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84/R/BE/11 Erynia and Aphid Control - S. Beans

Rothamsted Research

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84/R/BE/11

SPRING BEANS

ERYNIA AND APHID CONTROL

Object: To study the effects of applying two amounts of the aphid-pathogenic fungus *Erynia neoaphidis* to two s. bean cultivars differing in susceptibility to black aphids (*Aphis fabae*) - Sawyers I East.

Sponsor: S.K. Mardell.

Design: 4 randomised blocks of 2 plots split into 4.

Whole plot dimensions: 2.67 x 2.13.

Treatments: All combinations of:-

Whole plots

1. VARIETY Varieties and susceptibility to black aphids:

BEAD VS Maris Bead, very susceptible
HERRA LS Herra, less susceptible

Sub plots

2. APH CONT Biological and chemical aphid control:

NONE None

E. neoaphidis applied as a powder of mummified aphids on 11 June and on 24 June, 1984:

E NEO 1 At 0.5 mg per plant on each occasion
E NEO 2 At 5.0 mg per plant on each occasion

PIRIMICA Pirimicarb applied at 0.44 kg in 530 l on 11 June

NOTE: Basal irrigation was applied as follows (mm water):

4 May	25	3 July	12.5
9 May	16	6 July	12.5
15 May	25	13 July	12.5
15 June	20	20 July	12
19 June	12.5	25 July	12
29 June	12.5	27 July	<u>12.5</u>

Total 185 mm

Basal applications: Manures: Chalk at 5.0 t. Weedkiller: Simazine at 1.2 l in 250 l.

Seed: Sown at 200 kg.

Cultivations, etc.: - Chalk applied: 24 Oct, 1983. Heavy spring-tine cultivated twice: 11 Nov. Ploughed: 8 Dec. Heavy spring-tine cultivated, rotary harrowed: 20 Mar, 1984. Seed sown: 22 Mar. Weedkiller applied: 23 Mar. Harvested by hand: 12 Sept. Previous crops: S. barley 1982 and 1983.

84/R/BE/11

- NOTES: (1) Samples of live aphids were examined for infection with Erynia and other fungal pathogens at weekly intervals during June and July.
 (2) Aphid numbers were assessed weekly from mid-June to early August.

GRAIN TONNES/HECTARE

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

APH CONT VARIETY	NONE	E NEO 1	E NEO 2	PIRIMICA	MEAN
BEAD VS	3.81	4.34	4.50	4.82	4.37
HERRA LS	5.08	4.69	3.89	5.75	4.85
MEAN	4.44	4.51	4.19	5.29	4.61

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

TABLE	APH CONT	VARIETY* APH CONT
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SED	0.472	0.667

* WITHIN THE SAME LEVEL OF VARIETY ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP.SP	18	0.944	20.5

GRAIN MEAN DM% 89.3

SUB PLOT AREA HARVESTED 0.00024