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## Yields of the Field Experiments 1998

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### **98/W/CS/446 Ryegrass, Wheat Volunteers and Disease - W. Wheat**

#### **Rothamsted Research**

Rothamsted Research (1999) *98/W/CS/446 Ryegrass, Wheat Volunteers and Disease - W. Wheat ; Yields Of The Field Experiments 1998*, pp 88 - 89 - DOI: <https://doi.org/10.23637/ERADOC-1-52>

98/W/CS/446

**RYEGRASS, WHEAT VOLUNTEERS AND DISEASES**

**Object:** To study how different populations of cereal volunteers and ryegrass sown as a cover crop affect the survival of cereal diseases - Woburn, White Horse.

**Sponsors:** J.F. Jenkyn, R.J. Gutteridge.

For previous year see 96-97/W/CS/446.

The third year, w. wheat.

**Design:** 4 randomised blocks of 10 x 2 plots.

**Whole plot dimensions:** 6.0 x 10.0.

**Treatments:**

Whole plots

1. **COV CROP** Crop, seed rate and soil inoculation in 1996:
  - (R) Ryegrass at 30 kg
  - (RW) Ryegrass at 30 kg + wheat at 50 seeds per m<sup>2</sup>
  - (RI) Ryegrass at 30 kg + soil inoculated with *Phialophora graminicola*
  - (RWI) Ryegrass at 30 kg + wheat at 50 seeds per m<sup>2</sup> + soil inoculated with *P. graminicola*
  - (M) Mustard at 300 seeds per m<sup>2</sup>
  - (MW1) Mustard at 100 seeds per m<sup>2</sup> + wheat at 4 seeds per m<sup>2</sup>
  - (MW2) Mustard at 100 seeds per m<sup>2</sup> + wheat at 9 seeds per m<sup>2</sup>
  - (MW3) Mustard at 100 seeds per m<sup>2</sup> + wheat at 50 seeds per m<sup>2</sup>
  - (MW4) Mustard at 100 seeds per m<sup>2</sup> + wheat at 200 seeds per m<sup>2</sup>
  - (MW5) Mustard at 30 seeds per m<sup>2</sup> + wheat at 400 seeds per m<sup>2</sup>
  
2. **PLOUGH** Time of ploughing in 1996:
  - (PE) Early (17 May)
  - (PL) Late (14 Aug)

**Experimental diary:**

- 12-Sep-97 : B : Ploughed.
- 16-Sep-97 : B : Rolled.
- 25-Sep-97 : B : Rotary harrowed, Hereward, dressed Sibutol, drilled at 350 seeds per m<sup>2</sup>.
- 28-Sep-97 : B : Rolled.
- 25-Nov-97 : B : Stomp 400 SC at 2.0 l with Javelin Gold at 2.0 l and Cyperkill 10 at 0.25 l in 200 l.
- 06-Feb-98 : B : Ashlade Nu Trace at 2.5 l in 200 l.
- 12-Feb-98 : B : 34.5% N at 145 kg.
- 25-Feb-98 : B : Vytel Manganese at 2.0 l in 200 l.
- 31-Mar-98 : B : 34.5% N at 377 kg.

98/W/CS/446

**Experimental diary:**

01-Apr-98 : B : Phosyn Manganese at 2.5 l with Profol Copper at 0.25 l in 200 l.  
 27-Apr-98 : B : Alto 100 SL at 0.6 l with Tripart Brevis at 2.0 l, Phosyn Manganese at 2.0 l and Profol Copper at 0.25 l in 200 l.  
 21-May-98 : B : Ally at 15 g with Cheetah Super at 0.5 l, Starane 2 at 0.5 l and Chiltern Cropoil at 1.0 l in 200 l.  
 31-May-98 : B : Opus at 0.8 l in 200 l.  
 12-Jun-98 : B : Folicur at 0.3 l with Bavistin DF at 0.3 kg in 200 l.  
 02-Aug-98 : B : Roundup Biactive at 4.0 l in 200 l.  
 13-Aug-98 : B : Combine harvested.

**NOTE:** Plant samples were taken in April and June to assess root and stem base diseases.

**GRAIN TONNES/HECTARE**

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

CULT	(PE)	(PL)	Mean
<b>CROP</b>			
(R)	5.18	4.12	4.65
(RW)	3.77	4.85	4.31
(RI)	5.91	5.58	5.75
(RWI)	5.06	6.88	5.97
(M)	4.94	4.42	4.68
(MW1)	4.76	4.79	4.78
(MW2)	4.71	3.52	4.12
(MW3)	4.22	3.32	3.77
(MW4)	3.45	2.61	3.03
(MW5)	2.99	3.14	3.07
Mean	4.50	4.32	4.41

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

CROP	CULT	CROP CULT
0.690	0.308	0.975

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	57	1.379	31.3

GRAIN MEAN DM% 88.5

PLOT AREA HARVESTED 0.00460