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Yields of the Field Experiments 1974

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74/W/P/3 Methods of Incorporating Nematicides - Potatoes

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74/W/P/3

POTATOES

METHODS OF INCORPORATING NEMATOCIDE

Object: To study the effects of several methods of incorporating three rates of aldicarb into the soil on the incidence of *Heterodera rostochiensis* and yield of potatoes - Woburn Butt Close I.

Sponsors: A.G. Whitehead, R.H. Bromilow.

Design: 4 randomised blocks of 16 plots.

Whole plot dimensions: 2.84 x 11.4. Area harvested: 0.00163.

Treatments: All combinations of:

1. Rates of aldicarb (kg):	ALDICARB
2.25	2.25
4.50	4.50
9.00	9.00
2. Methods of incorporation of aldicarb (all applied just before planting):	METHODS
Applied to surface and then cultivated by 'Roterra' (a rotary cultivator with blades revolving around a vertical axis) to 20 cm depth	S/RR
Half applied to surface and half to 5 cm depth*, then cultivated by 'Roterra' to 20 cm depth	SM/RR
One third applied to surface, one third to 5 cm depth*, one third to 10 cm depth* then cultivated by 'Roterra' to 20 cm depth	SMD/RR
Soil cultivated by 'Roterra' to 20 cm depth, then all aldicarb applied to surface, then rotary cultivated to 10 cm depth	RR/S/RV1
Soil cultivated by 'Roterra' to 20 cm depth, then all aldicarb applied to surface, then rotary cultivated to 20 cm depth	RR/S/RV2
together with one plot not treated with aldicarb, cultivated by 'Roterra' to 20 cm depth	ALDICARB
	0.00

* Applied with a specially made applicator.

Basal applications: Manures: (13:13:20) at 1940 kg. Weedkillers: Linuron at 1.2 kg plus paraquat at 0.28 kg ion in 280 l. Fungicide and 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.

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Seed: Pentland Crown.

Cultivations, etc.:-

Sub-soiled, tines 140 cm apart, 50 cm deep: 22 Sept, 1973. Ploughed: 14 Nov. NPK applied: 8 Apr, 1974. All plots cultivated by 'Roterra': 23 Apr. Treatments applied, potatoes planted: 24 Apr. Weedkiller applied: 17 May. Rotary ridged: 11 June. Fungicide with insecticide applied: 19 July. Fungicide applied: 7 Aug. Haulm mechanically destroyed: 16 Sept. Sprayed with undiluted BOV at 170 l: 18 Sept. Potatoes lifted: 1-14 Oct. Previous crops: Potatoes 1972, 1973.

NOTE: Soil samples were taken in spring, before treatments were applied and after harvest, for cyst and egg counts of *Heterodera rostochiensis*.

Standard error per plot.

Total tubers: tonnes/hectare: 3.98 or 6.8% (45 d.f.)

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TABLES OF MEANS

METHDD

	S/RR	SM/RR	SMD/RR	RR/S/RV1	RR/S/RV2	Mean
TOTAL TUBERS: TONNES/HECTARE						
ALDICARB						
2.25	56.5	56.3	54.9	60.6	61.3	57.9
4.50	57.8	58.3	59.4	59.9	64.1	59.9
9.00	59.8	60.4	63.9	62.0	63.2	61.8
Mean	58.1	58.3	59.4	60.9	62.9	59.9

ALDICARB 0.00 30.3

Grand mean 58.1

STANDARD ERRORS OF DIFFERENCES

ALDICARB	METHDD	ALDICARB METHDD & ALDICARB 0.00
1.26	1.62	2.81

PERCENTAGE WARE: 3.81 CM (1.5 INCH) RIDDLE

ALDICARB

2.25	97.3	96.6	97.7	97.2	96.1	97.0
4.50	96.9	96.7	97.1	97.3	96.7	96.9
9.00	96.2	98.1	96.8	96.9	96.6	96.9
Mean	96.8	97.1	97.2	97.1	96.5	96.9

ALDICARB 0.00 95.6

Grand mean 96.9