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## Yields of the Field Experiments 1998

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

#### Rothamsted Research

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98/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 14th year, w. wheat.

For previous years see 85-93,95-97/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 1995-98: |
| NONE                | None  |
| CARB                | Carbendazim at 0.25 kg                              |
| PRO                 | Prochloraz at 0.40 kg (0.50 kg in 1993, 1995-1998)  |
| 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:**

04-Oct-97 : B : Ploughed.  
08-Oct-97 : B : Harrowed, rotary harrowed, Hereward, dressed Anchor, drilled at 380 seeds per m<sup>2</sup>.  
05-Dec-97 : B : Part: Unite A at 0.125 l with Unite B at 1.0 l and Adder at 1.0 l in 200 l.  
13-Jan-98 : B : Completed: Unite A at 0.125 l with Unite B at 1.0 l and LI-700 at 1.0 l in 200 l.  
16-Feb-98 : B : 34.5% N at 120 kg.

99/R/CS/302

**Experimental diary:**

16-Mar-98 : 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.  
 14-Apr-98 : B : 34.5% N at 460 kg.  
 27-Apr-98 : T : **FUNGCIDE** PRO: Barclay Eyetak at 1.1 l in 200 l.  
 : T : **FUNGCIDE** CARB: Campbell's Carbendazim 50 % Flowable at 0.5 l in 200 l.  
 : T : **FUNGCIDE** CARB+PRO: Barclay Eyetak at 1.1 l with Tripart Defensor FL at 0.5 l in 200 l.  
 28-Apr-98 : B : Ally at 20 g with Cheetah Super at 0.75 l, Starane 2 at 0.7 l and Chiltern Cropoil at 1.0 l in 200 l.  
 03-Jul-98 : B : Policur at 0.3 l in 100 l.  
 05-Aug-98 : B : Alpha Glyphogan at 3.0 l in 200 l.  
 11-Aug-98 : B : Combine harvested.

**GRAIN TONNES/HECTARE**

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

| <b>EYE INOC</b> | NATURAL | W 19R 1S | W 1R 19S | R 19R 1S | R 1R 19S | Mean |
|-----------------|---------|----------|----------|----------|----------|------|
| <b>FUNGCIDE</b> |         |          |          |          |          |      |
| NONE            | 7.49    | 7.79     | 6.67     | 6.44     | 7.41     | 7.22 |
| CARB            | 6.55    | 6.57     | 6.57     | 6.45     | 7.03     | 6.62 |
| PRO             | 7.99    | 7.76     | 8.06     | 8.42     | 7.77     | 8.00 |
| CARB+PRO        | 7.88    | 7.98     | 7.76     | 7.43     | 8.11     | 7.84 |
| Mean            | 7.48    | 7.52     | 7.27     | 7.19     | 7.58     | 7.42 |

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

| <b>EYE INOC</b> | <b>FUNGCIDE*</b> |         |
|-----------------|------------------|---------|
|                 | <b>EYE INOC</b>  |         |
| 0.269           | 0.538            | min.rep |
| 0.233           | 0.446            | 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   | 0.538                   | 7.3     |
| GRAIN MEAN DM% | 90.6 |                         |         |
|                |      | SUB-PLOT AREA HARVESTED | 0.00138 |