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Yields of the Field Experiments 1975

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75/ W/CS/99 - Effects of Breaks on Take-all - Barley, Beans

Rothamsted Research

Rothamsted Research (1976) 75/ W/CS/99 - *Effects of Breaks on Take-all - Barley, Beans* ; Yields Of The Field Experiments 1975, pp 195 - 196 - DOI: <https://doi.org/10.23637/ERADOC-1-141>

75/W/CS/99

EFFECTS OF BREAKS ON TAKE-ALL

Object: To study the phenomenon of 'take-all' (*Gaeumannomyces graminis*) decline in barley - Woburn Butt Furlong.

Sponsor: D. Hornby.

The fourth year, barley, spring beans.

For previous years see 72/W/CS/99(t) and 73-74/W/CS/99.

Design: 2 blocks of 9 plots.

Whole plot dimensions: 5.33 x 15.2.

Treatments: Previous crops:-

1968-71	1972	1973	1974	PREVCROP
B	B	B	B (4 plots per block)	B/B/B/B
B	F	B	B	B/F/B/B
B	F	BE	B	B/F/BE/B
B	B	F	BE	B/B/F/BE

B = Barley, BE = Beans, F = Fallow

Standard applications:

Barley: Manures: (20:14:14) at 420 kg combine drilled. Weedkiller: Ioxynil at 0.53 kg and mecoprop at 1.6 kg in 280 l.

Spring beans: Manures: (0:14:28) at 400 kg placement drilled. Weedkiller: Simazine at 0.84 kg in 280 l. Insecticide: Demeton-s-methyl at 0.20 kg in 390 l.

Seed: Barley: Julia, dressed with ethirimol, sown at 160 kg.
Spring beans: Minden, sown at 220 kg.

Cultivations, etc.:-

All plots: Ploughed: 11-13 Dec, 1974. Spring-tine cultivated: 25 Feb, 1975.

Barley: Seed sown: 28 Feb, 1975. Weedkiller applied: 22 May.
Combine harvested: 12 Aug.

Spring beans: Spring-tine cultivated with crumbler: 21 Apr, 1975. Seed sown: 23 Apr. Weedkiller applied: 26 Apr. Insecticide applied: 14 July. Combine harvested: 26 Aug.

Fallow: Spring-tine cultivated with crumbler: 21 Apr, 1975. Spring-tine cultivated: 22 May.

NOTE: Soil samples were taken before sowing and after harvest and plant samples in July for incidence of 'take-all' (*Gaeumannomyces graminis*).

75/W/CS/99

*** TABLES OF MEANS ***

BARLEY GRAIN TONNES/HECTARE

PREVCROP	B/B/B/B	B/F/B/B	B/F/BE/B	B/B/F/BE	MEAN
	1.42	2.08	2.16	2.19	1.73

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

TABLE	PREVCROP	
SED	0.270	B/B/B/B V ANY OF REMAINDER
	0.341	ANY OF REMAINDER

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

STRATUM	DF	SE	CV%
BLOCK.WP	9	0.341	19.7

GRAIN MEAN DM% 87.0

PLOT AREA HARVESTED 0.00434

SPRING BEANS GRAIN TONNES/HECTARE

MEAN 0.76

MEAN DM% 86.7