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76/W/CS/183 Factor Affecting Yield and Pcn Control - Potatoes

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76/W/CS/181

SERIES IV

GRAIN TONNES/HECTARE

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

	N	0	30	60	90	120	150	MEAN
TREFOIL								
NONE		0.23	0.57	0.56	0.79	0.53	0.80	0.58
U SOWN		0.27	0.47	0.63	0.56	0.63	0.50	0.51
MEAN		0.25	0.52	0.60	0.68	0.58	0.65	0.55

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

TABLE	TREFOIL	N	TREFOIL N
SED	0.146	0.253	0.358

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

STRATUM	DF	SE	CV%
WP	12	0.358	65.6

GRAIN MEAN DM% 86.4

STRAW TONNES/HECTARE

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

	N	0	30	60	90	120	150	MEAN
TREFOIL								
NONE		0.20	0.47	0.69	0.67	0.75	0.84	0.60
U SOWN		0.17	0.53	0.78	0.67	0.70	0.86	0.62
MEAN		0.18	0.50	0.74	0.67	0.72	0.85	0.61

STRAW MEAN DM% 90.6

PLOT AREA HARVESTED 0.00173

76/W/CS/183

FACTORS AFFECTING YIELD AND PCN CONTROL

Object: To study the effects of fertiliser, plant density and date of haulm destruction on yield and incidence of *Globodera* (formerly *Heterodera*) *rostochiensis* (PCN) and its control by oxamyl - Woburn Long Mead.

Sponsor: A.G. Whitehead.

The first year, potatoes.

Design: 2 randomised blocks of 32 plots.

Whole plot dimensions: 2.84 x 6.10.

Treatments: All combinations of:-

1. SPACING Spacing of setts within the ridge (ridges 71 cm (28 inches) apart):

25 CM	25 cm (10 inches)
50 CM	50 cm (20 inches)

2. FERTILISER Fertiliser:

STANDARD	Standard, (13:13:20) at 1850 kg to seedbed
EXTRA	Standard, (13:13:20) at 1850 kg to seedbed + 119 kg P205 as superphosphate and 377 kg K20 as sulphate of potash in February + 125 kg N in June

3. OXAMYL Oxamyl (kg):

0	None (duplicated)
10	10 (duplicated)

4. HLM KILL Date of haulm destruction:

STANDARD	Standard (16 September)
LATE	Late (6 October)

Basal applications: 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 plus 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.

Seed: Pentland Crown.

Cultivations, etc.: - Ploughed: 20 Oct, 1975. Treatment PK applied: 5 Mar, 1976. Spring-tine cultivated: 12 Mar. NPK applied, Spring-tine cultivated: 23 Mar. Oxamyl applied, all plots rotary cultivated, potatoes planted: 7 Apr. Weedkiller applied: 5 May. N treatment applied: 7 June. Pirimicarb applied: 18 June. Fungicide with insecticide applied: 30 June. Fungicide applied: 30 July. Haulm mechanically destroyed on HLM KILL STANDARD plots: 16 Sept. Haulm desiccant applied to HLM KILL LATE plots: 6 Oct. Lifted: 22 Oct.

NOTE: Soil samples were taken before treatments were applied in autumn 1975 and after harvest 1976 for cyst and egg counts of *Globodera* (formerly *Heterodera*) *rostochiensis*.

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TOTAL TUBERS TONNES/HECTARE

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

FERTLSER	STANDARD	EXTRA	MEAN	
SPACING				
25 CM	25.2	27.3	26.2	
50 CM	21.3	22.0	21.7	
MEAN	23.3	24.6	24.0	
OXAMYL	0	10	MEAN	
SPACING				
25 CM	14.0	38.5	26.2	
50 CM	10.8	32.6	21.7	
MEAN	12.4	35.5	24.0	
OXAMYL	0	10	MEAN	
FERTLSER				
STANDARD	11.7	34.8	23.3	
EXTRA	13.1	36.2	24.6	
MEAN	12.4	35.5	24.0	
HLM KILL	STANDARD	LATE	MEAN	
SPACING				
25 CM	25.7	26.8	26.2	
50 CM	19.3	24.1	21.7	
MEAN	22.5	25.4	24.0	
HLM KILL	STANDARD	LATE	MEAN	
FERTLSER				
STANDARD	22.3	24.2	23.3	
EXTRA	22.6	26.7	24.6	
MEAN	22.5	25.4	24.0	
HLM KILL	STANDARD	LATE	MEAN	
OXAMYL				
0	12.2	12.6	12.4	
10	32.8	38.3	35.5	
MEAN	22.5	25.4	24.0	
FERTLSER	STANDARD		EXTRA	
OXAMYL	0	10	0	10
SPACING				
25 CM	12.4	38.0	15.6	38.9
50 CM	11.0	31.6	10.5	33.5
FERTLSER	STANDARD		EXTRA	
HLM KILL	STANDARD	LATE	STANDARD	LATE
SPACING				
25 CM	25.0	25.5	26.4	28.2
50 CM	19.6	23.0	18.9	25.1

