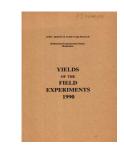
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# Yields of the Field Experiments 1990



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# 90/W/P/2 Chemical Control of Globodera Pallida - Potatoes

# **Rothamsted Research**

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#### 90/W/P/2

#### **POTATOES**

#### CHEMICAL CONTROL OF GLOBODERA PALLIDA

Object: To determine whether yield and control of G. pallida are increased by adding to oxamyl chemicals with different effects on the nematodes - Woburn, Lansome/Mill Dam Close III.

Sponsors: A.G. Whitehead, A.J.F. Nichols.

Design: 3 randomised blocks of 2 plots split into 6 sub plots.

Whole plot dimensions: 6.0 x 13.3.

Treatments: All combinations of:-

IRRIGATN Irrigation:

NONE None

FULL Full, to reduce a soil moisture deficit of 37 mm to

25 mm

Sub plots

2. CHEMICAL Chemicals:

NONE None

OXAMYL Oxamyl at 5.6 kg

OX CARBO Oxamyl at 5.6 kg + carbofuran at 5.6 kg

OX ETHOP Oxamyl at 5.6 kg + ethoprophos at 5.6 kg

OX FORMA Oxamyl at 5.6 kg + formalin at 1170 kg in 3000 l

OX SODME Oxamyl at 5.6 kg + sodium metavanadate at 36 kg

NOTES: (1) Irrigation was applied on 21 occasions; at 12 mm on each.

(2) Formalin was applied on 13 Feb, 1990, the other chemicals on 23 Apr.

Basal applications: Manures: (13:13:20) at 1.6 t. Weedkillers: Glyphosate at 1.4 kg in 220 l. Linuron at 1.6 kg in 220 l. Fungicides: Mancozeb at 1.0 kg on the first two occasions and at 1.4 kg on the third, applied with a wetting agent, 'Bond' at 200 ml, in 220 l. Fentin hydroxide at 0.27 kg in 220 l, applied on three occasions.

Variety: Desiree.

Cultivations, etc.:- Glyphosate applied: 1 Sept, 1989. Ploughed:
13 Nov. NPK applied: 20 Apr, 1990. Rotary cultivated, potatoes
planted: 23 Apr. Rotary ridged: 26 Apr. Linuron applied: 3 May.
Irrigation treatment applied: 9, 15, 18, 22, 31 May, 5, 8, 13, 15,
19, 26, 29 June, 2, 11, 16, 20, 23, 26 July, 3, 6 and 10 Aug.
Mancozeb and wetting agent applied: 26 June, 11 and 24 July. Fentin
hydroxide applied: 7, 10 Aug and 10 Sept. Haulm mechanically
destroyed: 14 Sept. Potatoes lifted: 19 Sept. Previous crops:
Potatoes 1988, s. barley 1989.

## 90/W/P/2

NOTE: Populations of G. pallida eggs in soil were assessed before planting and after harvest.

## TOTAL TUBERS TONNES/HECTARE

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

IRRIGATN	NONE	FULL	Mean
CHEMICAL			
NONE	18.6	34.1	26.4
OXAMYL	22.5	44.2	33.3
OX CARBO	22.6	39.3	30.9
OX ETHOP	21.0	43.8	32.4
OX FORMA	23.0	43.5	33.2
OX SODME	20.5	36.0	28.3
Mean	21.4	40.1	30.8

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

CHEMICAL	IRRIGATN'	
	CHEMICAL	
3.27	4 63	

\* Within the same level of IRRIGATN only

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

Stratum	d.f.	s.e.	CV 8
BLOCK.WP.SP	20	5.67	18.4

# PERCENTAGE WARE 4.4CM (1.75 INCH) RIDDLE

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

IRRIGATN	NONE	FULL	Mean
CHEMICAL			
NONE	80.7	87.9	84.3
OXAMYL	84.9	90.6	87.8
OX CARBO	86.4	88.3	87.4
OX ETHOP	82.7	89.2	85.9
OX FORMA	79.8	89.2	84.5
OX SODME	85.9	89.0	87.5
Mean	83.4	89.1	86.2

PLOT AREA HARVESTED 0.00057