

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1976

[Full Table of Content](#)

76/W/CS/35 Nematicide Dosage - Potatoes, Barley

Rothamsted Research

Rothamsted Research (1977) *76/W/CS/35 Nematicide Dosage - Potatoes, Barley* ; Yields Of The Field Experiments 1976, pp 160 - 164 - DOI: <https://doi.org/10.23637/ERADOC-1-15>

76/W/CS/35

NEMATICIDES DO SAGE

Object: To study the effects of rates and methods of applying nematicides on *Globodera* (formerly *Heterodera*) *rostochiensis* and yield of potatoes, residual effects are also studied - Woburn Stackyard All.

Sponsor: A.G. Whitehead.

The fifth year, potatoes, barley.

For previous years see 72/W/CS/35(t) and 73-75/W/CS/35.

Design: 3 series of 4 replicates of 2 x 9.

Whole plot dimensions: 4.27 x 6.10.

Treatments:-

The experiment has three series with the following cropping:-

	1968-71	1972	1973	1974	1975	1976
Series I	P	P*	SB	B	P*	P
Series II	P	P	P*	SB	B	P*
Series III	P	P	P	P*	SB	B

P = Potatoes, SB = Sugar beet, B = Barley

* Treatments applied to potatoes, following two crops test residual effects.

Treatments: All combinations of:-

1. Varieties and residual effects of varieties:

VARIETY Series I only (Potatoes-Pentland Crown 1976):

	1972	1975
(PC)PC	Pentland Crown	Pentland Crown
(MPP)PC	Maris Piper	Pentland Crown

VARIETY Series II only (Potatoes-Pentland Crown 1976):

	1973
(PC)PC	Pentland Crown
(MP)PC	Maris Piper

RES VAR Series III only (Barley 1976):

	1974
(PC)	Pentland Crown
(MP)	Maris Piper

76/W/CS/35

2. Nematicides (kg) and nematicide residues (applied to Series I 1975, Series II 1976, Series III 1974):

NEM RES(75) Series I
NEMACIDE Series II
NEM RES(74) Series III

NONE	None
	Dazomet (half before, half after autumn ploughing)
DAZ2	220
DAZ3	330
DAZ4	440
DAZ6	660
DAZ2+TE2	Dazomet, 220, 'Telone', 220, all after autumn ploughing
TE4	'Telone' 450 all after autumn ploughing
OX	Oxamyl 5.6 in spring
TE2+OX	'Telone' 220, after autumn ploughing, oxamyl 5.6 a.i. in spring

Standard applications:-

Potatoes: Series I only: Magnesian limestone at 2.9 tonnes. Series I and II: Manures: (13:13:20) at 1850 kg. Weedkiller: Linuron at 1.3 kg plus paraquat at 0.42 kg ion in 280 l. Insecticide: Pirimicarb at 0.14 kg in 450 l. Fungicide with insecticide: Mancozeb at 1.3 kg with demeton-s-methyl at 0.25 kg in 450 l. Fungicide: Mancozeb at 1.3 kg in 450 l. Haulm desiccant: Diquat at 0.59 kg ion in 280 l.
Barley: Series III: Manures:(20:14:14) at 450 kg, combine drilled. Weedkiller: Ioxynil at 0.53 kg with mecoprop at 1.6 kg in 280 l.

Seed: Potatoes: Pentland Crown.

Barley: Julia, dressed with ethirimol, sown at 160 kg.

Cultivations, etc.:-

Potatoes: Series I: Deep-tine cultivated: 24 Oct, 1975. Magnesian limestone applied, deep-tine cultivated: 28 Oct. NPK applied: 22 Mar, 1976. Spring-tine cultivated: 23 Mar. Rotary cultivated, potatoes planted: 6 Apr. Weedkiller applied: 6 May. Pirimicarb applied: 18 June. Fungicide with demeton-s-methyl applied: 30 June. Fungicide applied: 30 July. Haulm desiccant applied: 6 Oct. Haulm mechanically destroyed: 12 Oct. Lifted: 2 Nov.
Potatoes, Test crop: Series II: Subsoiled, tines 140 cm apart and 56 cm deep: 3 Sept, 1975. Deep-tine cultivated: 9 Sept. Ploughed, spring-tine cultivated: 24 Sept. Dazomet applied and these plots only rotary cultivated, 'Telone' injected, all plots spring-tine cultivated: 13 Oct. NPK applied: 22 Mar, 1976. Spring-tine cultivated: 23 Mar. Oxamyl applied, rotary cultivated, potatoes planted: 6 Apr. Weedkiller applied: 6 May. Pirimicarb applied: 18 June. Fungicide with insecticide applied: 30 June. Fungicide applied: 30 July. Haulm desiccant applied: 6 Oct. Haulm mechanically destroyed: 12 Oct. Lifted: 21 Oct.
Barley: Series III: Ploughed: 24 Nov, 1975. Spring-tine cultivated: 2 Mar, 1976. Spring-tine cultivated with crumbler, seed sown: 8 Mar. Rolled: 9 Mar. Weedkiller applied: 3 May. Combine harvested: 26 July.

