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Yields of the Field Experiments 1971

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71/W/CS/16 Irrigation and Eelworms - Potatoes

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71/W/CS/16

IRRIGATION AND EELWORMS

Object: To study the effects of dazomet and irrigation on the yield and incidence of *Heterodera rostochiensis* on potatoes grown continuously. Susceptible and resistant varieties are studied either grown continuously or alternately - Woburn Butt Close Series I and IV.

The sixth year, potatoes.

For previous years see 66/C/32(t), 67/C/25, 68/C/19, 69/W/CS/16(t) and 70/W/CS/16.

Whole plot dimensions: 15.2 x 15.2. Area sub plot harvested: 0.00092.

Irrigation to C plots 1971 (mm water):

| | Series I | | Series IV |
|--------------|----------|--------------|-----------|
| 9 - 10 June | 12.7 | 8 - 9 June | 12.7 |
| 2 July | 12.7 | 5 - 6 July | 12.7 |
| 13 - 14 July | 25.4 | 12 - 13 July | 25.4 |
| 20 July | 25.4 | 16 July | 25.4 |
| 23 July | 25.4 | 26 July | 25.4 |
| <hr/> | | <hr/> | |
| Total | 101.6 | | 101.6 |

Basal applications: 1547 kg (13:13:20). Weedkiller: Linuron at 1.12 kg in 37l l. Fungicide and insecticide: Mancozeb at 1.34 kg. Demeton-s-methyl at 246 ml in 416 l on one occasion.

Cultivations, etc.: Deep-tine cultivated: 2 Oct, 1970. Fumigated, all plots rotary cultivated and rolled: 21 Oct. Ploughed, (Series I): 9 Feb, 1971, (Series IV): 16 Feb. Fertiliser applied: 31 Mar. Deep-tine cultivated (Series IV): 5 Apr. Rotary cultivated, potatoes planted (Series I): 5 Apr. Rotary cultivated, potatoes planted (Series IV): 6 Apr. Weedkiller applied: 5 May. Rotary ridged: 2 June. Fungicide with insecticide applied: 29 June. Haulm destroyed mechanically (Series I): 20 Aug, (Series IV): 24 Aug. Lifted: (Series I): 23 Aug, (Series IV): 25 Aug. Varieties: Susceptible: Pentland Dell, resistant: Maris Piper.

NOTE: Soil samples were taken before planting and after lifting for egg counts of *Heterodera rostochiensis* and larval invasion tests were made in pots of soil taken before planting but after fumigation.

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

Series I

Strip: 4.18 or 16.9% (6 d.f.)
1/2 plots: 5.79 or 23.4% (8 d.f.)
1/4 plots: 3.69 or 14.9% (16 d.f.)
Pooled (used for calculation of standard errors in summary):
4.40 or 18.0% (30 d.f.)

Series IV

Strip: 3.75 or 14.6% (6 d.f.)
1/2 plots: 3.99 or 15.5% (8 d.f.)
1/4 plots: 4.08 or 15.9% (16 d.f.)
Pooled (used for calculation of standard errors in summary):
3.99 or 15.5% (30 d.f.)

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SUMMARY OF RESULTS

SERIES I

| | | | | | |
|-----------------------------------|------|------|------|------|---------|
| 1966 | MP | PD | PD | MP | |
| 1967 | MP | MP | PD | PD | |
| 1968 | MP | PD | PD | MP | |
| 1969 | MP | MP | PD | PD | |
| 1970 | MP | PD | PD | MP | |
| 1971 | MP | MP | PD | PD | Mean |
| TOTAL TUBERS: TONNES/HECTARE | | | | | |
| (±1.81) | | | | | |
| | | | | | (±0.91) |
| O | 32.3 | 27.8 | 10.7 | 17.1 | 22.0 |
| C | 37.8 | 32.7 | 14.4 | 24.8 | 27.4 |
| O | 30.7 | 21.8 | 4.2 | 9.5 | 16.5 |
| F | 39.4 | 38.7 | 20.9 | 32.4 | 32.9 |
| Mean (±1.28) | 35.1 | 30.3 | 12.6 | 20.9 | 24.7 |
| % WARE: 3.81 CM (1.5 INCH) RIDDLE | | | | | |
| O | 91.8 | 93.7 | 54.2 | 68.2 | 77.0 |
| C | 94.5 | 94.1 | 69.1 | 80.7 | 84.6 |
| O | 92.0 | 93.0 | 45.6 | 60.4 | 72.8 |
| F | 94.3 | 94.8 | 77.7 | 88.5 | 88.8 |
| Mean | 93.2 | 93.9 | 61.7 | 74.5 | 80.8 |

Varieties MP = Maris Piper
PD = Pentland Dell

71/w/cs/16

SERIES IV

| Year | MP | PD | PD | MP | Mean |
|-----------------------------------|------|------|------|------|---------|
| 1966 | MP | PD | PD | MP | |
| 1967 | MP | MP | PD | PD | |
| 1968 | MP | PD | PD | MP | |
| 1969 | MP | MP | PD | PD | |
| 1970 | MP | PD | PD | MP | |
| 1971 | MP | MP | PD | PD | |
| TOTAL TUBERS: TONNES/HECTARE | | | | | |
| (±1.63) | | | | | |
| | | | | | (±0.82) |
| O | 28.7 | 30.6 | 11.9 | 18.5 | 22.4 |
| C | 43.7 | 37.8 | 13.8 | 20.5 | 28.9 |
| O | 32.5 | 24.7 | 4.4 | 8.3 | 17.5 |
| F | 40.0 | 43.7 | 21.3 | 30.7 | 33.9 |
| Mean (±1.15) | 36.2 | 34.2 | 12.9 | 19.5 | 25.7 |
| % WARE: 3.81 CM (1.5 INCH) RIDDLE | | | | | |
| O | 91.9 | 93.4 | 69.4 | 79.1 | 83.4 |
| C | 96.4 | 95.5 | 66.7 | 78.3 | 84.2 |
| O | 93.0 | 92.9 | 48.7 | 65.9 | 75.1 |
| F | 95.3 | 96.0 | 87.4 | 91.6 | 92.6 |
| Mean | 94.2 | 94.4 | 68.0 | 78.7 | 83.8 |

Varieties MP = Maris Piper
 PD = Pentland Dell