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## Yields of the Field Experiments 1967

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### 67/R/CW/B/7 Cultivation-weedkiller Rotation

#### Rothamsted Research

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67/B/7.1

CULTIVATION - WEEDKILLER ROTATION

(CW)

Great Harpenden 1967 - the 7th year

A comparison of weed-control by various cultivation methods and by pre-emergence weedkillers.

For previous history, rotations, treatments etc., see 'Results' 61/B/10, 62/B/10, 63/B/10, 64/B/9, 65/B/8, 66/B/7.

Area harvested: Beans - 0.0100, wheat, potatoes and barley - 0.0107.

Revised basal dressings:-

Potatoes: 10 cwt (13:13:20).

Spring wheat: 3 cwt (25:10:10).

Barley: 3 cwt (25:10:10).

Wheat and barley: Basal post-emergence weedkiller was applied in 1967, the test of none v. weedkiller being omitted because of unusually large quantities of weeds.

NOTE: After the potato crop of 1966 all plots were spring-tine cultivated twice in autumn and once in spring. The resulting tilth on the A and B plots (which had had no other cultivation) was considered adequate and no other cultivations were done before sowing barley.

Cultivations, etc.:-

Spring beans: T plots deep-tine cultivated, depth 3-4 ins:

Nov 5, 1966. T plots deep-tine cultivated, depth 5-6 ins:

Nov 11. P and C plots ploughed: Nov 15. R plots rotary cultivated, depth 6 ins: Nov 17. B plots sprayed with paraquat at 0.75 lb ion in 40 gals: Nov 21. B plots deep-tine cultivated, depth 4-5 ins: Nov 29. P, C and T plots spring-tine cultivated:

Mar 4, 1967. P, C, T and B plots spring-tine cultivated:

Mar 7. A plots rotary cultivated, seed drilled at 200 lb, S plots sprayed: Mar 8. M and C plots tractor-hoed twice: May 2 and June 2. Sprayed with demeton-s-methyl (Metasystox at 12 fluid oz in 37 gals): June 13 and July 7 (the second spray to edges of blocks only). Sprayed by aircraft with demeton-s-methyl (Metasystox at 12 fluid oz in 3 gals): July 11. Combine harvested: Sept 1. Variety: Tarvin.

Spring wheat: Sprayed with aminotriazole at 4 lb and ammonium thiocyanate at 3.7 lb in 40 gals: Sept 19, 1966. T plots deep-tine cultivated, depth 3-4 ins: Nov 5, 1966. T plots deep-tine cultivated, depth 5-6 ins: Nov 12. P and C plots ploughed: Nov 14. R plots rotary cultivated, depth 6 ins: Nov 17. Plots spring-tine cultivated - B plots: Nov 29, P, T, C and B plots:

Mar 3, 1967, P and C plots: Mar 7, P, T, R and C plots: Mar 15. A plots rotary cultivated, seed drilled at 175 lb:

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Mar 15. All plots rolled: Apr 18. All plots sprayed with mecoprop/2,4-D (Methoxone Extra at 6 pints in 30 gals):  
May 12. Combine harvested: Aug 24. Variety: Kloka.  
Potatoes: T plots deep-tine cultivated, depth 3-4 ins: Nov 5, 1966.  
T plots deep-tine cultivated, depth 5-6 ins: Nov 12. P and C plots ploughed: Nov 14. R plots rotary cultivated: Nov 18.  
P, T and C plots deep-tine cultivated: Mar 20, 1967. Basal compound fertiliser applied: Mar 22. P, T and C plots spring-tine cultivated twice: Mar 29 and Apr 3. R, A and B plots rotary cultivated, potatoes machine planted: Apr 4. Ridges rolled: Apr 28. S plots sprayed: May 9. M and C plots grubbed: May 12. M plots mechanically weeded twice: May 13.  
C plots mechanically weeded twice: May 19. M and C plots grubbed: June 14. All plots sprayed with mancozeb at 1.2 lb in 30 gals: June 29. M, C and Y plots rotary ridged: June 30. All plots sprayed three times with mancozeb at 1.2 lb in 30 gals: July 20, Aug 4, Aug 24. Sprayed with undiluted BOV at 15 gals: Sept 6. Haulm destroyed mechanically: Sept 13. Lifted: Sept 14. Variety: Pentland Dell.  
Barley: All plots sprayed with sodium trichloroacetate at 18 lb in 40 gals: Oct 22, 1966. All plots spring-tine cultivated: Nov 1. All plots sprayed with sodium trichloroacetate at 18 lb in 40 gals: Nov 21. All plots spring-tine cultivated: Nov 29. T plots deep-tine cultivated, first stroke at 20, second at 40, depth 6-7 ins, P and C plots ploughed: Jan 17, 1967. R plots rotary cultivated, depth 6 ins: Feb 6. All plots spring-tine cultivated: Mar 4. P, T and C plots spring-tine cultivated, seed drilled at 140 lb: Mar 6. All plots rolled: Apr 18. All plots sprayed with mecoprop/2,4-D (Methoxone Extra at 6 pints in 30 gals): May 12. Combine harvested: Aug 21. Variety: Maris Badger.

Standard errors per whole plot.

Spring beans.	Grain:	2.93 or 9.6% (8 d.f.)
Wheat.	Grain:	6.22 or 15.7% (8 d.f.)
Potatoes.	Total tubers:	1.887 or 13.7% (8 d.f.)
Barley.	Grain:	1.94 or 4.2% (8 d.f.)

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SUMMARY OF RESULTS

	P	R	T	Mean
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SPRING BEANS

GRAIN

Mean ( $\pm 1.20$ )	32.5	29.7	29.9	30.7
M ( $\pm 2.08$ )	33.1	28.8	29.8	30.6 ( $\pm 1.20$ )
S ( $\pm 1.47$ )	32.2	30.1	30.0	30.8 ( $\pm 0.85$ )

	A	B	C
	32.9	31.9	30.6

General mean: 31.0

Mean D.M. %: 81.6

SPRING WHEAT

GRAIN

Mean ( $\pm 2.54$ )	37.5	41.6	40.1	39.7
M ( $\pm 4.40$ )	34.6	39.2	41.0	38.3 ( $\pm 2.54$ )
S ( $\pm 3.11$ )	38.9	42.8	39.6	40.5 ( $\pm 1.80$ )

	A	B	C
	42.4	45.8	43.6

General mean: 40.8

Mean D.M. %: 82.2

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	P	R	T	Mean
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POTATOES

TOTAL TUBERS

Mean ( $\pm 0.770$ )	14.76	13.35	13.11	13.74
		( $\pm 1.334$ )		( $\pm 0.770$ )
M	14.38	12.09	11.20	12.56
S	13.89	14.23	14.45	14.19
SY	16.00	13.73	13.68	14.47

	A	B	C
	15.50	14.50	12.23

General mean: 13.82

% WARE

Mean	97.7	96.5	96.2	96.8
M	97.9	97.2	96.8	97.3
S	97.4	96.5	94.2	96.1
SY	97.9	95.8	97.6	97.1

	A	B	C
	97.4	96.1	97.5

General mean: 96.8

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BARLEY

GRAIN

	P	R	T	Mean
Mean ( $\pm 0.79$ )	46.6	45.6	47.1	46.4
M	47.0	( $\pm 1.38$ ) 43.8	46.8	( $\pm 0.79$ ) 45.9
S	46.1	46.6	48.3	47.0
SY	46.7	46.4	46.1	46.4

A

B

C

44.4

45.6

45.0

General mean: 46.1

Mean D.M. %: 80.4