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85/W/P/1 Varieties and Pcn Tolerance - Potatoes

Rothamsted Research

Rothamsted Research (1986) *85/W/P/1 Varieties and Pcn Tolerance - Potatoes* ; Yields Of The Field Experiments 1985, pp 322 - 325 - DOI: <https://doi.org/10.23637/ERADOC-1-19>

85/W/P/1

POTATOES

VARIETIES AND PCN TOLERANCE

Object: To study the effects of differing amounts of potato cyst nematode (PCN) infestation on four varieties differing in susceptibility - Woburn Horsepool.

Sponsors: A.G. Whitehead, K. Evans.

Design: 2 randomised blocks of 24 plots.

Whole plot dimensions: 2.84 x 6.10.

Treatments: All combinations of:-

1. PCN Potato cyst nematode infestation:
 MUCH 311 eggs per g of soil
 LITTLE 8 eggs per g of soil (duplicated)
2. VARIETY Varieties:
 CROWN Pentland Crown
 DELL Pentland Dell
 DESIREE Desiree
 PIPER Maris Piper
3. NEMACIDE Nematicide applied to the seedbed:
 NONE None
 OXAMYL Oxamyl at 5.6 kg

Basal applications: Manures: FYM at 50 t. (0:18:36) at 780 kg. (10:10:15+4.5Mg) at 2330 kg. Weedkillers: Linuron at 0.90 kg with paraquat at 0.50 kg ion in 500 l. Fungicides: Mancozeb at 1.4 kg in 250 l on six occasions, with the insecticide on the second occasion. Fentin acetate with maneb (as 'Brestan 60' at 0.5 kg) in 250 l. Insecticide: Pirimicarb at 0.14 kg.

Cultivations, etc.: - Straw burnt: 13 Aug, 1984. Heavy spring-tine cultivated: 14 Aug. FYM applied: 8-11 Jan, 1985. PK applied: 24 Jan. Ploughed: 31 Jan. NPK Mg applied: 9 Apr. Heavy spring-tine cultivated: 12 Apr. Oxamyl applied, rotary cultivated, potatoes planted: 22 Apr. Weedkillers applied: 29 May. Mancozeb applied: 20 June, 3 July, 23 July, 6 Aug, 14 Aug, 7 Sept. Insecticide applied: 3 July. 'Brestan 60' applied: 21 Aug. Haulm mechanically destroyed: 26 Sept. Lifted: 7 Oct. Previous crops: S. barley 1983, W. oats: 1984.

NOTE: Soil samples were taken before treatments were applied and after harvest for cyst and egg counts of PCN.

85/W/P/1

TOTAL TUBERS TONNES/HECTARE

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

VARIETY	CROWN	DELL	DESIREE	PIPER	MEAN
PCN					
MUCH	30.7	27.3	31.0	42.2	32.8
LITTLE	45.2	40.6	42.6	44.0	43.1
MEAN	40.4	36.1	38.7	43.4	39.7
NEMACIDE	NONE	OXAMYL	MEAN		
PCN					
MUCH	20.6	45.0	32.8		
LITTLE	38.9	47.2	43.1		
MEAN	32.8	46.5	39.7		
NEMACIDE	NONE	OXAMYL	MEAN		
VARIETY					
CROWN	33.6	47.2	40.4		
DELL	25.8	46.5	36.1		
DESIREE	31.4	46.0	38.7		
PIPER	40.4	46.4	43.4		
MEAN	32.8	46.5	39.7		
	NEMACIDE	NONE	OXAMYL		
PCN	VARIETY				
MUCH	CROWN	19.5	41.9		
	DELL	11.0	43.7		
	DESIREE	15.9	46.1		
	PIPER	35.9	48.4		
LITTLE	CROWN	40.6	49.8		
	DELL	33.3	47.8		
	DESIREE	39.1	46.0		
	PIPER	42.6	45.4		

85/W/P/1

TOTAL TUBERS TONNES/HECTARE

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

TABLE	PCN	VARIETY	NEMACIDE	PCN VARIETY	
SED	2.13	2.84	2.01	4.91	MIN REP
				4.25	MAX-MIN
				3.47	MAX REP

TABLE	PCN NEMACIDE	VARIETY NEMACIDE	PCN VARIETY NEMACIDE	
SED	3.47		6.95	MIN REP
	3.01	4.01	6.02	MAX-MIN
	2.46		4.91	MAX REP

PCN
 MIN REP WITHIN MUCH ONLY
 MAX-MIN MUCH V LITTLE
 MAX REP WITHIN LITTLE ONLY

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

STRATUM	DF	SE	CV%
BLOCK.WP	31	6.95	17.5

85/W/P/1

PERCENTAGE WARE 4.44 CM (1.75 INCH) RIDDLE

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

VARIETY	CROWN	DELL	DESIREE	PIPER	MEAN
PCN					
MUCH	94.7	85.9	85.6	95.4	90.4
LITTLE	96.1	93.6	94.3	95.3	94.8
MEAN	95.6	91.0	91.4	95.4	93.3
NEMACIDE	NONE	OXAMYL	MEAN		
PCN					
MUCH	86.2	94.7	90.4		
LITTLE	94.1	95.5	94.8		
MEAN	91.5	95.2	93.3		

PERCENTAGE WARE 4.44 CM (1.75 INCH) RIDDLE

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

NEMACIDE	VARIETY	NONE	OXAMYL	MEAN
	CROWN	95.3	95.9	95.6
	DELL	86.7	95.4	91.0
	DESIREE	87.7	95.1	91.4
	PIPER	96.2	94.5	95.4
	MEAN	91.5	95.2	93.3
PCN				
MUCH	NEMACIDE	NONE	OXAMYL	
	VARIETY			
	CROWN	93.8	95.6	
	DELL	77.4	94.5	
	DESIREE	76.8	94.5	
	PIPER	96.8	94.1	
LITTLE	CROWN	96.1	96.1	
	DELL	91.4	95.8	
	DESIREE	93.1	95.4	
	PIPER	95.9	94.8	

PLOT AREA HARVESTED 0.00087