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80/R/BE/11 Spring Beans Species of Entomophthora

Rothamsted Research

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80/R/BE/11

SPRING BEANS

SPECIES OF ENTOMOPHTHORA

Object: To study the effects of different species of the aphid-pathogenic fungal genus *Entomophthora* 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
PIRIMICA Pirimicarb at 0.14 kg in 340 l on 23 June, 1980

Entomophthora species applied as a powder of mummified aphids at 5 mg per plant on 22 June:

E APH M *E. aphidis*
E FRE M *E. fresenii*
E PLA M *E. planchoniana*
E OBS M *E. obscura*

Entomophthora applied as resting spores (ex Pasteur Institute) at 5×10^8 spores per hectare on 19 June:

E OBS S *E. obscura*

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

27 May	25
6 June	6
8 June	19
9 June	12
13 June	<u>12</u>
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/11

GRAIN TONNES/HECTARE

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

APH CONT	NONE	PIRIMICA	E APH M	E FRE M	E PLA M	E OBS M	E OBS S	MEAN
	3.28	4.15	4.28	3.60	2.82	3.04	3.35	3.50

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

TABLE	APH CONT
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SED	0.521

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

STRATUM	DF	SE	CV%
BLOCK.WP	12	0.638	18.2

GRAIN MEAN DM% 90.3

PLOT AREA HARVESTED 0.00024