

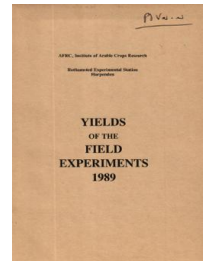
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89/R/CS/302 Eyespot Resistance to Mbc - W. Wheat

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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 FUNGIDE	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	FUNGIDE*
	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 FUNGIDE 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