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Numerical Results of the Field Experiments 1970

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70/W/P/6 Potatoes Systemic Nematicide

Rothamsted Research

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POTATOES

(70/W/P/6)

Systemic nematicide - Woburn Butt Close 1970.

Design: 3 blocks of 8 plots.

Area of each plot: 0.0026. Area harvested: 0.0013.

Treatments: Nematicide:

Broadcast: None (S0), 4.3 (S1), 8.6 (S2), 17.2 lb (S4) of 10% granules of DP 1410 (S-methyl 1-(dimethylcarbamoyl)-N-((methylcarbamoyl)oxy)thioformimidate).

Broadcast and Foliar spray: 4.3 + 2 lb (S1F1), 4.3 + 4 lb (S1F2), 8.6 + 2 lb (S2F1), 8.6 + 4 lb (S2F2) of DP 1410.

Basal applications: 10 cwt (13:13:20) broadcast, plus 7.5 cwt (13:13:20) placed. Weedkiller: Linuron at 1 lb in 33 gals. Fungicide: Mancozeb at 1.2 lb in 37 gals on two occasions. Insecticide: Demeton-s-methyl at 3.5 fl oz on one occasion with fungicide.

Cultivations, etc.: Deep-tine cultivated: 3 Nov, 1969. NPK broadcast, deep-tine cultivated, 2 Apr, 1970. Nematicide broadcast: 4 May. NPK placed, potatoes planted, inter-row rotary cultivated and earthed up: 5 May. Weedkiller applied: 15 May. Nematicide spray applied: 3 June. Fungicide applied: 31 July, 18 Aug. Insecticide applied: 31 July. Lifted: 29 Sept. Variety: Pentland Crown. Previous crops: Potatoes 1968, 1969.

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

Standard error per plot.

Total tubers, tons: 1.413 or 8.4% (14 d.f.)

70/W/P/6

SUMMARY OF RESULTS

| S0 | S1 | S2 | S4 | S1F1 | S1F2 | S2F1 | S2F2 | Mean |
|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| TOTAL TUBERS: TONS | | | | | | | | |
| (±0.816) | | | | | | | | |
| 9.43 | 18.23 | 19.45 | 19.04 | 16.38 | 16.84 | 18.40 | 17.59 | 16.92 |
| % WARE: 1.5 INCH | | | | | | | | |
| 89.9 | 92.9 | 94.0 | 92.7 | 93.3 | 93.4 | 94.3 | 91.5 | 92.8 |

POTATOES

(70/R/P/11)

Varieties and 'Ethrel', Long Hoos IV 1970.

Design: 4 blocks of 8 plots, randomisation restricted.

Area of each plot: 0.0051. Area harvested: 0.0006.

Treatments: All combinations of:-

1. Varieties: Arran Pilot (AP), King Edward (KE).
2. 'Ethrel':* Seed soaked for 1 hour before planting: Not soaked (E0), 'Ethrel' at 60 p.p.m. (E1), 120 p.p.m. (E2), 240 p.p.m. (E4).

* 2-chloroethylphosphonic acid.

Basal applications: 1120 lb (13:13:20). Weedkiller: Linuron at 1 lb in 39 gals. Fungicide: Mancozeb at 1.2 lb in 40 gals on 2 occasions. Insecticide: Demeton-s-methyl at 3.5 oz with first mancozeb spray.

Cultivations, etc.: Ploughed: 28 Oct, 1969. Basal NPK applied: 23 Apr, 1970. Plots rotary cultivated, potatoes machine planted: 30 Apr. Weedkiller applied: 23 May. Grubbed and rotary ridged: 17 June. Fungicide and insecticide applied: 29 July. Fungicide applied: 14 Aug. Lifted: 9 Sept. Previous crops: Barley 1968, spring beans 1969.

NOTE: Samples were taken every month for estimation of leaf areas, tuber numbers and tuber size distribution.

Standard error per plot.

Total tubers, tons: 1.224 or 11.9% (21 d.f.)

70/R/P/11

SUMMARY OF RESULTS

| | EO | E1 | E2 | E4 | Mean |
|--------------------|-------|-------|-------|-------|-------|
| TOTAL TUBERS: TONS | | | | | |
| (±0.612) | | | | | |
| AP | 7.95 | 9.60 | 7.91 | 7.65 | 8.28 |
| KE | 11.92 | 12.05 | 12.42 | 12.65 | 12.26 |
| Mean (±0.433) | 9.93 | 10.83 | 10.17 | 10.15 | 10.27 |

% WARE: 1.5 INCH

| | | | | | |
|------|------|------|------|------|------|
| AP | 90.6 | 94.2 | 94.0 | 92.9 | 92.9 |
| KE | 94.7 | 94.2 | 92.7 | 94.9 | 94.1 |
| Mean | 92.7 | 94.2 | 93.3 | 93.9 | 93.5 |