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74/R/P/4 Blight and Aphid Reference Plots - Potatoes

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74/R/P/4

POTATOES

BLIGHT AND APHID REFERENCE PLOTS

Object: To study the separate and combined effects of sprays to control blight and aphids on potatoes - Pastures.

Sponsors: O.J. Stedman, R.W. Gibson.

Design: 4 randomised blocks of 7 plots split into 3.

Whole plot dimensions: 8.53 x 9.52. Sub plot area harvested: 0.00271.

Treatments: All combinations of:-

Whole plots: 1. Blight fungicide:

FUNGICIDE

None

None

Mancozeb applied on 2 occasions at
1.3 kg in 450 l: 23 July, 6 Aug

Mancozeb

2. Aphicide:

APHICIDE

None

None

Demeton-s-methyl applied on 2
occasions, starting early, on
8 July and 6 Aug, at 0.25 kg
in 370 l

DemetoEL

Demeton-s-methyl applied once on
6 Aug at 0.25 kg in 450 l

DemetoL

Sub plots: 3. Varieties:

VARIETY

King Edward

Edward

Majestic

Majestic

Pentland Crown

Crown

together with one extra treatment, sprayed mancozeb only and split
for varieties as above, plot used for sampling (no yields recorded).

Basal applications: Manures: (13:13:20) at 1510 kg. Weedkillers:

Linuron at 1.2 kg with paraquat at 0.42 kg ion in 450 l.

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Cultivations, etc.:— Ploughed: 23 Nov, 1973. Spring-tine cultivated: 17 Apr, 1974. NPK applied: 24 Apr. Spike rotary cultivated: 25 Apr. Seed planted: 26 Apr. Weedkiller applied: 21 May. Grubbed: 19 June. Rotary ridged: 21 June. Haulm mechanically destroyed: 10 Sept. Sprayed with undiluted BOV at 220 l: 16 Sept. Lifted: 25 Oct. Previous crops: Barley 1972, spring beans 1973.

- NOTES: (1) Aphids were counted fortnightly during June and July.
(2) Samples were taken for bulking and size distribution of tubers on 10, 18, 24 June, 8, 22 July, 5, 19 Aug, 2 and 16 Sept.
(3) Estimates were made of the percentage of haulm destroyed by blight and number of tubers affected by blight.

Standard errors per plot. Total tubers: tonnes/hectare.

Whole plot: 1.26 or 2.2% (15 d.f.)

Sub plot: 2.65 or 4.7% (36 d.f.)

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TABLES OF MEANS

TOTAL TUBERS: TONNES/HECTARE

	None	APHICIDE DemetoEL	DemetoL	Edward	VARIETY Majestic	Crown	Mean
FUNGCIDE							
None	54.5	55.6	55.4	56.0	51.2	58.3	55.2
Mancozeb	58.1	58.4	55.5	56.2	53.4	62.4	57.3
			APHICIDE				
			None	56.4	51.8	60.8	56.3
			DemetoEL	56.5	53.5	61.0	57.0
			DemetoL	55.4	51.7	59.3	55.4
Mean				56.1	52.3	60.4	56.3
APHICIDE	None		DemetoEL		DemetoL		
VARIETY	Edward	Majestic	Crown	Edward	Majestic	Crown	

FUNGCIDE									
None	56.2	49.9	57.5	56.2	52.4	58.3	55.7	51.3	59.2
Mancozeb	56.6	53.6	64.0	56.9	54.5	63.7	55.0	52.1	59.4

STANDARD ERRORS OF DIFFERENCES

FUNGCIDE	APHICIDE	VARIETY	FUNGCIDE APHICIDE	FUNGCIDE VARIETY	APHICIDE VARIETY	FUNGCIDE APHICIDE VARIETY
0.52	0.63	0.77	0.89	1.02	1.25	1.77
Except when comparing means with same levels of						
FUNGCIDE				1.08		
APHICIDE					1.33	
FUNGCIDE.APHICIDE						1.87

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PERCENTAGE WARE: 3.81 CM (1.5 INCH) RIDDLE

	None	APHICIDE			VARIETY				
		DemetoEL	DemetoL	Edward	Majestic	Crown	Mean		
FUNGICIDE									
None	95.8	95.6	95.8	94.2	94.8	98.3	95.8		
Mancozeb	95.0	95.1	95.5	93.3	94.2	98.1	95.2		
		APHICIDE							
			None	93.7	94.4	98.2	95.4		
			DemetoEL	93.9	94.0	98.2	95.4		
			DemetoL	93.7	95.1	98.2	95.7		
Mean				93.8	94.5	98.2	95.5		
APHICIDE	None		DemetoEL		DemetoL				
VARIETY	Edward	Majestic	Crown	Edward	Majestic	Crown			
FUNGICIDE									
None	94.6	94.5	98.4	94.2	94.3	98.4	93.8	95.5	98.1
Mancozeb	92.7	94.4	98.0	93.6	93.7	98.1	93.7	94.6	98.3