

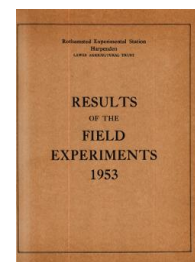
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## Yields of the Field Experiments 1953

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### 53/CE/2 Potatoes - Method of Planting - Rothamsted

#### Rothamsted Research

Rothamsted Research (1954) *53/CE/2 Potatoes - Method of Planting - Rothamsted* ; Yields Of The Field Experiments 1953, pp 93 - 95 - DOI: <https://doi.org/10.23637/ERADOC-1-173>

53/Ce/2.1

## POTATOES

Methods of planting and fertilizer application - Deacons Field 1953.

System of replication: 4 randomized blocks of 12 plots each, plots being split into 2 for the application of N and K with the NK interaction confounded with whole plot differences, and certain high order interactions confounded with block differences.

Area of each sub-plot: 0.0140 acre. Area harvested: 0.0105 acre.

### Treatments:

Whole plots: All combinations of:-

Compound granular fertilizer (7% N, 7% P<sub>2</sub>O<sub>5</sub>, 10.5% K<sub>2</sub>O):  
None; 7½; 15 cwt per acre.

Methods of planting and fertilizer application: Ridge, broadcast fertilizer, hand plant and split back at once (A); Ridge, expose ridges for 7 days, broadcast fertilizer over ridges, hand plant same time as A and split back ridges (B); Broadcast fertilizer on flat, plant from flat with dropper (C); plant from flat with dropper, fertilizers placed 2" to side of seed (D).

Sub plots: All combinations of:-

N: None; 0.53 cwt per acre applied as Sulphate of ammonia.

K<sub>2</sub>O: None; 0.79 cwt per acre applied as Muriate of potash.

Both N and K<sub>2</sub>O were applied as top dressings before the final earthing up.

Basal dressing: None.

Cultivations, etc.: Ploughed: Sept 15, 1952. Ridged 'B' plots: Apr 9, 1953. Ridged 'A' plots, fertilizers applied and potatoes planted on 'A' and 'B' plots: Apr 16. Fertilizers applied, potatoes planted on 'C' and 'D' plots: Apr 17. Top dressings applied, earthed up: June 30. Sprayed with copper fungicide, 5 lb per acre: Aug 1. Sprayed with sulphuric acid, 15% B.O.V: Sept 23. Lifted: Oct 5. Variety: Majestic. Previous crop: Barley.

Standard errors per plot, Total tubers:

Whole plot: 1.02 tons per acre or 8.6% (33 d.f.)

Sub plot: 0.550 tons per acre or 4.6% (26 d.f.)



