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Rothamsted Research

Rothamsted Research (1974) 73/R/RN/8 - Cultivation/WEEDKILLER - Wheat ; Yields Of The Field Experiments 1973, pp 110 - 112 - DOI: <https://doi.org/10.23637/ERADOC-1-98>

73/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 13th year, winter wheat.

For previous years see 'Details' 1967, 68/B/6(t), 69/R/RN/8(t), 70/R/RN/8, 71/R/RN/8(t), and 72/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: 0.00434.

Treatments: All combinations of:-

Whole plots: (1) Primary cultivations annually:-	CULTIVATION
Ploughed: 18 Oct, 1972, power harrowed and disced: 24 Oct	Plough
Rotary cultivated: 9 Nov	Rotavate
Deep-tine cultivated twice: 18 Oct, spring-tine cultivated: 23 Oct	Deeptine
(2) Weed control to beans 1972:-	WEEDKILLER(72)
Mechanical	Mechanical
Simazine at 1.12 kg	Simazine
Dinoseb acetate at 6.73 kg	Dinoseb
Sub plots: (3) Paraquat to bean stubble:-	PARAQUAT
None	0.00
0.56 kg ion in 220 l: 5 Oct	0.56
(4) Weed control to wheat in 1973:-	WEEDKILLER(73)
None	None
Ioxynil at 0.63 kg and mecoprop at 1.9 kg in 220 l: 17 Apr, 1973	Ioxy/mec

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together with three extra plots, all of which received simazine at 1.12 kg to beans 1972:-

	EXTRA
Spike rotary cultivated: 17 Oct, with sub plot treatments (3) and (4) above	Spiked
Shallow ploughed: 18 Oct, power harrowed and disced: 24 Oct, whole plot received paraquat as (3) above, sub plot treatments (4) only	ShalloPl
Standard cultivation, ploughed for wheat: 18 Oct, power harrowed and disced: 24 Oct, with sub plot treatments (3) and (4)	Standard

NOTE: From 1973 only one phase of the rotation, wheat, potatoes, barley, beans, is maintained each year.

Basal applications: Manures: (10:24:24) at 250 kg combine drilled. 'Nitro-Chalk' at 375 kg.

Seed: Bouquet, sown at 200 kg.

Cultivations, etc.: - Seed sown: 9 Nov, 1972. N applied: 12 Apr, 1973.
Combine harvested: 24 Aug.

NOTE: Scores were made for weed infestation on all sub plots.

Standard errors per plot (omitting EXTRA plots). Grain, tonnes/hectare:

Whole plot: 0.476 or 8.0% (8 d.f.)

Sub plot: 0.411 or 6.9% (8 d.f.)

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TABLES OF MEANS
GRAIN: TONNES/HECTARE

	Plough	CULTIVIN Rotavate	Deeptine	Mean	Spiked	EXTRA ShalloPl	Standard
Mean	5.48	6.33	6.10	5.97	5.36	5.06	5.80
WEEDKLR(72)							
Mechancl	5.91	6.48	6.23	6.21			
Simazine	5.61	6.03	5.70	5.78			
Dinoseb	4.92	6.50	6.38	5.93			
PARAQUAT							
0.00	5.44	6.40	5.95	5.93	5.16		5.56
0.56	5.51	6.27	6.25	6.01	5.45	5.17	5.94
WEEDKLR(73)							
None	5.29	6.09	5.70	5.70	5.22	4.62	5.64
Ioxy/mec	5.67	6.58	6.50	6.25	5.50	5.49	5.97

STANDARD ERRORS OF DIFFERENCES

	WEEDKLR(72)	PARAQUAT WEEDKLR(73)	CULTIVIN WEEDKLR(72)	CULTIVIN WEEDKLR(73)
0.275	0.275	0.137	0.476	0.322
Except when comparing means with same level of: CULTIVIN				
Grand mean	5.83		0.237	0.237

Mean D.M. % 86.6