NOTE: Soil samples were taken before treatments were applied and after harvest for cyst and egg counts of *Globodera* (formerly *Heterodera*) *rostochiensis*.

76/W/CS/35

POTATOES SERIES I

TOTAL TUBERS TONNES/HECTARE

***** TABLES OF MEANS *****

VARIETY (PCPC)PC	(MPPC)PC	MEAN
NEM RES(75)		
NONE	10.5	11.4
DAZ2	19.1	24.1
DAZ3	28.5	29.1
DAZ4	30.5	31.7
DAZ6	30.6	30.7
DAZ2+TE2	25.2	27.1
TE4	15.3	20.1
OX	25.1	26.6
TE2+OX	32.0	31.8
MEAN	24.1	25.8

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	NEM RES(75)	VARIETY NEM RES(75)	VARIETY
SED	2.49	1.15	3.52

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	47	4.89	18.9

PERCENTAGE WARE 3.81CM (1.5 INCH) RIDDLE

***** TABLES OF MEANS *****

VARIETY (PCPC)PC	(MPPC)PC	MEAN
NEM RES(75)		
NONE	80.6	82.0
DAZ2	89.9	91.2
DAZ3	93.1	91.6
DAZ4	93.9	93.4
DAZ6	92.7	92.5
DAZ2+TE2	91.6	92.2
TE4	88.3	89.9
OX	91.7	91.9
TE2+OX	92.3	91.9
MEAN	90.5	90.7

PLOT AREA HARVESTED 0.00087

76/W/CS/35

POTATOES SERIES II

TUBERS TONNES/HECTARE

***** TABLES OF MEANS *****

VARIETY	(PC)PC	(MP)PC	MEAN
NEMACIDE			
NONE	20.5	26.1	23.3
DAZ2	39.9	40.6	40.2
DAZ3	41.7	41.5	41.6
DAZ4	39.4	41.2	40.3
DAZ6	45.3	44.0	44.7
DAZ2+TE2	43.0	40.3	41.7
TE4	35.7	41.7	38.7
OX	41.3	43.2	42.3
TE2+OX	43.6	45.2	44.4
MEAN	38.9	40.4	39.7

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	NEMACIDE	VARIETY	NEMACIDE VARIETY
SED	1.52	0.68	2.14

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	47	2.89	7.3

PERCENTAGE WARE 3.81CM (1.5 INCH) RIDDLE

***** TABLES OF MEANS *****

VARIETY	(PC)PC	(MP)PC	MEAN
NEMACIDE			
NONE	87.7	86.7	87.2
DAZ2	92.9	91.5	92.2
DAZ3	93.7	91.1	92.4
DAZ4	90.4	93.5	92.0
DAZ6	92.2	92.0	92.1
DAZ2+TE2	91.2	92.2	91.7
TE4	90.3	92.9	91.6
OX	92.2	92.5	92.3
TE2+OX	92.5	93.3	92.9
MEAN	91.5	91.7	91.6

PLOT AREA HARVESTED 0.00087

76/W/CS/35

BARLEY

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

RES VAR NEM RES(74)	(PC)	(MP)	MEAN
NONE	3.63	3.27	3.45
DAZ2	3.54	3.01	3.28
DAZ3	3.38	3.23	3.30
DAZ4	3.38	3.37	3.37
DAZ6	2.85	3.15	3.00
DAZ2+TE2	3.51	3.10	3.31
TE4	3.23	3.19	3.21
OX	3.37	2.95	3.16
TE2+OX	3.77	3.56	3.67
MEAN	3.40	3.20	3.30

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	NEM RES(74)	RES VAR NEM RES(74) RES VAR
SED	0.231	0.103 0.325

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	47	0.437	13.2

GRAIN MEAN DM% 88.1

STRAW TONNES/HECTARE

***** TABLES OF MEANS *****

RES VAR NEM RES(74)	(PC)	(MP)	MEAN
NONE	2.33	1.97	2.15
DAZ2	2.33	2.15	2.24
DAZ3	2.01	2.33	2.17
DAZ4	2.21	2.36	2.28
DAZ6	2.11	1.90	2.01
DAZ2+TE2	2.47	2.30	2.38
TE4	2.05	1.94	1.99
OX	2.21	1.79	2.00
TE2+OX	2.49	2.47	2.48
MEAN	2.24	2.13	2.19

STRAW MEAN DM% 89.8

PLOT AREA HARVESTED 0.00173