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

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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. FUNGICIDE	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. 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:

- 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 *****

EYE INOC	NATURAL	W 19R 1S	W 1R 19S	R 19R 1S	R 1R 19S	Mean
FUNGCIDE						
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 ***

EYE INOC	FUNGCIDE*
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		