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81/R/CS/212 Seasonal Effects of Take-all - S. Beans, W. Wheat

Rothamsted Research

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81/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 and second w. wheats after a break - Great Harpenden I.

Sponsor: D. Hornby.

The fourth year, s. beans, w. wheat.

For previous years see 78-80/R/CS/212.

Design: 3 randomised blocks of 4 plots.

Whole plot dimensions: 5.33 x 31.4.

Treatments:

PREVCROP Previous crops before w. wheat 1981:

	1978	1979	1980
W W W	W	W	W
W BE W	W	BE	W
W W BE	W	W	BE

BE = s. beans, W = w. wheat

NOTE: An additional crop sequence was in s. beans 1981, yields not taken.

Basal applications: Weedkillers: Glyphosate at 1.5 l in 250 l.
Chlortoluron at 5.6 l in 250 l.

Standard applications:

Wheat: Manures: (0:20:20) at 310 kg, combine drilled. 'Nitro-Chalk' at 350 kg. Weedkillers: Mecoprop with bromoxynil and ioxynil (as 'Brittox' at 3.7 l) in 250 l.

Beans: Weedkiller: Simazine at 1.2 kg in 250 l. Insecticide: Phorate at 4.5 kg as granules, combine drilled. Pirimicarb at 0.14 kg in 250 l.

Seed: Wheat: Flanders, sown at 200 kg.
Beans: Minden, sown at 260 kg.

Cultivations, etc.:-

All crops: Glyphosate applied: 24 Sept, 1980. Ploughed: 9 Oct. Rotary harrowed: 10 Oct. Chlortoluron applied: 14 Oct.

Wheat: Seed sown: 13 Oct, 1980. N applied: 16 Apr, 1981. Weedkillers applied: 21 Apr. Combine harvested: 24 Aug.

Beans: Spring-tine cultivated, seed sown: 19 Feb, 1981. Weedkiller applied: 9 Apr. Pirimicarb applied: 18 June. Combine harvested: 10 Sept.

NOTE: Take-all was assessed in soil, wheat plants, and in *Agropyron repens* rhizomes. Weed counts were made.

81/R/CS/212

GRAIN TONNES/HECTARE

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

PREVCROP	W W W	W BE W	W W BE	MEAN
	5.86	5.93	7.16	6.32

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

TABLE	PREVCROP
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SED	0.275

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

STRATUM	DF	SE	CV%
BLOCK.WP	4	0.337	5.3

GRAIN MEAN DM% 81.2

PLOT AREA HARVESTED 0.00434