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Yields of the Field Experiments 1978

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78/R/CS/202 Effects of Phialophora - Wheat

Rothamsted Research

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78/R/CS/202

EFFECTS OF PHIALOPHORA

Object: To study the effects of ryegrass, oats and wheat, and of soil inoculation on populations of *Phialophora radicicola graminicola* (Prg) and on take-all (*Gaeumannomyces graminis*) and yield of following wheat crops - Whittlocks.

Sponsors: E. Lester, D.B. Slope, R.J. Gutteridge.

The second year, wheat.

For previous year see 77/R/CS/202.

Design: 3 randomised blocks of 8 plots.

Whole plot dimensions: 2.67 x 6.10.

Treatments:

CRP INOC(778) Crop in 1977 and inoculation in 1977 and 1978:

GRASS	Ryegrass
GRASS(I)	Ryegrass + Prg inoculum 1977
OATS	Spring oats
OATS(I)	Spring oats + Prg inoculum 1977
OATS I	Spring oats + Prg inoculum to 1978 wheat
OATS DI	Spring oats + dummy inoculum (sand) to 1978 wheat
WHEAT	Spring wheat
WHEAT(I)	Spring wheat + Prg inoculum 1977

NOTE: *Phialophora* inoculum was applied on 20 Oct, 1977. The inoculum was a *Phialophora* culture macerated in coarse sand. Coarse sand alone was applied as dummy inoculum on the same date.

Basal applications: Manures: (10:24:24) at 200 kg, combine drilled. 'Nitro-chalk 26' at 300 kg. K_2O at 100 kg as muriate of potash. Weedkillers: Paraquat at 0.56 kg ion² in 220 l. Terbutryne at 2.8 kg in 220 l.

Seed: Cappelle, sown at 190 kg.

Cultivations, etc.: Paraquat applied: 26 Sept, 1977. K applied, ploughed: 11 Oct. Rolled, rotary harrowed: 20 Oct. Power harrowed, seed sown and terbutryne applied: 24 Oct. N applied: 4 May, 1978. Combine harvested: 4 Sept, 1978.

NOTE: Take-all and *Phialophora* were estimated in plants in April and July and in soil in September.

78/R/CS/202

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

CRP INOC(778)	
GRASS	8.23
GRASS(I)	7.76
OATS	7.22
OATS(I)	7.82
OATS I	8.44
OATS DI	7.26
WHEAT	6.40
WHEAT(I)	5.75
MEAN	7.36

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	CRP INOC(778)
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SED	0.457

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	14	0.560	7.6

GRAIN MEAN DM% 80.6

PLOT AREA HARVESTED 0.00116