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# Numerical Results of the Field Experiments 1970

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## 70/R/RN/8 Cultivation/WEEDKILLER - Spring Beans, Winter Wheat, Potatoes, Barley

### Rothamsted Research

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## CULTIVATION/WEEDKILLER

(70/R/RN/8)

Beans, wheat, potatoes and barley, Great Harpenden I 1970, the 10th year. For previous history, rotations, treatments etc. see 'Details' 1967 and 'Results' 68/B/6 and 69/R/RN/8.

The barley variety is now Julia.

Area of each plot: 0.0482. Area harvested: Beans: 0.0121. Wheat, potatoes and barley: 0.0107.

### Cultivations, etc.:-

Spring beans: Barley straw burned on B plots: 29 Aug, 1969.

Paraquat applied to G sub-plots and to half of each B plot: 17 Sept. Paraquat applied to remaining B half-plots, T plots deep-tine cultivated twice: 6 Oct. B plots deep-tine cultivated: 7 Oct. P and C plots ploughed: 20 Oct. R plots rotary cultivated: 24 Nov. P, R, T, B and C plots power-harrowed: 20 Mar, 1970. A plots rotary-cultivated, all plots placement drilled at 200 lb: 21 Mar. S plots sprayed: 31 Mar. M plots tractor-hoed twice: 14 May, 5 June. Sprayed with demeton-s-methyl at 3.5 oz in 40 gals: 18 June. Combine harvested: 3 Sept.

Winter wheat: Bean straw raked off B plots (insufficient to burn): 7 Sept, 1969. Paraquat applied to G sub-plots and to half of each B plot: 17 Sept. Paraquat applied to remaining B half-plots, T plots deep-tine cultivated twice: 6 Oct. B plots deep-tine cultivated: 7 Oct. P, C and A plots ploughed: 10 Oct. T plots deep-tine cultivated: 11 Oct. P, T, A, B and C plots power-harrowed, R plots rotary cultivated: 13 Oct. P, C and A plots rolled: 14 Oct. P, C and A plots disced: 15 Oct. Seed combine drilled at 180 lb: 17 Oct. N applied: 28 Apr, 1970. All plots rolled: 3 May. H sub-plots and B plots sprayed with mecoprop/2,4-D ('Methoxone 4X' at 4.5 pints in 20 gals): 14 May. Combine harvested: 27 Aug.

Potatoes: Wheat straw burned on B plots: 3 Sept, 1969. Paraquat applied to G sub-plots and to half of each B plot: 17 Sept. Paraquat applied to remaining B half-plots, T plots deep-tine cultivated twice: 6 Oct. P and C plots ploughed: 20 Oct. R plots rotary cultivated: 24 Nov. Basal NPK applied: 17 Apr, 1970. R, A, B and C plots rotary cultivated, P and T plots power-harrowed, potatoes machine planted: 1 May. All ridges rolled:

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14 May. S plots sprayed: 23 May. M plots mechanically weeded and grubbed: 30 May. M and Y plots grubbed and rotary ridged: 17 June. Sprayed with mancozeb at 1.2 lb plus demeton-s-methyl at 3.5 oz in 40 gals: 29 July. Sprayed with mancozeb at 1.2 lb in 40 gals: 14 Aug. Sprayed with undiluted BGV at 15 gals: 14 Sept. Lifted: 16 Sept.

Barley: T and C plots deep-tine cultivated twice, B plots spring-tine cultivated: 8 Oct, 1969. P plots ploughed: 20 Oct. R plots rotary cultivated: 24 Nov. P, R, T, B and C plots power-harrowed: 20 Mar, 1970. A plots rotary cultivated, seed combine drilled at 140 lb: 21 Mar. H sub-plots and B plots sprayed with mecoprop/2,4-D ('Methoxone 4X' at 4 pints in 20 gals): 18 May. Combine harvested: 15 Aug.

Standard errors per plot.

Spring beans: Grain, cwt:	Whole plot: 1.34 or 24.3% (8 d.f.)
	Sub plot: 1.04 or 18.9% (8 d.f.)
Winter wheat: Grain, cwt:	Whole plot: 3.47 or 7.8% (8 d.f.)
	Sub plot: 2.26 or 5.1% (8 d.f.)
Potatoes: Total tubers, tons:	Whole plot: 2.054 or 15.2% (8 d.f.)
	Sub plot: 0.673 or 5.0% (8 d.f.)
Barley: Grain, cwt:	Whole plot: 5.07 or 13.4% (8 d.f.)
	Sub plot: 1.73 or 4.6% (8 d.f.)

