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## Yields of the Field Experiments 1993

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### 93/W/P/1 Double Cropping - Potatoes

#### Rothamsted Research

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93/W/P/1

POTATOES

DOUBLE CROPPING

**Object:** To study the effects of growing two crops of potatoes in one season on the population dynamics of *Globodera pallida* - Woburn, Mill Dam Close III.

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

**Design:** 3 blocks of 2 x 2 plots with external dummy plots.

**Whole plot dimensions:** 3.0 x 6.0.

**Treatments:** All combinations of:-

- |                    |  |
|--------------------|--|
| 1. <b>CROPPING</b> | Cropping:                                    |
| DOUBLE             | Double crop: Pentland Javelin, then Costella |
| MAIN               | Main crop: Costella                          |
| 2. <b>NEMACIDE</b> | Nematicide applied:                          |
| NONE               | None   |
| OXAMYL             | Oxamyl at 4.0 kg                             |

**Experimental diary:**

- 10-Aug-92 : B : Subsoiled to 45 cm with tines 1.5 m apart
- 21-Jan-93 : B : Ploughed.
- 25-Jan-93 : B : Covered with polythene sheeting.
- 24-Feb-93 : T : **CROPPING** DOUBLE: Spike rotavated, PK as (0:24:24) at 1265 kg, 27% N at 666 kg.
- : T : **CROPPING** DOUBLE, **NEMACIDE** OXAMYL: Oxamyl at 4.0 kg.
- : T : **CROPPING** DOUBLE: Spike rotavated, Pentland Javelin, dressed Rizolex Flowable, planted. Rotalin at 3.5 l in 250 l.
- : B : Re-covered with polythene sheeting.
- 20-Apr-93 : T : **CROPPING** MAIN: PK as (0:24:24) at 1265 kg 27% N at 666 kg.
- : T : **CROPPING** MAIN, **NEMACIDE** OXAMYL: Oxamyl at 4.0 kg.
- : T : **CROPPING** MAIN: Spike rotavated, Costella planted.
- 22-Apr-93 : T : **CROPPING** DOUBLE: Re-covered with polythene sheeting.
- 12-May-93 : T : **CROPPING** MAIN: Arresin at 5.0 l in 250 l.
- 14-May-93 : T : **CROPPING** DOUBLE: Removed polythene sheeting.
- 18-May-93 : T : **CROPPING** MAIN: Gramoxone 100 at 3.0 l in 250 l.
- 17-Jun-93 : B : Chiltern Manex at 2.5 l with Intracrop BLA at 0.30 l in 300 l.
- 24-Jun-93 : T : **CROPPING** DOUBLE: Pentland Javelin lifted.
- 25-Jun-93 : T : **CROPPING** DOUBLE: Haulm raked off, rotary cultivated, PK as (0:24:24) at 1265 kg, 27% N at 666 kg. Rotary cultivated, ridged up, Costella planted.
- 08-Jul-93 : B : Irrigated 12.5 mm.
- 13-Jul-93 : B : Ashlade Mancozeb FL at 2.5 l with Intracrop BLA at 0.30 l in 300 l.

93/W/P/1

**Experimental diary:**

30-Jul-93 : B : Ashlade Mancozeb FL at 2.5 l with Intracrop BLA at 0.30 l and Polyverdol at 3.0 l in 300 l.  
 09-Aug-93 : T : **CROPPING** DOUBLE: Hand hoed.  
 13-Aug-93 : B : Ashlade Mancozeb FL at 2.5 l with Intracrop BLA at 0.30 l in 300 l.  
 24-Aug-93 : B : Ashlade Mancozeb FL at 2.5 l with Intracrop BLA at 0.30 l in 300 l.  
 01-Sep-93 : T : **CROPPING** MAIN: Costella lifted.  
 04-Sep-93 : T : **CROPPING** DOUBLE: Brestan 60 at 0.5 kg in 300 l.  
 17-Sep-93 : T : **CROPPING** DOUBLE: Brestan 60 at 0.5 kg in 300 l.  
 21-Oct-93 : T : **CROPPING** DOUBLE: Costella lifted.

**NOTES:** (1) Potatoes were planted at 75 cm spacing between rows, 30 cm within rows.  
 (2) Polyverdol is a foliar nutrient solution (8:8:6) containing chelated trace elements, vitamin B, and plant growth hormones.  
 (3) Soil samples were taken before planting and after each crop for nematode counts. Root samples were taken six and ten weeks after planting each crop for assessment of nematode population densities. Disease assessments were made in spring and tubers were assessed for disease after each harvest.

**TOTAL TUBERS TONNES/HECTARE**

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

<b>NEMACIDE</b>	NONE	OXAMYL	Mean
<b>CROPPING</b>			
DOUBLE	17.7	18.6	18.1
MAIN	10.6	20.9	15.8
Mean	14.2	19.7	17.0

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

<b>CROPPING</b>	<b>NEMACIDE</b>	<b>CROPPING</b>
		<b>NEMACIDE</b>
0.873	0.873	1.234

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	6	1.511	8.9

PLOT AREA HARVESTED \*