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ROTHAMSTED RESEARCH

Yields of the Field Experiments 1994

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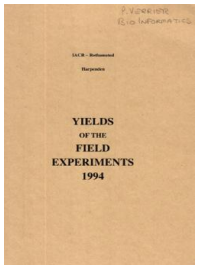

94/R/CS/331 Take-all Inoculation - W. Wheat, W. Oats

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94/R/CS/331

TAKE-ALL INOCULATION

Object: To compare a range of methods of artificially inoculating take-all (*Gaeumannomyces graminis*), to assess the residual effects of a seed treatment and to relate amounts of disease established to the yield and grain quality of w. wheat - Great Harpenden I.

Sponsors: D. Hornby, G.L. Bateman, R.J. Gutteridge.

The sixth year, w. wheat, w. oats.

For previous years see 89-93/R/CS/331

Design: 4 randomised blocks of 9 plots.

Whole plot dimensions: 3.0 x 22.0.

Treatments:

INOC+SDT	Methods of inoculating take-all to w. wheat in the first year (1989), none since, plus levels of seed treatment in the fifth year (1993) to control take-all:
NONE O W	None (w. oats 1994, alternating with w. wheat)
NONE W O	None (w. wheat 1994, alternating with w. oats)
NONE W W	None (continuous w. wheat)
I PRE PL	Infective inoculum applied to soil surface pre-ploughing
I PRE SO	Infective inoculum applied by fertilizer drill to 10 cm depth before rotary harrowing and sowing wheat
I CD	Infective inoculum drilled with the seed
SEEDTR 0	No seed treatment
SEEDTR 1	Seed treatment at 100 g a.i.
SEEDTR 2	Seed treatment at 150 g a.i.

NOTE: Experimental seed treatment was applied at a.i. rates per 100 kg w. wheat (cv. Riband) seed drilled.

Experimental diary:

13-Sep-93 : B : Ploughed.
21-Oct-93 : B : Heavy spring-tine cultivated.
22-Oct-93 : **T** : **INOC+SDT** NONE O W: Image, dressed Panoctine Plus, drilled at 350 seeds per m^2.
: **T** : **INOC+SDT** All plots except NONE O W: Mercia, dressed Cerevax, drilled at 380 seeds per m^2.
26-Oct-93 : **T** : **INOC+SDT** NONE O W: Glytex at 2.25 kg in 200 l.
21-Dec-93 : B : Draza at 5.5 kg.
09-Mar-94 : B : 34.5% N at 118 kg.
19-Apr-94 : B : 34.5% N at 448 kg.
09-May-94 : **T** : **INOC+SDT** All plots except NONE O W: Ally at 30 g with Cheetah Super at 3.0 l and Starane 2 at 0.75 l in 200 l.
: B : Halo at 2.0 l with New 5C Cycocel at 2.5 l in 200 l.
20-May-94 : B : 34.5% N at 100 kg.

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94/R/CS/331

Experimental diary:

17-Jun-94 : B : Hostathion at 840 ml in 200 l.
23-Jun-94 : B : Cyclone at 1.0 l with Mallard 750 EC at 0.5 l in 200 l.
15-Aug-94 : **T** : **INOC+SDT** All plots except NONE O W: Combine harvested.
23-Aug-94 : **T** : **INOC+SDT** NONE O W: Combine harvested.

NOTE: Plant samples were taken in July for take-all assessments.

GRAIN TONNES/HECTARE

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

INOC+SDT	
NONE W O	8.71
NONE W W	8.29
I PRE PL	8.48
I PRE SO	8.56
I CD	8.02
SEEDTR 0	8.51
SEEDTR 1	8.19
SEEDTR 2	8.40
Mean	8.40

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

INOC+SDT
0.295

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	21	0.418	5.0

GRAIN MEAN DM% 84.9

PLOT AREA HARVESTED 0.00506

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