

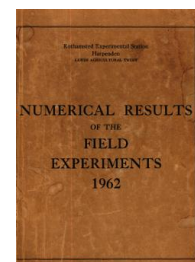
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62/W/B/11 Weedkiller-cultivation Rotation

Rothamsted Research

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62/B/11.1

WEEDKILLER CULTIVATION ROTATION

A comparison of weed control by various cultivation methods and by a pre-emergence weedkiller - Woburn Great Hill I and II 1962, the third year.

For history, rotation etc. see "Results of the Field Experiments" 60/B/11 and 61/B/11.

Area of each plot (acres): 0.0482. Area harvested: Potatoes - 0.0107 (X plots - 0.0054); barley - 0.0230.

Treatments:

Potatoes: All combinations of:-

Initial cultivations: Ploughed (P); rotary cultivated (R); rigid-tine cultivated (T).

Treatments after planting: Normal cultivations (M); prometryne* applied after planting (X); prometryne applied after early cultivations (Y).

Barley: All combinations of:-

Initial cultivations: As for potatoes.

Simazine to potatoes 1961: None (0); after planting (X); after early cultivations (Y).

*Prometryne at $2\frac{1}{2}$ lb active ingredient in 40 gallons per acre.

Basal dressings per acre:

Potatoes: 10 cwt compound fertiliser, 17% N, 11% P_2O_5 , 22% K_2O .

Barley: $3\frac{1}{2}$ cwt compound fertiliser, 16% N, 9% P_2O_5 , 9% K_2O , combine drilled.

Cultivations, etc.

Potatoes: Subsoiled: Oct 27, 1961. T plots rigid-tine cultivated 3 times: Nov 17. P plots ploughed: Nov 22. R plots rotary cultivated: Mar 2, 1962. P and T plots spring-tine cultivated: Mar 3 and 17. Basal dressing applied: Mar 19. Potatoes machine planted: Mar 20. M and Y plots chain harrowed: Apr 24. M and Y plots earthed up and harrowed: May 1. M and Y plots harrowed, X plots sprayed with prometryne: May 4. M and Y plots grubbed: May 14. Y plots earthed up: May 16 and 25. Y plots sprayed with prometryne, M plots harrowed: May 26. M plots grubbed and harrowed: May 31. M plots grubbed: June 15. M plots hand hoed: June 22. M plots earthed up: June 25. Sprayed twice with copper oxychloride fungicide at 2.3 lb Cu in 40 gallons per acre: July 23 and Aug 9. Haulm destroyed with diquat at 3 pints in 40 gallons per acre: Sept 22. Lifted: Oct 4. Variety: Majestic.

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Barley: Subsoiled: Oct 27, 1961. T plots rigid-tine cultivated twice: Nov 17. P plots ploughed: Nov 22. P and T plots spring-tine cultivated: Feb 23, 1962. R plots rotary cultivated, P and T plots spring-tine harrowed, seed drilled at $2\frac{1}{4}$ bushels per acre: Mar 2. Sprayed with MCPA/MBA at 4 pints in 40 gallons per acre: May 14. Combine harvested: Aug 30. Variety: Proctor.

Note: When potatoes of treatment X were sprayed sloping ground caused the delivery of a low rate of weedkiller affecting half of each plot. The affected halves were therefore mechanically cultivated and only the yields from the correctly treated halves were recorded.

Standard errors per plot.

Potatoes, total tubers: 1.761 tons per acre or 15.8% (8 d.f.)

Barley, grain (at 85% dry matter): 3.14 cwt per acre or 15.6% (8 d.f.)

Summary of Results

Potatoes

Treatments after planting	Initial cultivation			Mean
	P	R	T	
<u>Total tubers: tons per acre</u>				
		(± 1.245)		(± 0.719)
M	11.51	12.88	13.15	12.52
X	11.81	8.99	8.21	9.67
Y	10.36	11.37	12.31	11.35
Mean (± 0.719)	11.23	11.08	11.23	11.18
<u>Percentage ware ($1\frac{1}{2}$" riddle)</u>				
M	94.8	94.8	93.2	94.3
X	91.2	88.3	84.6	88.1
Y	91.9	92.7	92.4	92.3
Mean	92.7	91.9	90.1	91.6

Initial cultivations

P = Ploughed

R = Rotary cultivated

T = Rigid-tine

Treatments after planting

M = Normal cultivations

X = Prometryne applied after planting

Y = Prometryne applied after early cultivations

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Barley

Simazine to potatoes 1961	Initial cultivation			Mean
	P	R	T	
<u>Grain (at 85% dry matter): cwt per acre</u>				
		(±2.22)		(±1.28)
O	20.3	23.3	21.9	21.8
X	18.8	18.6	19.3	18.9
Y	18.8	21.4	18.3	19.5
Mean (±1.28)	19.3	21.1	19.8	20.1

Mean dry matter % as harvested: 83.6

Initial cultivation

P = Ploughed
 R = Rotary cultivated
 T = Rigid-tine

Simazine to potatoes 1961

O = None
 X = After planting
 Y = After early cultivations