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Potatoes

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95/W/P/1

POTATOES

DOUBLE CROPPING AND NEMATODES

Object: To assess the population dynamics of *Globodera pallida* in double cropped potatoes - Woburn, Mill Dam Close III.

Sponsors: K. Evans, P.D. Halford.

Design: 4 randomised blocks of 6 plots.

Whole plot dimensions: 3.0 x 10.0.

Treatments:

1. **NEMACIDE[1]** Nematicide applied to first double crop:
- None
OX Oxamyl
 2. **NEMACIDE[2]** Nematicide applied to second double crop:
- None
OX Oxamyl
- plus 2 extra plots
3. **NEMMAIN** Nematicide applied to main crop:
- None
OX Oxamyl

Experimental diary:

08-Sep-94 : B : PK as (0:20:32) at 781 kg.
21-Sep-94 : B : Ploughed.
20-Mar-95 : **T** : **NEMACIDE[1]** OX: Vydate at 40 kg.
 : **T** : Double crop: 34.5% N at 522 kg. PK as (0:24:24) at
 1000 kg. Rotary cultivated.
21-Mar-95 : **T** : Double crop: Maris Bard, dressed Rizolex, planted.
23-Mar-95 : B : Campbell's Linuron 45% Flowable at 1.9 l with
 Gramoxone 100 at 4.0 l in 400 l.
24-Mar-95 : **T** : Double crop: Covered with polythene.
01-May-95 : **T** : **NEMMAIN** OX: Vydate at 40 kg.
 : **T** : Main crop: 34.5% N at 522 kg. PK as (0:24:24) at
 1000 kg. Rotary cultivated, Estima, dressed
 Rizolex, planted.
16-May-95 : B : Irrigated 3 mm.
19-May-95 : B : Irrigated 3 mm.
26-May-95 : **T** : Double crop: Polythene removed.
07-Jun-95 : B : Irrigated 5 mm.
20-Jun-95 : **T** : Double crop: Hand weeded.
05-Jul-95 : B : Ashlade Maneb Flowable at 2.5 l in 300 l.
10-Jul-95 : B : Irrigated 25 mm.
17-Jul-95 : **T** : Double crop: Potatoes lifted.

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Experimental diary:

18-Jul-95 : **T** : **NEMACIDE[2]** OX: Vydate at 40 kg.
 : **T** : Double crop: PK as (0:24:24) at 1000 kg, 27% N at
 667 kg, rotary cultivated.
19-Jul-95 : **T** : Double crop: Rotary cultivated, Estima, dressed
 Rizolex, planted.
21-Jul-95 : **B** : Irrigated 20 mm.
24-Jul-95 : **B** : Ashlade Maneb Flowable at 2.5 l in 400 l.
25-Jul-95 : **B** : Irrigated 12.5 mm.
11-Aug-95 : **B** : Irrigated 12.5 mm.
12-Aug-95 : **B** : Ashlade Maneb Flowable at 2.5 l in 400 l.
15-Aug-95 : **B** : Irrigated 12.5 mm.
16-Aug-95 : **B** : Irrigated 12.5 mm.
22-Aug-95 : **T** : Main crop: Potatoes lifted.
23-Aug-95 : **T** : Double crop: Harvest at 4.0 l in 300 l sprayed between
 rows.
01-Sep-95 : **T** : Double crop: Irrigated 12.5 mm.
13-Sep-95 : **T** : Double crop: Super-Tin 4L at 560 ml in 300 l.
11-Oct-95 : **T** : Double crop: Super-Tin 4L at 560 ml in 300 l.
24-Oct-95 : **T** : Double crop: Potatoes lifted.

Previous crops: Potatoes 1993, s. barley 1994.

NOTE: Soil samples were taken at intervals through the growing season for nematode counts. Samples of roots and tops were taken to measure vegetative production and nematode infestation.

95/W/P/1

TOTAL TUBERS TONNES/HECTARE

***** Tables of means *****

NEMACIDE[2]	-	OX	Mean
NEMACIDE[1]			
-	15.4	23.5	19.5
OX	28.5	29.6	29.0
Mean	22.0	26.5	24.2

NEMMAIN	
-	20.0
OX	28.9
Mean	24.4

GRAND MEAN 24.3

*** Standard errors of differences of means ***

NEMACIDE[1]	NEMACIDE[2]	NEMACIDE[1]
		NEMACIDE[2]
		& NEMMAIN
1.80	1.80	2.54

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	15	3.59	14.8

PLOT AREA HARVESTED 0.00150

95/W/P/2

POTATOES

DOUBLE CROPPING AND NEMATODES

Object: To assess the population dynamics of *Globodera rostochiensis* in double cropped potatoes - Woburn, Lansome III.

