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

Rothamsted Research

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86/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 ninth year, s. beans, w. wheat.

For previous years see 78-85/R/CS/212.

Design: 3 randomised blocks of 8 plots.

Whole plot dimensions: 5.33 x 10.7.

Treatments:

PREVCROP Previous crops before w. wheat 1986:

	1979	1980	1981	1982	1983	1984	1985
CONT W	W	W	W	W	W	W	W
FIRST W	W	W	BE	W	W	BE	W (duplicated)
SECOND W	W	BE	W	W	BE	W	W
BEANS	BE	W	W	BE	W	W	BE

BE = s. beans, W = w. wheat

NOTE: Three additional crop sequences were in s. beans 1986, yields not taken.

Standard applications:

W. wheat: Manures: 'Nitram' at 430 kg. Weedkillers: Clopyralid at 0.07 kg, bromoxynil octanoate at 0.34 kg, mecoprop at 2.5 kg isoproturon at 2.1 kg in 200 l applied with the fungicides. Fungicides: Prochloraz at 0.40 kg and carbendazim at 0.15 kg.
S. beans: Desiccant: Diquat at 0.60 kg ion with a wetting agent ('Agral' at 0.075 l) in 200 l.

Seed: W. wheat: Avalon, sown at 190 kg.
S. beans: Minden, sown at 220 kg.

Cultivations, etc.:-

W. wheat: Ploughed: 8 Oct, 1985. Rotary harrowed, seed sown: 10 Oct. Weedkillers and fungicides applied: 30 Apr, 1986. N applied: 2 May. Combine harvested: 22 Aug.
S. beans: Ploughed: 8 Oct, 1985. Spring-tine cultivated twice: 28 Apr, 1986. Seed sown: 29 Apr. Desiccant with wetting agent applied: 12 Sept. Combine harvested: 22 Sept.

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NOTES: (1) Take-all was assessed in soil and in w. wheat roots.
 (2) Because of a recording error the yield from one of SECOND W plot was lost. An estimated value was used in the analysis.

GRAIN TONNES/HECTARE

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

PREVCROP	CONT W	FIRST W	SECOND W	BEANS	MEAN
	7.40	7.50	7.25	7.73	7.48

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

TABLE	PREVCROP
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SED	0.232 MIN REP
	0.201 MAX-MIN

	PREVCROP
MAX-MIN	FIRST W V ANY OF THE REMAINDER
MIN REP	ANY OF THE REMAINDER

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

STRATUM	DF	SE	CV%
BLOCK.WP	8	0.284	3.8

GRAIN MEAN DM% 77.3

PLOT AREA HARVESTED 0.00298