

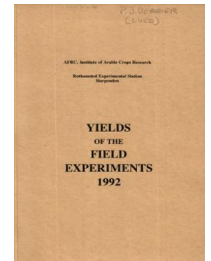
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92/R/CS/302 Eyespot Resistance to Mbc - W. Wheat

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92/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 eighth year, w. wheat.

For previous years see 85-91/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 1985-92:

NONE	None
CARB	Carbendazim at 0.25 kg
PRO	Prochloraz at 0.40 kg
CARB+PRO	Carbendazim at 0.25 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

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

Experimental diary:

28-Aug-91 : B : Straw chopped.
03-Sep-91 : B : PK as(0:16:36) at 1040 kg.
06-Sep-91 : B : Dolomite at 5.0 t.
24-Sep-91 : B : Ploughed, furrow pressed.
26-Sep-91 : B : Rotary harrowed. Mercia drilled at 160 kg, rolled.
16-Nov-91 : B : Pinnacle at 5.0 l in 200 l.
21-Nov-91 : T : **FUNGICIDE** CARB: Bavistin FL at 0.50 l in 200 l.
 : T : **FUNGICIDE** PRO: Sportak 45 at 0.90 l in 200 l.
 : T : **FUNGICIDE** CARB+PRO: Bavistin FL at 0.50 l in 200 l and Sportak 45 at 0.90 l in 200 l, applied separately.
27-Feb-92 : B : 34.5% N at 120 kg.

92/R/CS/302

Experimental diary:

06-Apr-92 : B : 34.5% N at 460 kg.
 20-Apr-92 : B : Harmony M at 0.06 kg and Starane 2 at 0.75 l in 200 l.
 05-May-92 : T : **FUNGICIDE** CARB: Bavistin FL at 0.50 l in 200 l.
 : T : **FUNGICIDE** PRO: Sportak 45 at 0.90 l in 200 l.
 : T : **FUNGICIDE** CARB+PRO: Bavistin FL at 0.50 l in 200 l and
 Sportak 45 at 0.90 l in 200 l, applied separately.
 29-Jul-92 : B : Combine harvested.

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

GRAIN TONNES/HECTARE

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

EYE INOC	NATURAL	W 19R 1S	W 1R 19S	R 19R 1S	R 1R 19S	Mean
FUNGICIDE						
NONE	5.86	5.91	5.91	6.18	5.45	5.86
CARB	5.52	5.91	5.63	5.38	5.64	5.60
PRO	6.02	5.98	5.96	5.93	6.59	6.09
CARB+PRO	7.16	6.99	6.81	6.83	6.79	6.95
Mean	6.14	6.20	6.08	6.08	6.12	6.13

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

EYE INOC	FUNGICIDE*
	EYE INOC
0.167	0.335 min.rep
0.145	0.290 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	d.f.	s.e.	cv%
BLOCK.WP	3	0.412	6.7
BLOCK.WP.SP	24	0.335	5.5

GRAIN MEAN DM% 88.8

SUB PLOT AREA HARVESTED 0.00138