Sponsors: K. Evans, P.D. Halford.

Design: 4 randomised blocks of 6 plots.

Whole plot dimensions: 3.0 x 12.0.

Treatments:

1. **NEMACIDE[1]** Nematicide applied to first double crop:

-	None
OX	Oxamyl

2. **NEMACIDE[2]** Nematicide applied to second double crop:

-	None
OX	Oxamyl

plus 2 extra plots

3. **NEMMAIN** Nematicide applied to main crop:

-	None
OX	Oxamyl

Experimental diary:

08-Sep-94 : B : PK as (0:20:32) at 781 kg
21-Sep-94 : B : Ploughed
21-Mar-95 : T : **NEMACIDE[1]** OX: Vydate at 40 kg.
 : T : Double crop: 34.5% N at 522 kg. PK as (0:24:24) at
 1000 kg. Rotary cultivated, Maris Bard, dressed
 Rizolex, planted.
23-Mar-95 : B : Campbell's Linuron 45% Flowable at 1.9 l with Gramoxone
 at 4.0 l in 400 l.
24-Mar-95 : T : Double crop: Covered with polythene.
01-May-95 : T : **NEMMAIN** OX: Vydate at 40 kg.
 : T : Main crop: 34.5% N at 522 kg. PK as (0:24:24) at
 1000 kg. Rotary cultivated, Estima, dressed Rizolex,
 planted.
26-May-95 : T : Double crop: Polythene removed .
08-Jun-95 : T : Double crop: Gramoxone 100 at 4.0 l in 200 l sprayed
 between rows.
20-Jun-95 : T : Double crop: Hand weeded.
05-Jul-95 : B : Ashlade Maneb Flowable at 2.5 l in 300 l.
11-Jul-95 : B : Irrigated 12.5 mm.
12-Jul-95 : B : Irrigated 12.5 mm.
17-Jul-95 : T : Double crop: Potatoes lifted.

95/W/P/2

Experimental diary:

18-Jul-95 : **T** : **NEMACIDE[2]** OX: Vydate at 40 kg.
 : **T** : Double crop: PK as (0:24:24) at 1000 kg, 27% N at
 667 kg. Rotary cultivated.
19-Jul-95 : **T** : Double crop: Rotary cultivated, Estima, dressed Rizolex,
 planted.
21-Jul-95 : **B** : Irrigated 20 mm.
24-Jul-95 : **B** : Ashlade Maneb Flowable at 2.5 l in 400 l.
25-Jul-95 : **B** : Irrigated 12.5 mm.
11-Aug-95 : **B** : Irrigated 12.5 mm.
12-Aug-95 : **B** : Ashlade Maneb Flowable at 2.5 l in 400 l.
14-Aug-95 : **B** : Irrigated 12.5 mm.
17-Aug-95 : **B** : Irrigated 12.5 mm.
23-Aug-95 : **T** : Main crop: Potatoes lifted.
 : **T** : Double crop: Harvest at 4.0 l in 300 l sprayed between
 rows.
31-Aug-95 : **T** : Double crop: Irrigated 12.5 mm.
13-Sep-95 : **T** : Double crop: Super-Tin 4L at 560 ml in 300 l.
11-Oct-95 : **T** : Double crop: Super-Tin 4L at 560 ml in 300 l.
25-Oct-95 : **T** : Double crop: Potatoes lifted.

Previous crops: Potatoes 1993, S. barley 1994.

NOTE: Soil samples were taken at intervals through the growing season for nematode counts. Plant samples of roots and tops were taken to measure vegative production and nematode infestation.

