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# Yields of the Field Experiments 1974

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## 74/R/P/5 Spacing and Fertiliser - Potatoes

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# POTATOES

## SPACING AND FERTILISER

Object: To study the effects of different spacings within and between rows and of fertiliser rates on yields and size grades of two potato varieties - Pastures.

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

Design: 3 randomised blocks of 24 plots.

Whole plot dimensions: Narrow rows - 2.84 x 17.1, Wide rows - 3.66 x 17.1.  
Area harvested: Narrow rows - 0.00243, Wide rows - 0.00312.

Treatments: All combinations of:-

|                                                                                 |          |
|---------------------------------------------------------------------------------|----------|
| 1. Varieties:                                                                   | VARIETY  |
| King Edward                                                                     | Edward   |
| Pentland Crown                                                                  | Crown    |
| 2. Compound fertiliser (13:13:20) kg:                                           | FERT     |
| 1510                                                                            | 1510     |
| 3020                                                                            | 3020     |
| 3. Row spacing cm:                                                              | ROWSPACE |
| 71 (28 inches)                                                                  | 71       |
| 91 (36 inches)                                                                  | 91       |
| 4. Number of plants per hectare:                                                | PLANT HA |
| 37100 (by spacing seed at 38 cm on rows 71 cm apart, 30 cm on rows 91 cm apart) | 37100    |
| 29700 (seed 48 cm on 71 cm rows, 38 cm on 91 cm rows)                           | 29700    |
| 22200 (seed 61 cm on 71 cm rows, 48 cm on 91 cm rows)                           | 22200    |

Basal applications: Weedkiller: Linuron at 1.2 kg plus paraquat at 0.42 kg ion 450 l. Fungicide: Mancozeb at 1.3 kg in 450 l on two occasions.  
Insecticide: Demeton-s-methyl at 0.25 kg with mancozeb on first occasion.

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Cultivations, etc.:— Ploughed: 24 Nov, 1973. Spring-tine cultivated: 17 Apr, 1974. NPK applied: 29 Apr. Spike rotary cultivated: 30 Apr. Seed planted, narrow rows: 1 May, wide rows: 2 May. Reridged wide rows: 3 May. Weedkiller applied: 21 May. Fungicide and insecticide applied: 11 July. Fungicide applied: 2 Aug. Sprayed with undiluted BOV at 220 l: 16 Sept. Lifted: 28 Oct. Previous crops: Barley 1972, spring beans 1973.

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

Standard error per plot.

Total tubers: tonnes/hectare: 3.78 or 5.6% (46 d.f.)

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TABLES OF MEANS

TOTAL TUBERS: TONNES/HECTARE

|         | FERT     |       | ROWSPACE |       | PLANT HA |       |       | Mean |
|---------|----------|-------|----------|-------|----------|-------|-------|------|
|         | 1510     | 3020  | 71       | 91    | 37100    | 29700 | 22200 |      |
| VARIETY |          |       |          |       |          |       |       |      |
| Edward  | 62.6     | 65.4  | 68.6     | 59.4  | 64.2     | 64.8  | 63.0  | 64.0 |
| Crown   | 68.8     | 72.5  | 76.6     | 64.8  | 73.3     | 71.2  | 67.6  | 70.7 |
|         | FERT     |       |          |       |          |       |       |      |
|         | 1510     |       | 70.1     | 61.3  | 67.0     | 66.8  | 63.3  | 65.7 |
|         | 3020     |       | 75.0     | 62.9  | 70.4     | 69.1  | 67.3  | 68.9 |
|         |          |       | ROWSPACE |       |          |       |       |      |
|         |          |       | 71       |       | 74.4     | 73.8  | 69.6  | 72.6 |
|         |          |       | 91       |       | 63.1     | 62.1  | 61.1  | 62.1 |
| Mean    |          |       |          |       | 68.7     | 68.0  | 65.3  | 67.3 |
|         | ROWSPACE |       | 71       |       |          | 91    |       |      |
|         | PLANT HA | 37100 | 29700    | 22200 | 37100    | 29700 | 22200 |      |
| VARIETY | FERT     |       |          |       |          |       |       |      |
| Edward  | 1510     | 67.4  | 67.0     | 66.6  | 58.3     | 58.6  | 57.7  |      |
| Edward  | 3020     | 73.4  | 71.3     | 65.6  | 57.7     | 62.0  | 62.2  |      |
| Crown   | 1510     | 75.1  | 75.3     | 69.3  | 67.4     | 66.2  | 59.7  |      |
| Crown   | 3020     | 81.5  | 81.6     | 76.7  | 69.1     | 61.6  | 64.6  |      |

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TOTAL TUBERS: TONNES/HECTARE

STANDARD ERRORS OF DIFFERENCES

| VARIETY          | FERT             | ROWSPACE             | PLANT HA                                | VARIETY<br>FERT | VARIETY<br>ROWSPACE | VARIETY<br>PLANT HA |
|------------------|------------------|----------------------|-----------------------------------------|-----------------|---------------------|---------------------|
| 0.89             | 0.89             | 0.89                 | 1.09                                    | 1.26            | 1.26                | 1.54                |
| FERT<br>ROWSPACE | FERT<br>PLANT HA | ROWSPACE<br>PLANT HA | VARIETY<br>FERT<br>ROWSPACE<br>PLANT HA |                 |                     |                     |
| 1.26             | 1.54             | 1.54                 | 3.09                                    |                 |                     |                     |

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PERCENTAGE WARE: 4.44 CM (1.75 INCH) RIDDLE

| VARIETY | FERT |      | ROWSPACE |      | PLANT HA |       |       | Mean |
|---------|------|------|----------|------|----------|-------|-------|------|
|         | 1510 | 3020 | 71       | 91   | 37100    | 29700 | 22200 |      |
| Edward  | 84.1 | 86.9 | 84.7     | 86.3 | 83.8     | 85.3  | 87.5  | 85.5 |
| Crown   | 97.3 | 97.3 | 97.4     | 97.2 | 97.0     | 97.3  | 97.7  | 97.3 |
|         | FERT |      |          |      |          |       |       |      |
|         |      | 1510 | 90.1     | 91.3 | 89.6     | 90.5  | 92.0  | 90.7 |
|         |      | 3020 | 92.0     | 92.2 | 91.2     | 92.0  | 93.2  | 92.1 |
|         |      |      | ROWSPACE |      |          |       |       |      |
|         |      |      |          | 71   | 89.8     | 91.0  | 92.4  | 91.1 |
|         |      |      |          | 91   | 90.9     | 91.6  | 92.8  | 91.8 |
| Mean    |      |      |          |      | 90.4     | 91.3  | 92.6  | 91.4 |

| ROWSPACE |      | 71    |       |       | 91    |       |       |
|----------|------|-------|-------|-------|-------|-------|-------|
| PLANT HA |      | 37100 | 29700 | 22200 | 37100 | 29700 | 22200 |
| VARIETY  | FERT |       |       |       |       |       |       |
| Edward   | 1510 | 79.4  | 83.4  | 85.6  | 84.8  | 84.7  | 86.9  |
| Edward   | 3020 | 85.7  | 85.8  | 88.4  | 85.1  | 87.2  | 88.9  |
| Crown    | 1510 | 97.0  | 97.3  | 97.9  | 97.1  | 96.8  | 97.6  |
| Crown    | 3020 | 97.1  | 97.4  | 97.7  | 96.6  | 97.6  | 97.6  |