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Yields of the Field Experiments 1975

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75/ W/CS/159 - Methods of Incorporating Nematicide - Potatoes

Rothamsted Research

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75/W/CS/159

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.

The second year, potatoes.

For previous year see 74/W/P/3.

Design: 4 randomised blocks of 16 plots.

Whole plot dimensions: 2.84 x 11.4.

Treatments (cumulative on 1974): 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):	METHOD
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.

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Basal applications: Manures: (13:13:20) at 1940 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.:— Deep-tine cultivated: 7 Jan, 1975. NPK applied:
22 Apr. Spring-tine cultivated: 25 Apr. Treatments applied:
30 Apr. Potatoes planted: 1 May. Weedkiller applied: 22 May.
Grubbed: 23 June. Rotary ridged: 24 June. Insecticide applied:
25 June. Fungicide applied: 15 July. Haulm mechanically destroyed:
2 Oct. Sprayed with undiluted BOV at 160 l. Lifted: 16 Oct.

- NOTES: (1) Soil samples were taken in spring before treatments were applied
and after harvest, for cyst and egg counts of *Heterodera*
rostochiensis.
(2) Because of waterlogging growth was very poor on thirteen plots:

ALDICARB	METHOD
0.00	S/RR
2.25	SM/RR
2.25	RR/S/RV1
4.50	S/RR
4.50	SMD/RR
9.00	S/RR (TWO)
9.00	SM/RR
9.00	SMD/RR (TWO)
9.00	RR/S/RV1
9.00	RM/S/RV2

and no yields were taken from these. Estimated values were used
in the analysis.

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POTATOES

TOTAL TUBERS TONNES/HECTARE

*** TABLES OF MEANS ***

METHOD	S/RR	SM/RR	SMD/RR	RR/S/RV1	RR/S/RV2	MEAN
ALDICARB						
2.25	19.9	22.5	16.8	21.4	24.3	21.0
4.50	22.2	21.9	18.3	19.3	19.9	20.3
9.00	17.6	20.4	17.6	24.9	26.4	21.4
MEAN	19.9	21.6	17.6	21.9	23.5	20.9

ALDICARB 0.00 7.7

GRAND MEAN 20.1

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

TABLE	ALDICARB	METHOD	ALDICARB METHOD
SED	1.36	1.75	3.03

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

STRATUM	DF	SE	CV%
BLOCK.WP	32	4.29	21.4

POTATOES

PERCENTAGE WARE 3.81 CM(1.5 IN) RIDDLE

*** TABLES OF MEANS ***

METHOD	S/RR	SM/RR	SMD/RR	RR/S/RV1	RR/S/RV2	MEAN
ALDICARB						
2.25	88.2	90.2	85.8	85.6	88.7	87.7
4.50	84.7	86.7	86.4	89.4	88.9	87.2
9.00	87.3	86.4	85.3	87.7	87.5	86.9
MEAN	86.7	87.8	85.8	87.6	88.3	87.3

ALDICARB 0.00 83.4

GRAND MEAN 87.0

PLOT AREA HARVESTED 0.00045