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81/R/BE/11 Conidiobolus and Aphids - S. Beans

Rothamsted Research

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81/R/BE/11

SPRING BEANS

CONIDIOBOLUS AND APHIDS

Object: To study the effects of two rates of applying the aphid-pathogenic fungus *Conidiobolus obscurus* (formerly *Entomophthora obscura*) on the incidence of black aphids (*Aphis fabae*) and on the yield of s. beans - Fosters Corner.

Sponsor: N. Wilding.

Design: 4 randomised blocks of 4 plots.

Whole plot dimensions: 2.13 x 2.67.

Treatments:

APH CONT	Chemical and biological aphid control:
NONE	None
PIRIMICA	Pirimicarb at 0.14 kg in 340 l on 19 June
C OBS M1	C. obscurus applied as a powder of mummified aphids at 0.5 mg per plant on 18 June
C OBS M2	C. obscurus applied as a powder of mummified aphids at 5.0 kg per plant on 18 June

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

22 June	12
2 July	12
7 July	6
8 July	6
10 July	12
15 July	12
28 July	<u>12</u>
Total	72

Basal applications: Manures: Chalk at 7.5 t. Weedkiller: Simazine at 1.2 kg in 250 l.

Seed: Minden, sown at 240 kg.

Cultivations, etc.: - Chalk applied: 3 Dec, 1980. Ploughed: 10 Dec.
Spring-tine cultivated twice: 18 Feb, 1981. Seed sown: 20 Feb.
Weedkiller applied: 8 Apr. Combine harvested: 8 Sept. Previous crops:
W. wheat 1979, s. barley 1980.

NOTE: Visual estimates of aphid numbers were made weekly in June and July and samples of 50 live aphids per plot were examined for infection with *Conidiobolus* and parasites.

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GRAIN TONNES/HECTARE

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

APH CONT	NONE	PIRIMICA	C OBS M1	C OBS M2	MEAN
	2.20	4.77	3.51	3.06	3.39

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

TABLE	APH CONT
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SED	0.365

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

STRATUM	DF	SE	CV%
BLOCK.WP	9	0.517	15.3

GRAIN MEAN DM% 88.4

PLOT AREA HARVESTED 0.00024