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72/R/P/1 Potatoes Spacing, Seed Size and Fertiliser

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72/R/P/1

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 - Great Knott I.

Sponsors: G.A. Hide, J.M. Hirst, J.R. Moffatt, F.V. Widdowson.

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

Whole plot dimensions:

N plots - 2.84 x 44.7 W plots - 3.66 x 44.7.

Sub plot area harvested: 0.00116.

Treatments:

Whole plots: All combinations of:-

1. Row spacing (RS): 71.1 cm (28 inches) (N), 91.4 cm (36 inches) (W).
2. Seed size (SS): Small (S), large (L). All seed chitted.
3. Compound fertiliser (13:13:20) (F): 1510, 3020 kg.

Sub plots:

4. Spacing of seed within the row (SR): 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 5% '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 plus paraquat at 0.42 lb ion in 440 l. Fungicide: Mancozeb at 1.4 kg in 440 l on 3 occasions. Insecticide: Demeton-s-methyl at 0.25 kg on the second occasion with the mancozeb.

Seed: King Edward.

Cultivations, etc.: Ploughed: 5 Nov, 1971. NPK treatments applied: 22 - 24 Apr, 1972. Rotary cultivated: 26 Apr. Potatoes hand planted: 27 Apr. Weedkiller applied: 18 May. Fungicide applied: 11 July, 24 July, 11 Aug. Insecticide applied: 24 July.

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Sprayed with undiluted BOV at 200 l: 20 Sept. Lifted: 5 Oct.
Previous crops: Barley 1970, fallow 1971.

NOTE: Counts were made of plant and stem numbers after burning
off and before lifting. Tubers were graded into 6 sizes.

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

Whole plot: 2.68 or 6.6% (21 d.f.)

Sub plot: 2.82 or 6.9% (72 d.f.)

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TABLES OF MEANS

TOTAL TUBERS: TONNES/HECTARE

	SS		F		SR:CM				Mean
	Small	Large	1510	3020	30.5	40.6	50.8	61.0	
RS:CM									
71.1	42.6	43.4	40.6	45.4	42.6	42.9	42.9	43.5	43.0
91.4	38.6	39.0	36.4	41.2	37.3	37.9	40.6	39.5	38.8
	SS								
	Small		38.4	42.8	39.9	40.6	40.6	41.2	40.6
	Large		38.6	43.8	39.9	40.2	42.8	41.8	41.2
			F						
				1510	37.0	37.7	39.5	39.8	38.5
				3020	42.9	43.1	44.0	43.2	43.3
Mean					39.9	40.4	41.7	41.5	40.9

STANDARD ERRORS OF DIFFERENCES

RS	SS	F	SR	RS SS	RS F	SS F	RS SR	SS SR	F SR
0.95	0.95	0.95	0.70	1.34	1.34	1.34	1.28	1.28	1.28
Unless same levels of									
	RS						1.00		
	SS							1.00	
	F								1.00

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PERCENTAGE WARE: 4.44 CM (1.75 INCH) RIDDLE

	SS		F		SR:CM				Mean
	Small	Large	1510	3020	30.5	40.6	50.8	61.0	
RS									
71.1	70.4	62.9	63.2	70.1	59.3	65.9	68.7	72.6	66.6
91.4	77.1	70.2	71.8	75.5	67.4	73.2	75.8	78.2	73.7
	SS								
	Small		71.6	75.8	67.1	73.3	75.7	78.8	73.7
	Large		63.4	69.7	59.6	65.8	68.8	72.0	66.5
			F						
			1510		58.6	66.7	70.2	74.5	67.5
			3020		68.1	72.4	74.3	76.3	72.8
Mean					63.3	69.6	72.2	75.4	70.1