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SUMMARY OF RESULTS

SPRING BEANS

GRAIN: CWT

	P	R	T	Mean
Mean ( $\pm 0.39$ )	7.6	4.3	4.6	5.5
M ( $\pm 0.67$ )	7.0	4.5	5.0	5.5 ( $\pm 0.39$ )
S ( $\pm 0.48$ )	7.9	4.1	4.4	5.5 ( $\pm 0.27$ )
	(1) and (2)			( $\pm 0.24$ )
O	7.5	3.9	4.1	5.2
G	7.7	4.6	5.1	5.8

A	AG	BG	C	CG
4.1	2.7	7.6	5.8	7.4

General mean: 5.6

Mean D.M. %: 75.6

(1) ( $\pm 0.49$ ) For use in horizontal and diagonal comparisons only

(2) ( $\pm 0.42$ ) For use in vertical and interaction comparisons only

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WINTER WHEAT

GRAIN: CWT

	P	R	T	Mean
Mean ( $\pm 1.00$ )	44.6	44.1	45.2	44.6
M* ( $\pm 1.73$ )	45.7	45.0	45.8	45.5 ( $\pm 1.00$ )
S* ( $\pm 1.22$ )	44.1	43.6	44.8	44.2 ( $\pm 0.71$ )
		(1) and (2)		( $\pm 0.53$ )
O	45.0	43.0	44.3	44.1
G	44.3	45.2	46.1	45.2
		(1) and (2)		( $\pm 0.53$ )
O	44.6	42.3	43.1	43.3
H	44.6	45.8	47.3	45.9

A	AG	AH	AGH	BGH	CH	CGH
40.8	39.2	37.9	47.7	41.5	41.2	47.5

General mean: 44.1  
 Mean D.M. %: 84.1

\* Applied 1969

- (1) ( $\pm 1.19$ ) For use in horizontal and diagonal comparisons only
- (2) ( $\pm 0.92$ ) For use in vertical and interaction comparisons only

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POTATOES

TOTAL TUBERS: TONS

	P	R	T	Mean
Mean ( $\pm 0.593$ )	12.99	12.99	14.56	13.51
		( $\pm 1.027$ )		( $\pm 0.593$ )
M	12.83	13.63	14.96	13.81
S	12.94	12.45	15.19	13.52
SY	13.21	12.88	13.54	13.21
		(1) and (2)		( $\pm 0.159$ )
O	12.38	13.23	14.47	13.36
G	13.61	12.74	14.66	13.67

A	AG	BG	C	CG
12.20	12.82	13.38	13.70	12.23

- (1) ( $\pm 0.624$ ) For use in horizontal and diagonal comparisons only  
 (2) ( $\pm 0.275$ ) For use in vertical and interaction comparisons only

General mean: 13.37

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POTATOES

WARE: 1.5 INCH

	P	R	T	Mean	
Mean	96.3	96.6	96.4	96.4	
M	97.4	97.0	96.5	97.0	
S	95.5	96.6	96.4	96.2	
SY	95.9	96.1	96.4	96.1	
O	96.0	96.3	96.5	96.3	
G	96.5	96.8	96.4	96.6	
	A	AG	BG	C	CG
	96.8	97.0	94.4	96.9	94.8

General mean: 96.2

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BARLEY

GRAIN: CWT

	P	R	T	Mean
Mean ( $\pm 1.46$ )	39.5	37.1 ( $\pm 2.54$ )	37.3	38.0 ( $\pm 1.46$ )
M*	39.7	37.6	37.5	38.3
S*	41.7	38.0	35.1	38.3
SY*	37.0	35.6	39.4	37.4
		(1) and (2)		( $\pm 0.41$ )
D	39.7	36.5	36.3	37.5
H	39.3	37.6	38.3	38.4

A	AH	BH	CH
42.3	44.1	41.2	39.4

- (1) ( $\pm 1.55$ ) For use in horizontal and diagonal comparisons only  
 (2) ( $\pm 0.71$ ) For use in vertical and interaction comparisons only

General mean: 38.8  
 Mean D.M. %: 85.4

\* Applied 1969