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82/R/BE/5 Control of Stem Nematode - Winter and Spring Beans

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82/R/BE/5

WINTER AND SPRING BEANS

CONTROL OF STEM NEMATODE

Object: To study the effects of a range of chemicals, rates and times of application on the control of stem nematode (*Ditylenchus dipsaci*) and on the yield of w. and s. beans - Highfield 0 and E III, Fosters 0 and E II.

Sponsor: A.G. Whitehead.

Design: For each crop: 2 randomised blocks of 15 plots.

Whole plot dimensions: 2.29 x 4.57.

Treatments:

NEMACIDE	Nematicides, rates and times of application:	
	Applied in the furrow at sowing	Top-dressed after emergence
NONE	None	None (duplicated)
AL1+AL1	Aldicarb at 1.25 kg	+ aldicarb at 1.25 kg
AL2+AL2	Aldicarb at 2.5 kg	+ aldicarb at 2.5 kg
AL1+TH1	Aldicarb at 1.25 kg	+ thiabendazole at 1.25 kg
AL1+TH2	Aldicarb at 1.25 kg	+ thiabendazole at 2.5 kg
AL1+TH4	Aldicarb at 1.25 kg	+ thiabendazole at 5.0 kg
AL2+TH1	Aldicarb at 2.5 kg	+ thiabendazole at 1.25 kg
AL2+TH2	Aldicarb at 2.5 kg	+ thiabendazole at 2.5 kg
AL2+TH4	Aldicarb at 2.5 kg	+ thiabendazole at 5.0 kg
TH1+TH1	Thiabendazole at 1.25 kg	+ thiabendazole at 1.25 kg
TH2+TH2	Thiabendazole at 2.5 kg	+ thiabendazole at 2.5 kg
TH4+TH4	Thiabendazole at 5.0 kg	+ thiabendazole at 5.0 kg
CA1+CA1	Carbofuran at 1.25 kg	+ carbofuran at 1.25 kg
CA2+CA2	Carbofuran at 2.5 kg	+ carbofuran at 2.5 kg

- NOTES: (1) To ensure the presence of stem nematode, infested straw was spread on both sites.
 (2) Thiabendazole was applied in 7,650 l water.
 (3) Post emergence treatments were applied to w. beans on 27 Apr, 1982, to s. beans on 27 May.

Basal applications:

W. beans: Highfield 0 and E III: Manures: Chalk at 3.8 t. (0:14:28) at 500 kg. Weedkiller: Simazine at 1.1 l in 280 l. Fungicide: Benomyl at 0.56 kg in 280 l applied on two occasions. Insecticide: Pirimicarb at 0.14 kg in 280 l applied on two occasions.
 S. beans: Fosters 0 and E II: Manures: (0:14:28) at 500 kg. Weedkiller: Simazine at 1.1 l in 220 l. Fungicide: Benomyl at 0.56 kg in 280 l applied on two occasions. Insecticide: Pirimicarb at 0.14 kg in 270 l applied on two occasions.

Seed: Highfield 0 and E III: Throws MS, sown at 240 kg.
 Fosters 0 and E II: Minden, sown at 250 kg.

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Cultivations, etc.:-

Highfield 0 and E III: Chalk applied: 25 Sept, 1981. Infested straw applied: 9 Oct. Ploughed: 15 Oct. PK applied: 3 Nov. Rotary harrowed, seed sown, treatments applied: 5 Nov. Weedkiller and fungicide applied: 4 Jan, 1982. Fungicide applied: 26 May. Insecticide applied twice: 17 June and 7 July. Harvested by hand: 5 Aug. Previous crops: S. oats 1980, fallow 1981.

Fosters 0 and E II: Infested straw applied: 28 Oct, 1981. PK applied: 3 Jan, 1982. Rotary harrowed, seed sown, treatments applied: 24 Mar. Weedkiller applied: 26 Mar. Fungicide applied: 26 May. Insecticide applied: 17 June. Fungicide applied: 2 July. Insecticide applied: 7 July. Harvested by hand: 5 Aug. Previous crops: S. barley 1980, s. beans 1981.

NOTES: On Highfield 0 and E III counts were made of number of stems infested with stem nematode.
On Fosters 0 and E II counts were made only on untreated plots.

82/R/BE/5 HIGHFIELD

GRAIN TONNES/HECTARE

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

NEMACIDE	
NONE	2.77
AL1+AL1	3.24
AL2+AL2	3.82
AL1+TH1	3.29
AL1+TH2	2.01
AL1+TH4	3.84
AL2+TH1	3.34
AL2+TH2	3.42
AL2+TH4	2.49
TH1+TH1	2.99
TH2+TH2	3.58
TH4+TH4	3.39
CA1+CA1	5.54
CA2+CA2	5.83
MEAN	3.49

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

TABLE	NEMACIDE	

SED	0.576	MIN REP
	0.499	MAX-MIN

NEMACIDE
MIN REP NONE
MAX-MIN NONE V ANY OF THE REMAINDER

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

STRATUM	DF	SE	CV%
BLOCK.WP	15	0.576	16.5
GRAIN MEAN DM%	82.5		
PLOT AREA HARVESTED	0.00035		

82/R/BE/5 FOSTERS

GRAIN TONNES/HECTARE

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

NEMACIDE	
NONE	2.16
AL1+AL1	2.60
AL2+AL2	2.66
AL1+TH1	2.47
AL1+TH2	2.41
AL1+TH4	2.62
AL2+TH1	2.48
AL2+TH2	2.41
AL2+TH4	2.41
TH1+TH1	2.11
TH2+TH2	1.95
TH4+TH4	2.26
CA1+CA1	2.56
CA2+CA2	2.63
MEAN	2.39

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

TABLE	NEMACIDE	
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SED	0.270	MIN REP
	0.234	MAX-MIN

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

STRATUM	DF	SE	CV%
BLOCK.WP	15	0.270	11.3

GRAIN MEAN DM% 85.3

PLOT AREA HARVESTED 0.00035