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68/B/6 Cultivation - Weedkiller Rotation - Beans, Wheat, Potatoes, Barley

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68/B/6.1

CULTIVATION - WEEDKILLER ROTATION

(CW)

Great Harpenden I 1968 - the 8th 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 and 'Details' 1967.

A comparison is now made of none v paraquat (G) applied to stubbles after beans, wheat and barley. This is made on half-plots, in all combinations with the test of O v H (post-emergence weedkiller to wheat and barley). The interaction (O v G) x (O v H) is confounded with blocks. Both tests are cumulative, except that in certain years H has been applied to all sub-plots. The first application of paraquat was in autumn 1967, at 0.75 lb ion in 32 gals.

NOTE: As in 1967 A and B plots after potatoes before barley received spring-tine cultivation and no other cultivations.

Area harvested: Beans - 0.0121, wheat, potatoes and barley - 0.0107.

Basal dressing to winter wheat: 2.5 cwt (6:15:15) combine drilled and 3 cwt 'Nitro-Chalk' in spring. All other crops as 1967.

Ground chalk: Spring beans - 23 cwt, winter wheat and potatoes - 46 cwt, barley - 92 cwt.

Cultivations, etc.:-

Spring beans: Paraquat applied to G sub-plots: 12 Oct, 1967. Ground chalk applied: 23 Nov. T plots deep-tine cultivated twice and B plots once: 24 Nov. P and C plots ploughed: 27 Nov. R plots rotary cultivated, depth 6 ins: 6 Dec. P, R, T, B and C plots spring-tine cultivated: 1 Mar, 1968. P, R, T and C plots spring-tine cultivated: 4 Mar. A plots rotary cultivated, seed drilled at 200 lb: 5 Mar. S plots sprayed: 8 Mar. M and C plots tractor-hoed three times: 26 Apr, 20 May and 31 May. Combine harvested: 11 Sept. Variety: Maris Bead.

Winter wheat: Paraquat applied to G sub-plots: 12 Oct, 1967. Ground chalk applied: 23 Nov. T plots deep-tine cultivated twice: 24 Nov. P, C and A plots ploughed: 27 Nov. P, T, A, B and C plots spring-tine cultivated twice, R plots rotary

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cultivated, seed drilled at 190 lb: 5 Dec. All plots harrowed: 25 Mar, 1968. 'Nitro-Chalk' applied: 12 Apr. H sub-plots and B plots sprayed with mecoprop at 42 oz and 2,4-D at 10.5 oz in 33 gals: 4 May. Combine harvested: 25 Aug. Variety: Cappelle.

Potatoes: Paraquat applied to G sub-plots: 12 Oct, 1967. Ground chalk applied: 23 Nov. T plots deep-tine cultivated twice: 24 Nov. P and C plots ploughed: 27 Nov. R plots rotary cultivated, depth 6 ins: 5 Dec. Basal compound fertiliser applied: 13 Mar, 1968. T plots deep-tine cultivated, P,C and R plots spring-tine cultivated (R plots in error), R plots rotary cultivated, P,C and T plots spring-tine cultivated. A and B plots rotary cultivated, potatoes machine planted: 29 Mar. M and C plots chain harrowed: 26 Apr. S plots sprayed: 3 May. M and C plots grubbed: 20 May, mechanically weeded: 24 May, rotary ridged: 28 May. M, C and Y plots grubbed: 7 June. M, C and Y plots rotary ridged: 12 June. All plots sprayed 3 times with mancozeb at 1.2 lb in 37 gals (the second time including demeton-s-methyl at 3.5 oz): 4 July, 19 July, 5 Aug. Sprayed with undiluted BOV at 15 gals: 30 Aug. Haulm destroyed mechanically 13 Sept. Lifted: 1 Oct.

Barley: All plots spring-tine cultivated twice and sprayed twice with sodium trichloroacetate at 18 lb in 32 gals: 28 Sept and 25 Oct, 1967. All plots spring-tine cultivated: 17 Nov. T plots deep-tine cultivated twice: 24 Nov. Ground chalk applied: 7 Dec. P and C plots ploughed, R plots rotary cultivated, depth 4 - 5 ins: 20 Dec. All plots spring-tine cultivated, seed drilled at 140 lb: 1 Mar, 1968. All plots rolled: 13 Mar. H sub-plots and B plots sprayed with mecoprop at 36 oz and 2,4-D at 9 oz in 33 gals: 4 May. Combine harvested: 21 Aug.

