ROTHAMSTED RESEARCH

Yields of the Field Experiments 1976

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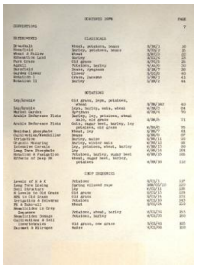

76/W/CS/138 Control of Pcn - Potatoes

Rothamsted Research

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76/W/CS/138

CONTROL OF PCN

Object: To study the fresh and residual effects of several nematicides on control of Globodera (formerly Heterodera) rostochiensis (PCN) and yield of potatoes - Woburn Butt Close.

Sponsor: A.G. Whitehead.

The third year, potatoes.

For previous years see 74-75/W/CS/138.

Design: 4 blocks of 7 plots (NEMRES(745) balanced over blocks).

Whole plot dimensions: 2.84 x 7.01.

Treatments: All combinations of:-

1. NEMRES(745) Residues of nematicides applied in 1974 and 75:

D Z1 1	Dichloropropene at 200 kg; dazomet at 100 kg to top 7.5 cm of soil
D Z1 2	Dichloropropene at 200 kg; dazomet at 100 kg to top 15 cm of soil
D Z2 1	Dichloropropene at 200 kg; dazomet at 200 kg to top 7.5 cm of soil
D Z2 2	Dichloropropene at 200 kg; dazomet at 200 kg to top 15 cm of soil

2. NEMACIDE(76) Nematicides in 1976:

D	Dichloropropene at 200 kg
D+01	Dichloropropene at 200 kg; oxamyl at 2.8 kg
D+03	Dichloropropene at 200 kg; oxamyl at 8.4 kg
D+04	Dichloropropene at 200 kg; oxamyl at 11.2 kg

NEMACIDE(746) plus three extra treatments (applied cumulatively 1974-76):

NONE	None
(02)02	Oxamyl at 5.6 kg
(D02)D02	Dichloropropene at 200 kg; oxamyl at 5.6 kg

NOTE: The dichloropropene was injected at 20 cm and the oxamyl was applied to the surface and rotary cultivated in to a depth of 15 cm.

Basal applications: Manures: (13:13:20) at 1850 kg. Weedkiller: Linuron at 1.2 kg plus paraquat at 0.42 kg ion in 280 l. Insecticide: Pirimicarb at 0.14 kg in 450 l. Fungicide with insecticide: Mancozeb at 1.3 kg plus demeton-s-methyl at 0.25 kg in 450 l. Fungicide: Mancozeb at 1.3 kg in 450 l. Haulm desiccant: Diquat at 0.59 kg ion in 280 l.

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Seed: Pentland Crown.

Cultivations, etc.:-
Deep-tine cultivated, dichloropropene injected, all plots spring-tine cultivated: 24 Oct, 1975. Ploughed: 19 Jan, 1976. NPK applied, spring-tine cultivated: 24 Mar. Oxamyl applied, all plots rotary cultivated, potatoes planted: 23 Apr. Weedkiller applied: 7 May. Pirimicarb applied: 18 June. Fungicide plus demeton-s-methyl applied: 30 June. Fungicide applied: 30 July. Haulm desiccant applied: 6 Oct. Haulm mechanically destroyed: 11 Oct. Lifted: 22 Oct.

NOTE: Soil samples were taken in autumn 1975 and after harvest 1976 for cyst and egg counts of Globodera (formerly Heterodera) rostcochiensis.

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TOTAL TUBERS TONNES/HECTARE

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

NEMACIDE(76) NEMRES(745)	D	D+01	D+03	D+04	MEAN
D Z1 1	16.4	42.0	29.7	48.9	34.3
D Z1 2	4.8	36.2	30.0	34.6	26.4
D Z2 1	23.0	26.5	35.3	34.5	29.8
D Z2 2	14.2	43.3	39.8	41.7	34.7
MEAN	14.6	37.0	33.7	39.9	31.3

NEMACIDE(746)	NONE	(02)02	(D02)D02	MEAN
	6.4	25.5	35.3	22.4

GRAND MEAN 27.5

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

TABLE	NEMACIDE(746)
SED	3.08

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

STRATUM	DF	SE	CV%
BLOCK.WP	6	4.36	15.9

PERCENTAGE WARE 3.81CM (1.5 INCH) RIDDLE

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

NEMACIDE(76) NEMRES(745)	D	D+01	D+03	D+04	MEAN
D Z1 1	89.0	94.6	90.9	91.2	91.4
D Z1 2	79.0	94.1	93.0	97.4	90.9
D Z2 1	96.5	87.7	93.2	95.1	93.1
D Z2 2	85.0	99.5	92.4	94.4	92.8
MEAN	87.4	94.0	92.4	94.5	92.1

NEMACIDE(746)	NONE	(02)02	(D02)D02	MEAN
	74.2	88.1	91.9	84.7

GRAND MEAN 88.9

PLOT AREA HARVESTED 0.00100

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