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

Rothamsted Research

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88/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 11th year, s. beans, w. wheat.

For previous years see 78-87/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 1988: | | | | | | | | | |
|----------|--------------------------------------|----|----|----|----|----|----|----|----|----|
| | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 |
| W8 W W | W | W | W | W | W | W | W | W | W | W |
| W1 W BE | BE | W | W | BE | W | W | BE | W | W | BE |
| BE BE W | W | BE | W | W | BE | W | W | BE | BE | W |
| W2 BE W | W | W | BE | W | W | BE | W | W | BE | W |
| W8 BE W | W | W | W | W | W | W | W | W | BE | W |
| W1 W W | BE | W | W | BE | W | W | BE | W | W | W |
| W2 W W | W | W | BE | W | W | BE | W | W | W | W |

BE = s. beans, W = w. wheat

NOTE: One additional crop sequence was in s. beans 1988, yields not taken.

Standard applications:

W. wheat: Manures: 'Nitram' at 410 kg. Weedkillers: Chlortoluron at 3.5 kg in 200 l. Fluroxypyr at 0.20 kg with isoproturon at 2.1 kg in 200 l.

Seed: W. wheat: Avalon, sown at 180 kg.
S. beans: Minden, sown at 200 kg.

Cultivations, etc.:-

Both crops: Ploughed: 24 Sept, 1987. Rotary harrowed: 5 Oct.

W. wheat: Seed sown: 5 Oct, 1987. Chlortoluron applied: 6 Nov. N applied: 14 Apr, 1988. Fluroxypyr and isoproturon applied: 26 Apr. Combine harvested: 23 Aug.

S. beans: Heavy spring-tine cultivated, rotary harrowed, seed sown: 11 Mar, 1988.

NOTE: Plant and soil samples were taken frequently during the season for assessment of take-all.

88/R/CS/212

GRAIN TONNES/HECTARE

***** Tables of means *****

PREVCROP

| | |
|---------|------|
| W8 W W | 6.21 |
| W1 W BE | 6.61 |
| BE BE W | 7.43 |
| W2 BE W | 7.07 |
| W8 BE W | 7.07 |
| W1 W W | 6.79 |
| W2 W W | 6.82 |

Mean 6.86

*** Standard errors of differences of means ***

PREVCROP

0.438

***** Stratum standard errors and coefficients of variation *****

| Stratum | d.f. | s.e. | cv% |
|---------|------|------|-----|
|---------|------|------|-----|

| | | | |
|----------|----|-------|-----|
| BLOCK.WP | 12 | 0.537 | 7.8 |
|----------|----|-------|-----|

GRAIN MEAN DM% 82.5

PLOT AREA HARVESTED 0.00291