Standard errors per plot.

Spring beans:	Grain, whole plot:	1.43 or 6.9% (8 d.f.)
	sub plot:	0.91 or 4.4% (8 d.f.)
Winter wheat:	Grain, whole plot:	2.40 or 6.5% (8 d.f.)
	sub plot:	1.65 or 4.5% (8 d.f.)
Potatoes:	Total tubers, Whole plot:	1.472 or 8.7% (8 d.f.)
	Sub plot:	0.887 or 5.3% (8 d.f.)
Barley:	Grain, Whole plot:	2.80 or 7.9% (8 d.f.)
	Sub plot:	2.88 or 8.1% (9 d.f.)

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SUMMARY OF RESULTS

SPRING BEANS

	GRAIN			
	P	R	T	Mean
Mean (± 0.58)	22.3	21.2	19.9	21.1
M (± 1.01)	22.9	20.4	21.1	21.5 (± 0.58)
S (± 0.71)	22.0	21.6	19.3	21.0 (± 0.41)
	(1) and (2)			
O	22.4	20.4	20.4	21.1
G	22.2	22.0	19.4	21.2

(1) (± 0.64) For use in horizontal and diagonal comparisons only

(2) (± 0.37) For use in vertical and interaction comparisons only

A	AG	B	BG	C	CG
20.4	18.4	16.9	17.2	22.7	22.6

General mean: 20.8

Mean D.M. %: 76.9

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WHEAT

GRAIN

	P	R	T	Mean
Mean (± 0.98)	35.2	38.1	38.2	37.2
M (± 1.70)	38.0	37.5	38.9	38.1 (± 0.98)
S (± 1.20)	33.9	38.5	37.9	36.7 (± 0.69)
	(1) and (2)			
O	35.2	38.1	38.0	37.1
G	35.2	38.2	38.5	37.3
	(1) and (2)			
O	34.9	38.6	39.1	37.5
H	35.6	37.7	37.3	36.9

(1) (± 1.09) For use in horizontal and diagonal comparisons only(2) (± 0.67) For use in vertical and interaction comparisons only

A	AG	AH	AGH	BH	BGH	C	CG
32.9	38.0	34.0	30.4	30.9	35.3	39.8	39.9

General mean: 36.8

Mean D.M. %: 83.2

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POTATOES: TOTAL TUBERS

	P	R	T	Mean
Mean (± 0.425)	18.19	15.72 (± 0.736)	16.59	16.84 (± 0.425)
M	17.42	14.91	15.81	16.05
S	18.31	15.71	16.42	16.81
SY	18.83	16.55	17.55	17.65
		(1) and (2)		(± 0.209)
O	18.12	15.47	16.24	16.61
G	18.25	15.98	16.95	17.06

A AG B BG C CG
15.70 17.37 14.86 15.01 19.66 19.01

- (1) (± 0.496) For use in horizontal and diagonal comparisons only
(2) (± 0.362) For use in vertical and interaction comparisons only

General mean: 16.86

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POTATOES: % WARE

	P	R	T	Mean
Mean	98.9	98.9	98.9	98.9
M	98.9	98.7	98.8	98.8
S	98.8	98.8	98.9	98.8
SY	99.0	99.0	99.1	99.1
Q	98.9	99.0	98.8	98.9
G	98.9	98.7	99.0	98.9

A	AG	B	BG	C	CG
99.0	99.2	98.8	99.2	98.8	99.1

General Mean: 98.9

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BARLEY				
GRAIN				
	P	R	T	Mean
Mean (± 0.81)	36.3	35.0	35.8	35.7
		(± 1.40)		(± 0.81)
M	36.5	36.2	35.4	36.0
S	33.9	35.2	36.9	35.3
SY	38.5	33.4	35.0	35.6
		(1) and (2)		(± 0.68)
O	35.2	33.1	33.2	33.9
H	37.3	36.8	38.3	37.5
	A	AH	B	C
	33.4	36.5	34.7	32.2

- (1) (± 1.16) For use in horizontal and diagonal comparisons only
 (2) (± 1.17) For use in vertical and interaction comparisons only

General mean: 35.2

Mean D.M.%: 85.0