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91/W/P/2 Double Cropping - Potatoes

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91/W/P/2

POTATOES

DOUBLE CROPPING

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

Sponsor: A.G. Whitehead.

Design: 2 randomised blocks of 8 plots.

Whole plot dimensions: 3.0 x 6.0.

Treatments: All combinations of:-

1. **JAV OX** Rates of oxamyl (kg) applied to the seedbed for first early Pentland Javelin grown under plastic sheet: 11 Mar, 1991.

0.0
2.8
5.6

2. **COS OX** Rates of oxamyl (kg) applied to the seedbed for Costella grown after the Pentland Javelin: 5 July.

0.0
5.6

plus two extra treatments, rates of oxamyl (kg) applied to the seedbed for Costella grown as a single maincrop variety: 5 Apr.

M COS OX

0.0
5.6

Basal applications: Manures: (0:24:24) at 1.3 t.

Standard applications:

JAV OX plots only: Manures: 'Nitro-Chalk' at 670 kg. Weedkiller: Linuron at 1.6 kg in 250 l. Irrigation: 12 mm applied on four occasions and 6.5 mm on the fifth.

COS OX plots only: Manures: (13:13:21) at 1.8 t. Weedkiller: Linuron at 1.5 kg in 200 l. Fungicides: Mancozeb at 0.82 kg and wetting agent, 'Bond' at 200 ml, applied on three occasions, with insecticide on the first and third, all in 300 l. Fentin hydroxide at 0.27 kg in 300 l. Insecticide: Pirimicarb at 0.14 kg on two occasions. Irrigation: 12 mm applied on five occasions.

M COS OX plots only: Manures: 'Nitro-Chalk' at 820 kg. Weedkillers: Monolinuron at 0.77 kg and paraquat at 0.55 kg ion in 200 l. Fungicides: Mancozeb at 0.82 kg and wetting agent, 'Bond' at 200 ml, applied on three occasions, with insecticide on the first and third, all in 300 l. Insecticide: Pirimicarb at 0.14 kg on two occasions. Irrigation: 12 mm applied on four occasions and 6.5 mm on the fifth.

91/W/P/2

Cultivations, etc.:-

All plots: P and K applied: 5 Mar, 1991. Spring-tine cultivated, rotary cultivated: 11 Mar.

JAV OX plots only: N applied: 5 Mar. Oxamyl treatments applied, potatoes planted, weedkiller applied: 11 Mar. Plastic sheet applied: 12 Mar. Plastic sheet removed: 20 May. Irrigated: 21, 29, 31 May, 3 and 7 June. Potatoes lifted: 19 June.

COS OX plots only: Rolled: 20 June. Rotary cultivated, oxamyl treatments applied, manures applied, rotary cultivated, potatoes planted: 5 July. Rotary ridged: 8 July. Weedkiller applied: 10 July. Mancozeb, pirimicarb and wetting agent applied: 20 July and 12 Aug. Mancozeb and wetting agent applied: 31 July. Irrigation applied: 15, 28 Aug, 7, 14 and 21 Sept. Fentin hydroxide applied: 12 Sept. Potatoes lifted: 29 Oct.

M COS OX plots only: Rotary cultivated, N applied, oxamyl treatments applied, spiked rotary cultivated, potatoes planted: 5 Apr. Weedkillers applied: 1 May. Irrigated: 21, 29, 31 May, 3 and 7 June. Mancozeb, pirimicarb and wetting agent applied: 20 July and 12 Aug. Mancozeb and wetting agent applied: 31 July. Potatoes lifted: 13 Aug. Previous crops: Potatoes since 1988.

NOTE: Soil samples were taken before planting and after each crop for nematode counts.

TOTAL TUBERS TONNES/HECTARE

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

COS OX	0.0	5.6	Mean
JAV OX			
0.0	28.3	40.3	34.3
2.8	33.2	45.5	39.4
5.6	33.0	32.5	32.7
Mean	31.5	39.4	35.5
M COS OX	0.0	5.6	Mean
	4.5	20.8	12.6

GRAND MEAN 29.8

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

JAV OX	COS OX	JAV OX
		COS OX
		& M COS OX
2.99	2.45	4.24

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

Stratum	d.f.	s.e.	cv%
BLOCK.WP	7	4.24	14.2

PLOT AREA HARVESTED 0.00090