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

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79/R/CS/202

EFFECTS OF PHIALOPHORA

Object: To study the effects of ryegrass, oats and wheat, and of soil inoculation on populations of *Phialophora radiculicola 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 third year, wheat.

For previous years see 77-78/R/CS/202.

Design: 3 randomised blocks of 8 plots.

Whole plot dimensions: 2.67 x 6.10.

Treatments:

CRP INOC	Crops in 1977 (all wheat 1978 & 1979) 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 a culture macerated in coarse sand. Coarse sand alone was applied as dummy inoculum.

Basal applications: Manures: (0:20:20) at 250 kg. 'Nitro-Chalk' at 380 kg. Autumn weedkiller: Terbutryne and related triazines at 2.8 kg (as 'Prebane' at 5.6 kg in 220 l). Spring weedkiller: Mecoprop at 2.5 kg in 220 l.

Seed: Flanders, sown at 200 kg.

Cultivations, etc.: Ploughed: 9 Oct, 1978. Rotary harrowed, seed sown: 11 Oct. Autumn weedkiller applied: 16 Oct. N applied: 23 Apr. Spring weedkiller applied: 15 May. Combine harvested: 30 Aug.

NOTE: Estimates of take-all and *Phialophora* were made on the crop in April and early July. Bio-assays of soils for take-all and *Phialophora* were made after harvest, before ploughing.

79/R/CS/202

GRAIN TONNES/HECTARE

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

CRP INOC	
GRASS	6.99
GRASS(I)	6.78
OATS	6.75
OATS(I)	6.12
OATS I	6.96
OATS DI	6.43
WHEAT	5.73
WHEAT(I)	5.27
MEAN	6.38

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

TABLE	CRP INOC
SED	0.424

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

STRATUM	DF	SE	CV%
BLOCK.WP	14	0.520	8.1

GRAIN MEAN DM% 86.7

PLOT AREA HARVESTED 0.00116