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72/W/CS/20 Placement of Fumigant - Potatoes

Rothamsted Research

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72/W/CS/20

PLACEMENT OF FUMIGANT

Object: To study the cumulative effects of soil fumigation on *Heterodera rostochiensis* and yield of potatoes grown continuously for six years - Woburn Butt Furlong.

Sponsor: A.G. Whitehead.

The sixth year, potatoes.

For previous years see 67/C/34(t), 68/C/27(t), 69/W/CS/20, 70/W/CS/20(t) and 71/W/CS/20(t).

Whole plot dimensions: 2.13 x 4.57. Area harvested: 0.00098.

Treatments: Fumigant: 0 (0), 84 (1), 168 (2), 336 (4), 672 (8) kg (applied cumulatively to previous treatments).

NOTE: 'Telone' at 340 kg was applied to all dazomet treated plots.

Basal applications: 7.5 tonnes of magnesian limestone, 1410 kg (13:13:20). Weedkiller: Linuron at 1.1 kg with paraquat at 0.42 kg ion in 370 l. Fungicide: Mancozeb at 1.3 kg in 430 l. Fungicide with insecticide: Mancozeb at 1.3 kg with demeton-s-methyl at 0.25 kg in 430 l.

Variety: Majestic.

Cultivations, etc.: Magnesian limestone applied, ploughed: 26 Oct, 1971.
Deep-tine cultivated: 3 Nov. Dazomet and 'Telone' applied, all plots rotary cultivated: 16 Dec. Deep-tine cultivated, NPK applied, potatoes planted, inter-row rotary cultivated and earthed up: 19 Apr, 1972.
Weedkiller applied: 15 May. Fungicide applied: 5 July. Fungicide with insecticide applied: 26 July. Lifted by hand: 21 Sept.

NOTE: Soil samples were taken after harvest for cyst and egg counts of *Heterodera rostochiensis*.

Standard error per plot.

Total tubers, tonnes/hectare: 3.11 or 10.2% (8 d.f.)

72/W/CS/20

TABLE OF MEANS

FUMIGANT					Mean
0	1	2	4	8	
TOTAL TUBERS: TONNES/HECTARE					
14.3	29.4	33.9	36.1	38.7	30.5

STANDARD ERROR OF DIFFERENCES

FUMIGANT 2.54

PERCENTAGE WARE: 3.81 CM (1.5 INCH) RIDDLE

69.6 83.6 86.2 87.7 88.5 83.1