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## Yields of the Field Experiments 1971

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### 71/R/P/10 Spacing, Seed Size and Fertiliser - Potatoes

#### Rothamsted Research

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71/R/P/10

POTATOES

SPACING, SEED SIZE AND FERTILISER

Object: To study the effects of different spacings within and between rows, seed size and fertiliser rates on yield and size grades of potatoes - Whittlocks.

Design: 4 blocks of 8 plots, randomisation restricted. Plots split into 4.

Whole plot dimensions: N plots: 2.84 x 44.7. Sub plot area harvested: 0.00116.

W plots: 3.66 x 44.7. Sub plot area harvested: 0.00149.

Treatments:

Whole plots: All combinations of:-

1. Distance between rows: 71.1 cm (28 inches) (N), 91.4 cm (36 inches) (W).

2. Seed size: Small (S), large (L). All seed chitted.

3. Fertiliser rate: 1510 kg (F1), 2510 kg (F2) (13:13:20).

Sub plots:

4. Spacing of seed within the row: Seed 30.5 cm (12 inches) (3), 40.6 cm (16 inches) (4), 50.8 cm (20 inches) (5), 61.0 cm (24 inches) (6) apart within the row.

The seed was dusted with 4% 'Benlate' at approximately 3.57 kg per tonne, after being sorted into 2 seed sizes, 3.18 cm to 4.76 cm, and 4.76 cm to 5.72 cm, for the S and L treatments.

Basal applications: Manures: None. Weedkiller: Linuron at 0.84 kg in 427 l. Fungicide: Mancozeb at 1.35 kg in 438 l on 3 occasions. Insecticide: Demeton-s-methyl at 245 g applied with first mancozeb application.

Cultivations, etc.: Ploughed: 1 Oct, 1970. NPK applied to F1 plots: 6 Apr, 1971. NPK applied to F2 plots, all plots rotary cultivated: 20 Apr. Potatoes hand planted: 21 Apr. Weedkiller applied: 11 May. Fungicide plus insecticide applied: 24 June. Fungicide applied: 14 Aug, 16 Aug\*. Sprayed with undiluted BOV at 168 l: 16 Sept. Lifted: 27 Sept. Variety: King Edward. Previous crops: Spring wheat 1969, fallow 1970.

\* Because the spray on 14 Aug was followed by heavy rain.

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NOTE: After harvest a sample from the produce of each plot was graded into 6 sizes.

Standard errors per plot. Total tubers, tonnes/hectare.

Whole plot: 3.58 or 7.1% (21 d.f.)

Sub plot: 2.81 or 5.6% (72 d.f.)

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SUMMARY OF RESULTS

TOTAL TUBERS: TONNES/HECTARE

	S	L	F1	F2	3	4	5	6	Mean
	( $\pm 1.26$ )		( $\pm 1.26$ )		(1) and (2)				( $\pm 0.89$ )
N	51.0	54.4	51.2	54.2	54.6	52.2	51.6	52.4	52.7
W	46.5	49.4	46.3	49.6	49.5	48.6	46.9	46.8	48.0
			( $\pm 1.26$ )		(1) and (2)				( $\pm 0.89$ )
		S	47.6	49.9	50.9	48.7	47.5	47.8	48.8
		L	49.9	53.9	53.2	52.1	51.0	51.4	51.9
					(1) and (2)				( $\pm 0.89$ )
			F1		50.6	48.9	47.5	48.0	48.8
			F2		53.5	51.9	51.1	51.2	51.9
Mean					52.1	50.4	49.3	49.6	50.3
( $\pm 0.50$ )									

- (1) ( $\pm 1.08$ ) For use in vertical and diagonal comparisons only  
 (2) ( $\pm 0.70$ ) For use in horizontal and interaction comparisons only

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% WARE: 4.44 CM (1.75 INCH) RIDDLE

	S	L	F1	F2	3	4	5	6	Mean
N	69.0	69.0	67.5	70.5	62.2	67.0	71.1	75.5	69.0
W	75.5	74.4	74.8	75.1	70.5	73.4	75.2	80.7	75.0
		S	71.8	72.7	66.5	70.7	73.5	78.3	72.3
		L	70.5	72.9	66.3	69.7	72.9	78.0	71.7
				F1	64.0	70.0	72.1	78.4	71.1
				F2	68.8	70.4	74.3	77.9	72.8
Mean					66.4	70.2	73.2	78.1	72.0