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80/R/BE/10 Spring Beans Rates and Times of Applying Entomorphthora

Rothamsted Research

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80/R/BE/10

SPRING BEANS

RATES AND TIMES OF APPLYING ENTOMOPHTHORA

Object: To study the effects of rates and times of applying the aphid-pathogenic fungus *Entomophthora aphidis* on the incidence of black aphids, *Aphis fabae*, and on the yield of s. beans - Gt. Knott II.

Sponsor: N. Wilding.

Design: 3 randomised blocks of 7 plots.

Whole plot dimensions: 2.67 x 2.13.

Treatments:

APH CONT Chemical and biological aphid control:

NONE None

Pirimicarb at 0.14 kg in 340 l:

PIRIM E Applied early, on 6 June 1980

PIRIM L Applied later, on 23 June

E. aphidis applied as a powder of mummified aphids:

E APH1 E Applied at 0.5 mg per plant early, on 6 June

E APH1 L Applied at 0.5 mg per plant later, on 21 June

E APH2 E Applied at 5.0 mg per plant early, on 6 June

E APH2 L Applied at 5.0 mg per plant later, on 21 June

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

27 May 25

6 June 6

8 June 19

9 June 12

13 June 12

Total 74

Basal applications: Manures: Chalk at 7.5 t. Weedkillers: Trietazine and simazine (as 'Rental SC' at 2.5 l) in 250 l.

Seed: Minden, sown at 150 kg.

Cultivations, etc.: Chalk applied: 8 Oct, 1979. Ploughed: 29 Nov.

Spring-tine cultivated: 1 Mar, 1980 and 3 Mar. Seed sown: 3 Mar.

Weedkillers applied: 21 Mar. Harvested by hand: 15 Sept. Previous crops: W. wheat 1978, s. barley 1979.

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 *Entomophthora* and parasites.

80/R/BE/10

GRAIN TONNES/HECTARE

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

APH CONT	NONE	PIRIM E	PIRIM L E	APH1 E E	APH1 L E	APH2 E E	APH2 L	MEAN
	4.10	5.15	4.82	4.32	4.08	4.64	4.35	4.49

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

TABLE	APH CONT
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SED	0.455

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.558	12.4

GRAIN MEAN DM% 89.8

PLOT AREA HARVESTED 0.00024