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# Yields of the Field Experiments 1980

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## 80/R/CS/202 Effects of Phialophora

### Rothamsted Research

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80/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* (Prg) and on take-all (*Gaeumannomyces graminis*) and yield of following w. wheat crops - Whittlocks.

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

The fourth year, w. wheat.

For previous years see 77-79/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 w. wheat 1978 to 1980) and inoculation in 1977 and 1978:
GRASS	Ryegrass
GRASS(I)	Ryegrass + Prg inoculum 1977
OATS	S. oats
OATS(I)	S. oats + Prg inoculum 1977
OATS I	S. oats + Prg inoculum to 1978 wheat
OATS DI	S. oats + dummy inoculum (sand) to 1978 wheat
WHEAT	S. wheat
WHEAT(I)	S. 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 260 kg, combine drilled. 'Nitro-chalk' at 480 kg. Weedkillers: Methabenzthiazuron at 3.1 kg in 220 l. Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.5 l) in 250 l. Insecticide: Demeton-s-methyl at 0.24 kg in 250 l.

Seed: Flanders, sown at 200 kg.

Cultivations, etc.: - Ploughed: 19 Sept, 1979. Rotary harrowed: 6 Oct. Seed sown, methabenzthiazuron applied: 8 Oct. N applied: 11 Apr, 1980. 'Brittox' applied: 24 Apr. Insecticide applied: 24 June. Combine harvested: 21 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.

80/R/CS/202

GRAIN TONNES/HECTARE

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

CRP INOC	
GRASS	6.77
GRASS(I)	6.71
OATS	5.83
OATS(I)	6.36
OATS I	6.60
OATS DI	5.92
WHEAT	6.54
WHEAT(I)	6.26
MEAN	6.37

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

TABLE	CRP INOC
SED	0.544

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

STRATUM	DF	SE	CV%
BLOCK.WP	14	0.666	10.4
GRAIN MEAN DM%	82.6		
PLOT AREA HARVESTED	0.00116		