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TOTAL TUBERS TONNES/HECTARE

OXAMYL	0	10		
HLM KILL STANDARD SPACING		LATE STANDARD	LATE	
25 CM	14.3	13.7	37.0	40.0
50 CM	10.1	11.5	28.5	36.7

OXAMYL	0	10		
HLM KILL STANDARD FERTLSER		LATE STANDARD	LATE	
STANDARD	11.3	12.1	33.3	36.3
EXTRA	13.1	13.0	32.2	40.3

OXAMYL	0	10		
HLM KILL STANDARD SPACING FERTLSER		LATE STANDARD	LATE	
25 CM STANDARD	12.3	12.6	37.7	38.3
EXTRA	16.4	14.8	36.3	41.6
50 CM STANDARD	10.4	11.7	28.9	34.3
EXTRA	9.8	11.3	28.0	39.0

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

TABLE	SPACING	FERTLSER	OXAMYL	HLM KILL
SED	1.22	1.22	1.22	1.22

TABLE	SPACING FERTLSER	SPACING OXAMYL	FERTLSER OXAMYL	SPACING HLM KILL
SED	1.73	1.73	1.73	1.73

TABLE	FERTLSER HLM KILL	OXAMYL HLM KILL	SPACING FERTLSER OXAMYL	SPACING FERTLSER HLM KILL
SED	1.73	1.73	2.44	2.44

TABLE	SPACING OXAMYL HLM KILL	FERTLSER OXAMYL HLM KILL	SPACING FERTLSER OXAMYL HLM KILL
SED	2.44	2.44	3.46

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

STRATUM	DF	SE	CV%
BLOCK.WP	47	4.89	20.4

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TOTAL TUBERS TONNES/HECTARE

PERCENTAGE WARE 3.81CM (1.5 INCH) RIDDLE

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

FERTLSER	STANDARD	EXTRA	MEAN
SPACING			
25 CM	85.4	88.0	86.7
50 CM	91.5	90.4	91.0
MEAN	88.5	89.2	88.8
OKAMYL	0	10	MEAN
SPACING			
25 CM	81.2	92.2	86.7
50 CM	89.1	92.8	91.0
MEAN	85.2	92.5	88.8
OKAMYL	0	10	MEAN
FERTLSER			
STANDARD	84.2	92.7	88.5
EXTRA	86.1	92.3	89.2
MEAN	85.2	92.5	88.8
HLM KILL	STANDARD	LATE	MEAN
SPACING			
25 CM	85.5	87.9	86.7
50 CM	89.6	92.4	91.0
MEAN	87.5	90.1	88.8
HLM KILL	STANDARD	LATE	MEAN
FERTLSER			
STANDARD	87.3	89.6	88.5
EXTRA	87.8	90.6	89.2
MEAN	87.5	90.1	88.8
HLM KILL	STANDARD	LATE	MEAN
OKAMYL			
0	83.7	86.6	85.2
10	91.4	93.6	92.5
MEAN	87.5	90.1	88.8

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PERCENTAGE WARE 3.81CM (1.5 INCH) RIDDLE

FERTLSER	STANDARD			EXTRA	
OXAMYL	0	10		0	10
SPACING					
25 CM	78.6	92.2		83.9	92.1
50 CM	89.9	93.1		88.4	92.5
FERTLSER	STANDARD			EXTRA	
HLM KILL	STANDARD	LATE	STANDARD	LATE	
SPACING					
25 CM	85.1	85.8		85.9	90.0
50 CM	89.5	93.4		89.6	91.3
OXAMYL	0			10	
HLM KILL	STANDARD	LATE	STANDARD	LATE	
SPACING					
25 CM	80.3	82.2		90.8	93.6
50 CM	87.2	91.1		92.0	93.7
OXAMYL	0			10	
HLM KILL	STANDARD	LATE	STANDARD	LATE	
FERTLSER					
STANDARD	82.0	86.5		92.7	92.7
EXTRA	85.5	86.8		90.1	94.5
OXAMYL	0			10	
HLM KILL	STANDARD	LATE	STANDARD	LATE	
SPACING FERTLSER					
25 CM STANDARD	77.6	79.6		92.5	91.9
EXTRA	82.9	84.8		89.0	95.2
50 CM STANDARD	86.3	93.4		92.8	93.5
EXTRA	88.1	88.7		91.1	93.9

PLOT AREA HARVESTED 0.00087