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Yields of the Field Experiments 1974

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74/R/RN/8 Cultivation/WEEDKILLER - Potatoes

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74/R/RN/8

CULTIVATION/WEEDKILLER

Object: To determine the long term effects of weedkillers and different methods of primary cultivation on a rotation of crops - Great Harpenden I.

Sponsors: J.R. Moffatt, G.V. Dyke, J.A. Currie.

The 14th year, potatoes.

For previous years see 'Details' 1967, 68/B/6(t), 69/R/RN/8(t), 70/R/RN/8, 71/R/RN/8(t), 72/R/RN/8 and 73/R/RN/8.

Design: 2 randomised blocks of 12 plots, split into 2.

Whole plot dimensions: 12.8 x 15.2. Sub plot area harvested: 0.00217.

Treatments: All combinations of:-

Whole plots: 1. Primary cultivations annually:-

CULTIVAT

Ploughed: 7 Nov, 1973, rotary harrowed: 23 Apr, 1974

Plough

Rotary cultivated: 6 Nov, 23 Apr

Rotavate

Deep-tine cultivated twice: 6 Nov, deep-tine cultivated and rotary harrowed: 23 Apr

Deeptine

2. Weed control to potatoes, 1974:-

WEEDCNTRL(74)

Mechanical, grubbed: 20 May, mechanically weeded twice:

30 May, grubbed: 20 June, rotary ridged: 22 June

Mechancl

Linuron at 1.2 kg, plus paraquat at 0.42 kg ion in 450 l: 17 May

Lin/Par

Linuron plus paraquat on 17 May, grubbed: 20 June, rotary ridged: 22 June

Lin/ParR

Sub plots: 3. Paraquat weedkiller to wheat stubble autumn 1973:-

WEEDKLLR(732)

None

None

Paraquat at 0.56 kg ion in 220 l: 12 Sept

Paraquat

4. Hormone weedkiller to wheat 1973:-

WEEDKLLR(731)

None

None

Ioxynil plus mecoprop

Ioxy/mec

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plus three extra treatments:-

EXTRA

Deep-tine cultivated twice and spike rotary cultivated: 23 Apr, given linuron plus paraquat, with sub plot treatments 3 and 4 above.

Spike

Shallow ploughed for wheat 1973, standard ploughing and spike rotary cultivation for potatoes, given linuron plus paraquat, whole plot given paraquat as 3 above, with sub plot treatment 4 above.

(Sh)Plgh

Standard cultivations as considered best for each crop, ploughed for potatoes: 6 Nov, 1973, spike rotary cultivated: 23 Apr, 1974 with sub plot treatments 3 and 4 above.

Standard

Basal applications: Manures: (13:13:20) at 1510 kg. Weedkiller: Paraquat at 0.56 kg ion in 220 l. Fungicide: Mancozeb at 1.3 kg in 450 l on two occasions. Insecticide: Demeton-s-methyl at 0.25 kg with mancozeb on first occasion.

Seed: Pentland Crown.

Cultivations, etc.: - NPK applied: 17 Apr, 1974. Basal weedkiller applied: 18 Apr. Potatoes planted: 24 Apr. Fungicide applied: 11 July and 2 Aug. Insecticide applied: 11 July. Haulm mechanically destroyed: 10 Sept. Sprayed with undiluted BOV at 220 l: 16 Sept. Lifted: 31 Oct.

Standard errors per plot (omitting EXTRA plots). Total tubers: tonnes/hectare.
Whole plot: 4.17 or 7.1% (8 d.f.)
Sub plot: 3.86 or 6.6% (8 d.f.)

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TABLES OF MEANS

TOTAL TUBERS: TONNES/HECTARE

	Plough	CULTIVIN Rotavate	Deeptine	Mean	Spike	EXTRA (Sh)Plgh	Standard
Mean	60.4	57.5	58.0	58.6	50.5	62.3	60.2
WEEDCNTL(74)							
Mechancl	58.9	54.5	55.6	56.4			
Lin/Par	63.1	59.1	57.6	59.9			
Lin/ParR	59.2	59.0	60.7	59.6			
WEEDKLR(732)							
None	60.3	58.1	56.3	58.2	49.5		60.6
Paraquat	60.5	57.0	59.7	59.0	51.4	62.3	59.8
WEEDKLR(731)							
None	59.6	57.5	55.7	57.6	51.2	61.0	61.4
Ioxy/mec	61.2	57.6	60.3	59.7	49.8	63.6	59.0

STANDARD ERRORS OF DIFFERENCES

CULTIVIN	WEEDCNTL(74)	WEEDKLR(732)	WEEDKLR(731)	CULTIVIN	CULTIVIN	CULTIVIN
WEEDCNTL(74)				WEEDCNTL(74)	WEEDKLR(732)	WEEDKLR(731)

2.41	2.41	1.29	1.29	4.17	2.88	2.88
Except when comparing means with same level of CULTIVIN						
GRAND MEAN	58.4			2.23	2.23	

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PERCENTAGE WARE: 3.81 CM (1.5 INCH) RIDDLE

	CULTIVIN			Mean	Spike	EXTRA	
	Plough	Rotavate	Deeptine			(Sh)Plgh	Standard
Mean	99.4	99.3	99.3	99.3	98.9	99.2	99.1
WEEDCNTL(74)							
Mechanc1	99.3	99.2	99.3	99.3			
Lin/Par	99.4	99.3	99.4	99.4			
Lin/ParR	99.6	99.3	99.2	99.3			
WEEDKLR(732)							
None	99.5	99.5	99.3	99.4	98.8		99.0
Paraquat	99.4	99.1	99.3	99.2	99.0	99.2	99.2
WEEDKLR(731)							
None	99.5	99.1	99.2	99.3	98.4	98.9	99.2
Ioxy/mec	99.4	99.4	99.4	99.4	99.4	99.5	99.0
GRAND MEAN				99.3			