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# Yields of the Field Experiments 1971

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

### Rothamsted Research

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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

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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