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Yields of the Field Experiments 1978

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

Rothamsted Research

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78/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 sixth year, barley, spring beans.

For previous years see 72/W/CS/99(t) and 73-77/W/CS/99.

Design: 2 blocks of 9 plots.

Whole plot dimensions: 5.33 x 15.2.

Treatments: Previous crops:-

PREVCROP	1968-71	1972	1973	1974	1975	1976	1977
BBBBBB	B	B	B	B	B	B	B
FBBBBB	B	F	B	B	B	B	B
FBEBBBB	B	F	BE	B	B	B	B
BFEBBBB	B	B	F	BE	B	B	B
BBFBEBB	B	B	B	F	BE	B	B
BBBFEBB	B	B	B	B	F	BE	B
BBBBFBEB	B	B	B	B	B	F	BE

B = Barley, BE = Beans, F = Fallow

Standard applications:

All plots: Manures: Magnesian limestone at 7.5 tonnes.

Barley: Manures: (20:14:14) at 450 kg, combine drilled. Weedkillers: Mecoprop, bromoxynil and ioxynil ('Brittox' at 2.5 l in 280 l) applied with Fungicide: Tridemorph at 0.53 kg.

Spring beans: Manures: (0:14:28) at 400 kg. Insecticide: Pirimicarb at 0.14 kg in 280 l.

Seed: Barley: Porthos, dressed with ethirimol, sown at 160 kg.

Spring beans: Minden, sown at 220 kg.

Cultivations, etc.:-

All plots: Magnesian limestone applied: 17 Oct, 1977. Ploughed: 8 Nov. Spring-tine cultivated: 8 Mar, 1978.

Barley: Seed sown: 9 Mar, 1978. Weedkillers and fungicide applied: 15 May. Combine harvested: 18 Aug.

Spring beans: PK applied, seed sown: 15 Mar, 1978. Hand hoed twice: 24 May, 28 June. Insecticide applied: 14 June. Hand harvested: 11 Sept.

Fallow: Rotary cultivated: 16 May, 1978. Hand hoed twice: 24 May, 30 July.

- NOTES: (1) Soil samples were taken before sowing and after harvest and plant samples in July for incidence of take-all (*Gaeumannomyces graminis*).
- (2) An examination of the results showed a fertility trend coinciding with the contours of the field. The yields presented have been adjusted for this trend.

78/W/CS/99

GRAIN TONNES/HECTARE

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

PREVCROP	BBBBBB	FBBBBB	FBEBBBB	BFBE BBB	BBFBEBB	BBBFBE B	BBBBFBE	MEAN
	3.14	3.68	4.05	4.19	4.06	3.56	4.46	3.88

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

TABLE	PREVCROP
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SED	0.245

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

STRATUM	DF	SE	CV%
BLOCK.WP	5	0.229	5.9

GRAIN MEAN DM% 83.5

PLOT AREA HARVESTED 0.00434