsted Research

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97/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 13th year, w. wheat.

For previous years see 85-93,95-96/R/CS/302

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

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

**Sub-plot dimensions:** 4.5 x 6.0.

**Treatments:** All combinations of:-

Whole plots

1. <b>FUNGICIDE</b>	Fungicide applied cumulatively 1985-93 and 1995-97:
NONE	None
CARB	Carbendazim at 0.25 kg
PRO	Prochloraz at 0.40 kg (0.50 kg in 1993, 1995-1997)
CARB+PRO	Carbendazim and prochloraz as above

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 inoculum was colonized on oat seed and broadcast in October, 1984.

**Experimental diary:**

19-Sep-96 : B : Ploughed and furrow pressed.  
03-Oct-96 : B : Rotary harrowed, Hereward, dressed Beret Gold, drilled at 380 seeds per m<sup>2</sup>.  
05-Dec-96 : B : Isoproturon 500 at 2.6 l with Stomp 400 SC at 3.1 l in 200 l.  
11-Mar-97 : B : 34.5% N at 118 kg.  
20-Mar-97 : T : **FUNGICIDE** CARB+PRO: Barclay Eyetak at 1.1 l with Tripart Defensor FL at 0.5 l in 200 l.  
          : T : **FUNGICIDE** PRO: Barclay Eyetak at 1.1 l in 200 l.

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**Experimental diary:**

20-Mar-97 : T : FUNGCIDE CARB: Tripart Defensor FL at 0.5 l in 200 l.  
 04-Apr-97 : T : 34.5% N at 463 kg.  
 16-Apr-97 : T : FUNGCIDE CARB+PRO: Barclay Eyetak at 1.1 l with Tripart  
 Defensor FL at 0.5 l in 200 l.  
           : T : FUNGCIDE PRO: Barclay Eyetak at 1.1 l in 200 l.  
           : T : FUNGCIDE CARB: Tripart Defensor FL at 0.5 l in 200 l.  
 18-Apr-97 : B : Starane 2 at 0.75 l with Barclay Holdup at 2.3 l in 300 l.  
 18-Aug-97 : B : Combine harvested.

**NOTE:** Plant samples were taken in July from **EYE INOC NATURAL** plots for assessment of stem base diseases.

**GRAIN TONNES/HECTARE**

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

EYE INOC FUNGCIDE	NATURAL	W 19R 1S	W 1R 19S	R 19R 1S	R 1R 19S	Mean
NONE	4.94	5.77	3.64	4.56	5.75	4.93
CARB	4.78	5.13	5.01	5.34	5.16	5.04
PRO	5.20	4.27	5.41	5.46	5.46	5.17
CARB+PRO	5.62	5.28	4.98	4.95	6.13	5.43
Mean	5.13	5.11	4.76	5.08	5.63	5.14

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

EYE INOC	FUNGCIDE*	EYE INOC
0.299	0.598	min.rep
0.259	0.518	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	0.598	11.6
GRAIN MEAN DM%	88.1		
SUB-PLOT AREA HARVESTED	0.00144		