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74/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 first year, potatoes.

Design: 2 series (for early and maincrop varieties respectively) each of 3 blocks of 7 plots.

Whole plot dimensions: 2.84 x 7.01. Area harvested: 0.00100.

Treatments: To each series: Nematicides, times and depths of application:

	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 + 'Du Pont 1410' at 6 kg (a.i.) in spring	DiDP
'Du Pont 1410' at 6 kg (a.i.) in spring	DP

Basal applications: Manures: (13:13:20) at 1880 kg. Weedkillers: Paraquat at 0.56 kg ion in 370 l. Linuron at 1.2 kg plus paraquat at 0.28 kg ion in 280 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.

Seed: Early, Arran Pilot. Maincrop, Pentland Crown.

74/W/CS/138

Cultivations, etc.:-

Early and maincrop potatoes: Paraquat applied: 13 Sept, 1973.
Subsoiled, tines 140 cm apart 50 cm deep: 25 Sept. Ploughed:
2 Nov. Dichloropropene and dazomet applied: 7 Nov. Rotary
cultivated maincrop: 7 Nov. Early crop: 19 Dec. NPK applied,
'Du Pont 1410' applied, rotary cultivated: 1 Apr, 1974. Potatoes
planted: 2 Apr. Inter-row rotary cultivated and earthed up: 11 Apr.
Weedkiller applied: 8 May. Fungicide with insecticide applied:
19 July. Fungicide applied: 7 Aug. Early crop lifted: 19 Aug.
Maincrop: Haulm mechanically destroyed: 11 Sept. Sprayed with
undiluted BOV at 170 l. Lifted: 14 Oct.
Previous crops: Potatoes 1972, barley 1973.

NOTE: Soil samples were taken in autumn 1973 and after harvest 1974 for
cyst and egg counts of *Heterodera rostochiensis*.
Early. One plot NEMACIDE None was incorrectly treated. An
estimated value was used in the analysis.

Standard errors per plot. Total tubers, tonnes/hectare:
Early: 2.08 or 6.4% (11 d.f.)
Maincrop: 3.96 or 7.0% (12 d.f.)

74/W/CS/138

TABLES OF MEANS

NEMACIDE

None	DiD1/7.5	DiD1/15	DiD2/7.5	DiD2/15	DiDP	DP	Mean
EARLY							
TOTAL TUBERS: TONNES/HECTARE							
15.5	31.7	27.9	34.9	36.1	41.6	41.7	32.7
PERCENTAGE WARE 3.81 CM (1.5 INCH) RIDDLE							
56.3	79.4	77.4	83.2	81.9	85.0	83.1	78.0
MAINCROP							
TOTAL TUBERS: TONNES/HECTARE							
30.4	61.2	52.4	56.5	60.0	72.8	62.6	56.6
PERCENTAGE WARE 3.81 CM (1.5 INCH) RIDDLE							
88.1	94.8	94.4	94.3	93.7	94.4	93.8	93.4

STANDARD ERRORS OF DIFFERENCES: TOTAL TUBERS: TONNES/HECTARE.

NEMACIDE

EARLY	1.70
MAINCROP	3.23