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

Rothamsted Research

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75/W/CS/138

CONTROL OF PCN

Object: To study the effects of rates and depths of applying nematicides on control of *Heterodera rostochiensis* (PCN) and yield of early and maincrop potatoes - Woburn Butt Close.

Sponsor: A.G. Whitehead.

The second year, potatoes.

For previous year see 74/W/CS/138.

Design: 2 series (for early and maincrop varieties in 1974, both maincrop in 1975) each of 3 blocks of 7 plots.

Whole plot dimensions: 2.84 x 7.01.

Treatments: To each series: Nematicides, times and depths of application (cumulative to 1974):

	NEMACIDE
None	NONE
Autumn applications, all also given dichloropropene (200 kg) injected at 20 cm:	
Dazomet at 100 kg, worked in to top 7.5 cm of soil	DID1/7.5
Dazomet at 100 kg, worked in to top 15 cm of soil	DID1/15
Dazomet at 200 kg, worked in to top 7.5 cm of soil	DID2/7.5
Dazomet at 200 kg, worked in to top 15 cm of soil	DID2/15
Dichloropropene at 200 kg in autumn, injected at 20 cm + oxamyl at 6 kg (a.i.) in spring	DIDP
Oxamyl at 6 kg (a.i.) in spring	DP

Basal applications: Manures: (13:13:20) at 1860 kg. Weedkiller: Linuron at 1.2 kg plus paraquat at 0.28 kg ion in 280 l. Insecticide: Demeton-s-methyl at 0.25 kg in 280 l. Fungicide: Mancozeb at 1.3 kg in 390 l.

Seed: Pentland Crown.

Cultivations, etc.:-

Both series: Deep-tine cultivated: 6 Dec, 1974. Dichloropropene and dazomet applied, spring-tine cultivated: 11 Dec. NPK applied: 22 Apr, 1975. Spring-tine cultivated, oxamyl applied, spring-tine cultivated: 25 Apr. Insecticide applied: 26 June. Fungicide applied: 15 July. Haulm mechanically destroyed: 29 Sept. Sprayed with undiluted BOV at 160 l: 2 Oct. Lifted: 17 Oct. Series I: Rotary cultivated, King Edward potatoes planted in error: 28 Apr. King Edward potatoes lifted and replanted with Pentland Crown: 13 May. Weedkiller applied: 30 May.

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Series II: Rotary cultivated, potatoes planted: 28 Apr. Ridged up:
12 May. Weedkiller applied: 29 May.

- NOTES: (1) Soil samples were taken before planting and after harvest for cyst and egg counts of *Heterodera rostochiensis*.
(2) One block of each series was not harvested for yield because of very poor growth caused by wet conditions at planting.

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SERIES I

TOTAL TUBERS TONNES/HECTARE

*** TABLES OF MEANS ***

NEMACIDE	NONE	DID1/7.5	DID1/15	DID2/7.5	DID2/15	DIDP	DP	MEAN
	3.2	7.4	4.0	13.9	10.4	24.8	19.2	11.8

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

TABLE	NEMACIDE

SED	5.08

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

STRATUM	DF	SE	CV%
BLOCK.WP	6	5.08	42.9

PERCENTAGE WARE 3.81 CM (1.5 INCH) RIDDLE

*** TABLES OF MEANS ***

NEMACIDE	NONE	DID1/7.5	DID1/15	DID2/7.5	DID2/15	DIDP	DP	MEAN
	56.5	76.5	62.7	85.1	80.1	87.3	84.9	76.1

PLOT AREA HARVESTED 0.00100

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SERIES II

TOTAL TUBERS TONNES/HECTARE

*** TABLES OF MEANS ***

NEMACIDE	NONE	DID1/7.5	DID1/15	DID2/7.5	DID2/15	DIDP	DP	MEAN
	2.9	14.7	10.1	14.4	12.7	27.6	22.3	15.0

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

TABLE	NEMACIDE

SED	5.37

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

STRATUM	DF	SE	CV%
BLOCK.WP	6	5.37	35.9

PERCENTAGE WARE 3.81 CM (1.5 INCH) RIDDLE

*** TABLES OF MEANS ***

NEMACIDE	NONE	DID1/7.5	DID1/15	DID2/7.5	DID2/15	DIDP	DP	MEAN
	28.9	80.9	80.5	84.2	83.9	84.4	85.3	76.2

PLOT AREA HARVESTED 0.00100