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## Yields of the Field Experiments 2000

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### **00/R/CS/505 Break Crops and Take-all - W. Wheat, W. Oats, W. Rape, W. Linseed, W. Beans, W. Peas, W. Lupins**

#### **Rothamsted Research**

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### BREAK CROPS AND TAKE-ALL

**Object:** To test the effects of growing different break crops on take-all (*Gaeumannomyces graminis*) in the following wheat - Bones Close.

**Sponsors:** J.F. Jenkyn, G.L. Bateman, R.J. Gutteridge.

**Design:** 4 randomised blocks of 7 plots.

The first year, w. wheat, w. oats, w. rape, w. linseed, w. beans, w. peas, and w. lupins

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

**Treatments:**

#### CROP

BEW	Winter beans
LNW	Winter linseed
LP	Winter lupins
OW	Winter oats
PEW	Winter peas
RAW	Winter rape
WW	Winter wheat

#### Experimental diary:

28-Aug-99 : B : : Ploughed.  
01-Sep-99 : T : RAW : Combination drilled, Apex, tr. Lindex-Plus FS Seed Treatment, at 120 seeds/m<sup>2</sup> with the Accord drill.  
03-Sep-99 : T : RAW : tm)Alpha Trifluralin 48 EC at 1.0 l in 200 l.  
: T : RAW : tm)Katamaran at 2.0 l in 200 l.  
13-Sep-99 : T : LP : Combination drilled, DTN 12, tr. Promet and Germipro, at 40 seeds/m<sup>2</sup> with the Accord drill.  
14-Sep-99 : T : RAW : PBI Slug Pellets at 8.0 kg.  
17-Sep-99 : T : WW : Combination drilled, Hereward, tr. Sibutol, at 380 seeds/m<sup>2</sup> with the Accord drill.  
23-Sep-99 : T : RAW : PBI Slug Pellets at 7.0 kg.  
30-Sep-99 : T : RAW : Genesis at 5.0 kg.  
06-Oct-99 : T : LNW : Combination drilled, Oliver, tr. Prelude 20 LF, at 950 seeds/m<sup>2</sup> with the Accord drill.  
: T : OW : Combination drilled, Gerald, tr. Sibutol, at 350 seeds/m<sup>2</sup> with the Accord drill.  
14-Oct-99 : T : RAW : tm)Punch C at 0.4 l in 200 l.  
: T : RAW : tm)Hallmark with Zeon Technology at 100 ml in 200 l.  
19-Oct-99 : T : RAW : 34.5% N at 87 kg.  
28-Oct-99 : T : BEW : Drilled, Clipper, recleaned, at 40 seeds/m<sup>2</sup> with the Carrier drill.  
29-Oct-99 : T : PEW : Drilled, Victor, tr. Wakil, at 100 seeds/m<sup>2</sup> with the Carrier drill.  
03-Nov-99 : T : BEW : tm)Alpha Simazine 50 SC at 2.0 l in 220 l.  
: T : BEW : tm)Kerb 50 W at 1.5 kg in 220 l.  
: T : OW,WW : tm)Cyperkill 10 at 250 ml in 220 l.  
: T : OW,WW : tm)Lexus Class WSB at 60 g in 220 l.  
18-Nov-99 : T : LNW : Eagle at 10 g in 220 l.  
22-Nov-99 : T : BEW,PEW : PDQ at 3.0 l in 220 l.  
25-Nov-99 : T : LP : Lo-Gran 20 WG at 12 g in 220 l.  
10-Dec-99 : T : LP : Hand weeded.  
14-Dec-99 : T : LP : Stomp 400 SC at 5.0 l in 220 l.  
20-Jan-00 : T : RAW : Punch C at 0.4 l in 220 l.  
14-Feb-00 : T : RAW : Sulphan (30% N, 7.6% S) at 166 kg, by hand.

