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Yields of the Field Experiments 1974

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74/W/CS/78 Nematodes and Verticillium - Potatoes

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74/W/CS/78

NEMATODES AND VERTICILLIUM

Object: To study the residual effects of methyl bromide, aldicarb and benomyl (applied to potatoes in 1971) on *Heterodera rostochiensis* and *Verticillium* on a fourth potato crop in 1974 - Woburn Broadmead I.

Sponsors: D.C.M. Corbett, G.A. Hide.

The fourth year, potatoes.

For previous years see 71/W/CS/78(t), 72/W/CS/78(t) and 73/W/CS/78.

Design: 4 blocks of 6 plots, split into 2.

Whole plot dimensions: 2.84 x 12.8. Sub plot area harvested: 0.00147.

Treatments: All combinations of:-

Whole plots: 1. Residues of chemicals applied in 1971 (kg):	CHEMICAL
None	None
Aldicarb, 6.7	Aldicarb
Benomyl, 22.4	Benomyl
Aldicarb, 6.7 + benomyl, 22.4	Ald/Ben
Dazomet, 336	Dazomet
Methyl bromide, 975	Methylbr

Sub plots: 2. Varieties:	VARIETY
Pentland Crown	P Crown
Pentland Dell	P Dell

Basal applications: Manures: Ground chalk at 5 tonnes. (13:13:20) at 1510 kg. Weedkiller: Linuron at 1.2 kg plus paraquat at 0.42 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.

Cultivations, etc.: - Deep-tine cultivated: 14 Sept, 1973. Ground chalk applied: 18 Sept. Deep-tine cultivated: 10 Dec. Spring-tine cultivated: 1 Apr, 1974. Power harrowed: 5 Apr. NPK applied: 8 Apr. Rotary cultivated, potatoes planted: 11 Apr. Weedkiller applied: 17 May. Grubbed: 14 June. Rotary ridged: 18 June. Fungicide with insecticide applied: 12 July. Fungicide applied: 7 Aug. Haulm mechanically destroyed: 10 Sept. Sprayed with undiluted BOV at 170 l. Lifted: 1 Oct.

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- NOTES: (1) Verticillium leaf symptoms were scored at weekly intervals from July 5 to August 30 inclusive.
- (2) Soil samples were taken after harvest for counts of numbers of cysts, eggs and larvae of *Heterodera rostochiensis* and propagules of *Verticillium*.

NOTE: One plot CHEMICAL - Aldicarb, VARIETY - P Dell was planted with P Crown in error. An estimated value was used in the analysis.

Standard errors per plot. Total tubers: tonnes/hectare.

Whole plot: 2.84 or 26.8% (15 d.f.)

Sub plot: 3.15 or 29.7% (17 d.f.)

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TABLES OF MEANS

CHEMICAL

	None	Aldicarb	Benomyl	Ald/Ben	Dazomet	Methyltr	Mean
TOTAL TUBERS: TONNES/HECTARE							
VARIETY							
P Crown	13.1	11.3	21.8	16.5	13.6	12.7	14.8
P Dell	3.4	4.5	9.8	11.9	4.0	4.8	6.4
Mean	8.2	7.9	15.8	14.2	8.8	8.7	10.6

STANDARD ERRORS OF DIFFERENCES

	VARIETY	CHEMICAL	VARIETY CHEMICAL
	0.91	2.01	2.55
Except when comparing means with same level of: CHEMICAL			2.23

PERCENTAGE WARE: 3.81CM (1.5 INCH) RIDDLE

VARIETY	None	Aldicarb	Benomyl	Ald/Ben	Dazomet	Methyltr	Mean
P Crown	93.1	90.2	92.7	92.7	92.5	93.9	92.5
P Dell	56.9	56.4	73.8	73.4	52.1	57.3	61.7
Mean	75.0	73.3	83.2	83.0	72.3	75.6	77.1