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# Yields of the Field Experiments 1973

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## 73/W/CS/78 - Nematodes & Verticillium - Potatoes

### Rothamsted Research

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73/W/CS/78

NEMATODES AND VERTICILLIUM

Object: To study the residual effects of methyl bromide, aldicarb, dazomet and benomyl (applied to potatoes in 1971) on *Heterodera rostochiensis* and *Verticillium* on a third potato crop in 1973 - Woburn Broadmead I.

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

The third year, potatoes.

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

Design: 4 blocks of 6 plots.

Whole plot dimensions: 2.84 x 12.8. Area harvested: 0.00147.

Treatments: 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

Basal applications: Manures: (13:13:20) at 1510 kg. Weedkiller: Linuron at 1.7 kg plus paraquat at 0.42 kg ion in 280 l. Paraquat at 0.56 kg ion in 280 l. Fungicide with insecticide: Mancozeb at 1.3 kg plus demeton-s-methyl at 0.25 kg in 390 l. Fungicide: Mancozeb at 1.3 kg, in 390 l on the first occasion and in 370 l on the second occasion.

Variety: Pentland Dell.

Cultivations, etc.:- Deep-tine cultivated three times: 15 Sept, 1972, 20 Sept, 19 Dec. NPK applied: 27 Mar, 1973. Deep-tine cultivated: 5 Apr. Rotary cultivated, potatoes planted: 11 Apr. Linuron and paraquat applied: 14 May. Paraquat applied: 21 May. Grubbed: 6 June. Rotary ridged: 16 June. Fungicide with insecticide applied: 5 July. Fungicide applied: 26 July, 13 Aug. Haulm mechanically destroyed: 23 Aug. Lifted: 10 Sept.

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- NOTE: (1) Verticillium leaf symptoms were scored on July 4, 11, 17, 24 and 31.
- (2) Soil samples were taken before planting and after harvest for counts of numbers of cysts, eggs and larvae of *Heterodera rostochiensis* and propagules of *Verticillium*.
- (3) The yields on the plots not given benomyl were very small because of soil-borne pathogens, and were therefore analysed separately from the others.
- The S.E. per plot for the latter was estimated from only 3 d.f. The normal practice in 'Yields' is to omit S.E.s estimated from 3 or less d.f., but in view of the special circumstances the S.E.s for the plots given benomyl have been shown. The S.E.s for the plots not given benomyl have not been shown.

Standard error per plot. Total tubers, tonnes/hectare:  
Plots given benomyl: 2.67 or 18.2% (3 d.f.)

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TABLES OF MEANS

Plots not given benomyl

CHEMICAL				
None	Aldicarb	Dazomet	Methylbr	Mean
TOTAL TUBERS: TONNES/HECTARE				
2.2	3.3	1.8	1.2	2.1
PERCENTAGE WARE: 3.81 CM (1.5 INCH) RIDDLE				
43.9	40.4	36.6	28.1	37.3

Plots given benomyl

CHEMICAL		
Benomyl	Ald/Ben	Mean
TOTAL TUBERS: TONNES/HECTARE		
12.7	16.7	14.7

STANDARD ERRORS OF DIFFERENCES

CHEMICAL

1.87

PERCENTAGE WARE: 3.81 CM (1.5 INCH) RIDDLE

77.5	82.8	80.1
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