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**Experimental diary:**

09-Mar-00 : T : WW : 34.5% N at 145 kg.  
13-Mar-00 : T : LNW : Eagle at 40 g in 220 l.  
          : T : LNW,LP,PEW : Falcon at 0.3 l in 220 l.  
15-Mar-00 : T : RAW : Sulphan (30.0% N, 7.6% S) at 433 kg, by hand.  
17-Mar-00 : T : OW : Orka at 0.5 l in 200 l.  
01-Apr-00 : T : LNW : Eagle at 20 g in 220 l.  
          : T : LP : Lo-Gran 20 WG at 18 g in 220 l.  
19-Apr-00 : T : OW : 34.5% N at 145 kg, by hand.  
          : T : LNW : 34.5% N at 262 kg, by hand.  
          : T : WW : 34.5% N at 377 kg, by hand.  
          : T : PEW : Basagran SG at 1.65 kg in 330 l.  
25-Apr-00 : T : BEW,PEW : Hand rogued rape plants.  
28-Apr-00 : T : WW : tm)Ally at 30 g in 220 l.  
          : T : WW : tm)Starane 2 at 1.0 l in 220 l.  
          : T : WW : tm)Punch C at 0.8 l in 220 l.  
          : T : LP : tm)Bravo 500 at 0.5 l in 220 l.  
          : T : LP : tm)Folicur at 0.5 l in 220 l.  
09-May-00 : T : RAW : tm)Bavistin DF at 1.0 kg in 100 l.  
          : T : RAW : tm)Hallmark with Zeon Technology at 75 ml in 100 l.  
22-May-00 : T : WW : Opus at 0.75 l in 220 l.  
          : T : BEW : tm)Bravo 500 at 1.0 l in 220 l.  
          : T : BEW : tm)Folicur at 0.5.1 in 220 l.  
          : T : PEW : tm)Bravo 500 at 2.0 l in 220 l.  
          : T : PEW : tm)Ronilan FL at 0.75 l in 220 l.  
24-May-00 : T : OW : 27.0% N at 259 kg, by hand.  
16-Jun-00 : T : OW,WW : Folicur at 0.75 l in 200 l.  
          : T : PEW : tm)Compass at 3.0 l in 200 l.  
          : T : PEW : tm)Aphox at 280 g in 200 l.  
04-Jul-00 : T : LP : tm)Folicur at 0.5 l in 200 l.  
          : T : LP : tm)Aphox at 280 g in 200 l.  
          : T : LP : tm)Enhance Low Foam at 50 ml in 200 l.  
12-Jul-00 : T : RAW : Azural at 4.0 l in 200 l.  
23-Jul-00 : T : RAW : Combine harvested.  
25-Jul-00 : T : RAW : Baled straw.  
26-Jul-00 : T : LNW : tm)Enhance Low Foam at 400 ml in 400 l.  
          : T : LNW : tm)Reglone at 3.0 l in 400 l.  
31-Jul-00 : T : PEW : Combine harvested.  
01-Aug-00 : T : LNW : Combine harvested.  
02-Aug-00 : T : OW : Combine harvested.  
          : T : LNW,OW,PEW : Baled straw.  
06-Aug-00 : T : WW : Combine harvested.  
13-Aug-00 : T : WW : Baled straw.  
17-Aug-00 : T : BEW : Combine harvested.  
06-Sep-00 : T : LP : Combine harvested.

Previous crops: W. wheat 1998 and 1999.

**NOTE:** Wheat samples were taken in June to assess root and stem base diseases.  
Soil was sampled after harvest and used in bioassays to measure the take-all infectivity.

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GRAIN TONNES/HECTARE

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

CROP	
BEW	4.28
LNW	1.12
LP	1.51
OW	9.50
PEW	3.96
RAW	4.66
WW	5.96

Mean 4.43

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

CROP  
0.495

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	18	0.699	15.8

GRAIN MEAN DM% 78.8

PLOT AREA HARVESTED 0.00240 (EXCEPT BEANS 0.00150)