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

Rothamsted Research

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73/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 second year, barley, spring beans.

For previous year see 72/W/CS/99(t).

Design: 2 blocks of 9 plots.

Whole plot dimensions: 5.33 x 15.2. Area harvested: 0.00434.

Treatments: Previous crops:-

PREVCROP

1968-71

1972

B

B (6 plots per block)

B/B

B

F

B/F

B = Barley, F = Fallow.

Basal applications:

Barley: Manures: 500 kg (20:15:15) combine drilled. Weedkiller: Ioxynil at 0.53 kg plus mecoprop at 1.6 kg in 280 l.

Spring beans: Manures: (0:14:28) at 370 kg placement drilled. Weedkiller: Simazine at 0.84 kg in 280 l. Insecticide: Phorate at 1.1 kg as granules.

Seed:

Barley: Julia, dressed with ethirimol, sown at 160 kg.

Spring beans: Minor, sown at 190 kg.

Cultivations, etc.:-

All plots: Deep-tine cultivated twice: 31 Aug, 1972, 25 Sept.

Ploughed: 21 Dec.

Barley: Seed sown: 13 Mar, 1973. Weedkiller applied: 15 May.

Combine harvested: 10 Aug.

Spring beans: Seed sown: 27 Feb, 1973. Weedkiller applied: 5 Mar.

Insecticide applied: 6 June. Combine harvested: 30 Aug.

73/W/CS/99

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

Standard error per plot. Barley.

Grain, tonnes/hectare: 0.375 or 9.5% (11 d.f.)

TABLES OF MEANS

BARLEY

GRAIN: TONNES/HECTARE

PREVCROP

B/B	B/F	Mean
3.85	4.56	3.95

STANDARD ERROR OF DIFFERENCES

PREVCROP

0.287

Mean D.M. % 84.2

SPRING BEANS

GRAIN: TONNES/HECTARE

Mean

3.26

Mean D.M. % 81.8