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# Yields of the Field Experiments 1991

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## 91/R/CS/212 Seasonal Effects of Take-all - W. Wheat

### Rothamsted Research

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91/R/CS/212

SEASONAL EFFECTS OF TAKE-ALL

**Object:** To study the incidence of take-all (*Gaeumannomyces graminis*) in continuous w. wheat and in first, second and third w. wheats after a break - Great Harpenden I.

**Sponsors:** D. Hornby, R.J. Gutteridge.

The 14th year, w. wheat.

For previous years see 78-90/R/CS/212.

**Design:** 3 randomised blocks of 8 plots.

**Whole plot dimensions:** 5.33 x 10.0.

**Treatments:**

**PREVCROP** Previous crops before w. wheat 1991:

	78	79	80	81	82	83	84	85	86	87	88	89	90
W13	W	W	W	W	W	W	W	W	W	W	W	W	W
BE2 W4	W	BE	W	W	BE	W	W	BE	BE	W	W	W	W
BE1 W4	W	W	W	W	W	W	W	W	BE	W	W	W	W
BE1 W6	BE	W	W	BE	W	W	BE	W	W	W	W	W	W
BE1 W7	W	W	BE	W	W	BE	W	W	W	W	W	W	W
BE1 W2	W	BE	W	W	BE	W	W	BE	W	W	BE	W	W
BE1 W1	W	W	BE	W	W	BE	W	W	BE	W	W	BE	W
BE1	BE	W	W	BE	W	W	BE	W	W	BE	W	W	BE

BE = s. beans, W = w. wheat

**Basal applications:** Manures: (0:16:36) at 980 kg. 'Nitram' at 410 kg. Weedkillers: Isoproturon at 1.3 kg and pendimethalin at 1.3 kg with the insecticide in 200 l. Glyphosate at 0.72 kg with a wetting agent, 'Frigate' at 1.0 l, in 200 l. Fungicides: Fenpropimorph at 0.38 kg in 200 l. Chlorothalonil at 0.49 kg and flutriafol at 0.078 kg with fenpropimorph at 0.38 kg in 200 l. Insecticide: Deltamethrin at 6.2 g.

**Seed:** Mercia, sown at 170 kg.

**Cultivations, etc.:** - PK applied: 3 Sept, 1990. Ploughed: 10 Sept. Cultivated by rotary grubber: 26 Sept. Rotary harrowed, seed sown: 27 Sept. Isoproturon, pendimethalin and the insecticide applied: 15 Nov. N applied: 3 Apr, 1991. Fenpropimorph alone applied: 10 May. Chlorothalonil, flutriafol and fenpropimorph applied: 20 June. Glyphosate with wetting agent applied: 13 Aug. Combine harvested: 20 Aug.

**NOTE:** Plant and soil samples were taken frequently during the season to assess take-all. Additional soil samples were taken to measure the suppressiveness of the soil to the take-all fungus.

91/R/CS/212

GRAIN TONNES/HECTARE

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

PREVCROP	
W13	6.91
BE2 W4	6.97
BE1 W4	7.21
BE1 W6	7.08
BE1 W7	7.41
BE1 W2	6.83
BE1 W1	6.51
BE1	7.72
Mean	7.08

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

PREVCROP  
0.191

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	14	0.234	3.3
GRAIN MEAN DM%	87.6		
PLOT AREA HARVESTED	0.00216		