95/W/P/2

TOTAL TUBERS TONNES/HECTARE

***** Tables of means *****

NEMACIDE[2]	-	OX	Mean
NEMACIDE[1]			
-	14.0	20.1	17.0
OX	21.9	23.8	22.9
Mean	18.0	21.9	20.0
NEMMAIN			
-	14.0		
OX	24.1		
Mean	19.1		

GRAND MEAN 19.7

*** Standard errors of differences of means ***

NEMACIDE[1]	NEMACIDE[2]	NEMACIDE[1]
	NEMACIDE[2]	
	& NEMMAIN	
1.89	1.89	2.67

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	15	3.78	19.2

PLOT AREA HARVESTED 0.00150

95/R/P/4

POTATOES

PATHOGENIC FUNGI

Object: To study the effects of three potato pathogenic fungi, individually and in combination, on the growth and yield of two cultivars - Great Harpenden II.

Sponsor: P.J. Read.

Design: 3 randomised blocks of 2 x 8 plots.

Whole plot dimensions: 1.5 x 9.5.

Treatments: All combinations of:-

1. CULTIVAR

E	Estima
M	Maris Piper

2. DISEASE Inoculated with fungal cultures of:

H	None (healthy)
CC	<i>Colletotrichum coccodes</i>
VD	<i>Verticillium dahliae</i>
RS	<i>Rhizoctonia solani</i>
C+V	<i>C. coccodes</i> and <i>V. dahliae</i>
C+R	<i>C. coccodes</i> and <i>R. solani</i>
V+R	<i>V. dahliae</i> and <i>R. solani</i>
CVR	<i>C. coccodes</i> , <i>V. dahliae</i> and <i>R. solani</i>

Experimental diary:

07-Nov-94 : B : Ploughed.
29-Mar-95 : B : Heavy spring-tine cultivated.
13-Apr-95 : B : Heavy spring-tine cultivated.
18-Apr-95 : B : NPK as (12:20:20) at 1750 kg.
19-Apr-95 : B : Rotary harrowed.
20-Apr-95 : B : Ridged.
21-Apr-95 : B : Potatoes planted.
04-May-95 : B : Ridged.
23-May-95 : B : Campbell's Linuron 45% Flowable at 5.0 l with Gramoxone 100 at 3.0 l in 300 l.
20-Jun-95 : B : Ashlade Maneb Flowable at 2.75 l in 200 l.
30-Jun-95 : B : Ashlade Maneb Flowable at 2.75 l in 200 l.
19-Jul-95 : B : Ashlade Maneb Flowable at 2.75 l in 300 l.
01-Aug-95 : B : Ashlade Maneb Flowable at 2.75 l in 300 l.
14-Aug-95 : B : Super-Tin 4L at 560 ml with Intracrop BLA at 200 ml in 200 l.
30-Aug-95 : B : Super-Tin 4L at 560 ml with Intracrop BLA at 200 ml in 200 l.
13-Sep-95 : B : Super-Tin 4L at 560 ml with Harvest at 3.0 l in 400 l.
29-Sep-95 : B : Pulverised potato tops.
16-Oct-95 : B : Potatoes lifted.

95/R/P/4

Previous crops: S. wheat 1993, w. barley 1994.

NOTE: In June plant height and the number of stems per plant were recorded. At the beginning of July and August samples were taken and disease assessed on stem-bases, roots and tubers; total yields and size of tubers recorded. Disease was assessed and tubers were graded by size and weighed after harvest.

TOTAL TUBERS TONNES/HECTARE

***** Tables of means *****

CULTIVAR DISEASE	E	M	Mean
H	29.9	31.4	30.6
CC	27.8	27.6	27.7
VD	23.3	28.9	26.1
RS	21.0	27.5	24.2
C+V	27.2	27.5	27.3
C+R	25.9	25.0	25.5
V+R	22.7	24.7	23.7
CVR	25.1	27.3	26.2
Mean	25.4	27.5	26.4

*** Standard errors of differences of means ***

CULTIVAR	DISEASE	CULTIVAR DISEASE
1.06	2.11	2.99

***** Stratum standard errors and coefficients of variation *****

Stratum	d.f.	s.e.	cv%
BLOCK.WP	30	3.66	13.9

95/R/P/4

PERCENTAGE WARE 5 CM RIDDLE

***** Tables of means *****

CULTIVAR DISEASE	E	M	Mean
H	59.7	47.9	53.8
CC	59.2	48.9	54.0
VD	53.2	48.3	50.7
RS	63.9	63.4	63.6
C+V	56.9	49.0	53.0
C+R	65.2	56.8	61.0
V+R	62.3	62.2	62.3
CVR	65.0	57.0	61.0
Mean	60.7	54.2	57.4

PLOT AREA HARVESTED 0.00086