53/Ce/2.2

Summary of Results

|                                | Compound fertilizer: cwt per acre |                              |                              |                              | Total tubers: tons per acre |       |       |       | Mean  |       |       |                 |       |
|--------------------------------|-----------------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-----------------|-------|
|                                | A                                 | B                            | C                            | D                            | A                           | B     | C     | D     |       |       |       |                 |       |
| N: cwt per acre                | None                              |                              |                              |                              | 7.5                         |       |       |       | 15.0  |       |       |                 |       |
| None                           |                                   |                              |                              |                              |                             |       |       |       |       |       |       |                 |       |
| 0.53                           |                                   |                              |                              |                              |                             |       |       |       |       |       |       |                 |       |
| Difference ( $\pm 0.389$ )     |                                   |                              |                              |                              |                             |       |       |       |       |       |       |                 |       |
|                                | ( $\pm 0.548$ ) <sup>#</sup>      | ( $\pm 0.387$ ) <sup>#</sup> | ( $\pm 0.548$ ) <sup>#</sup> | ( $\pm 0.548$ ) <sup>#</sup> |                             |       |       |       |       |       |       |                 |       |
| K <sub>2</sub> O: cwt per acre | 9.43                              | 7.89                         | 8.71                         | 12.29                        | 12.52                       | 11.69 | 11.85 | 14.75 | 14.73 | 14.99 | 15.31 | 11.91           |       |
| None                           | 8.66                              | 8.57                         | 9.04                         | 12.89                        | 13.02                       | 11.25 | 11.32 | 15.39 | 14.08 | 14.08 | 14.06 | 11.78           |       |
| 0.79                           | -0.77                             | +0.68                        | +0.33 <sup>(1)</sup>         | +0.60                        | +0.50                       | -0.44 | -0.53 | +0.64 | -0.65 | -0.91 | -1.25 | -0.13           |       |
| Difference ( $\pm 0.369$ )     |                                   |                              |                              |                              |                             |       |       |       |       |       |       | ( $\pm 0.112$ ) |       |
|                                | ( $\pm 0.548$ ) <sup>#</sup>      | ( $\pm 0.387$ ) <sup>#</sup> | ( $\pm 0.548$ ) <sup>#</sup> | ( $\pm 0.548$ ) <sup>#</sup> |                             |       |       |       |       |       |       |                 |       |
| K <sub>2</sub> O: cwt per acre | 8.77                              | 8.21                         | 8.88                         | 12.31                        | 13.16                       | 11.60 | 11.52 | 15.37 | 14.09 | 14.62 | 14.64 | 11.84           |       |
| None                           | 9.32                              | 8.25                         | 8.88                         | 12.87                        | 12.38                       | 11.34 | 11.65 | 14.77 | 14.72 | 14.46 | 14.73 | 11.85           |       |
| 0.79                           | +0.55                             | +0.04                        | 0.00 <sup>(1)</sup>          | +0.56                        | -0.78                       | -0.26 | +0.13 | -0.60 | +0.63 | -0.16 | +0.09 | +0.01           |       |
| Difference ( $\pm 0.369$ )     |                                   |                              |                              |                              |                             |       |       |       |       |       |       | ( $\pm 0.112$ ) |       |
| Mean                           | ( $\pm 0.512$ )                   | 9.05                         | 8.23                         | 8.88 <sup>(2)</sup>          | 12.59                       | 12.77 | 11.47 | 11.59 | 15.07 | 14.41 | 14.54 | 14.68           | 11.84 |

(1)  $\pm 0.275$  (2)  $\pm 0.362$

<sup>#</sup> for use in comparisons other than vertical.

Treatments A. Ridge, broadcast fertilizer, hand plant and split back ridges at once.  
 B Ridge, expose ridges for 7 days, broadcast fertilizer over ridges, hand plant, same time as A, split back ridges.  
 C Broadcast fertilizer on flat, plant from flat with dropper  
 D Plant from flat with dropper, fertilizer placement 2" to side of seed.

| K <sub>2</sub> O: cwt per acre | N: cwt per acre |       |
|--------------------------------|-----------------|-------|
|                                | None            | 0.53  |
| ( $\pm 0.296$ )                |                 |       |
| None                           | 11.84           | 11.83 |
| 0.79                           | 11.97           | 11.74 |



|                                | Compound fertilizer: cwt per acre |      |       |      |      |      |      |      |      |      | Mean |      |
|--------------------------------|-----------------------------------|------|-------|------|------|------|------|------|------|------|------|------|
|                                | None                              |      | 7.5   |      | 15.0 |      | A    |      | B    |      |      | C    |
|                                | A                                 | B    | C & D | A    | B    | C    | D    | A    | B    | C    | D    | D    |
| N: cwt per acre                | 87.4                              | 88.4 | 87.0  | 87.9 | 90.5 | 88.5 | 85.7 | 91.4 | 87.0 | 91.7 | 89.9 | 88.5 |
| None                           | 90.9                              | 87.8 | 87.3  | 88.4 | 88.2 | 90.5 | 83.6 | 89.4 | 86.8 | 86.4 | 88.8 | 87.9 |
| Difference                     | +3.5                              | -0.6 | +0.3  | +0.5 | -2.3 | +2.0 | -2.1 | -2.0 | -0.2 | -5.3 | -1.1 | -0.6 |
| K <sub>2</sub> O: cwt per acre | 88.4                              | 87.2 | 86.7  | 88.1 | 89.3 | 89.1 | 82.6 | 91.0 | 88.2 | 89.4 | 87.9 | 87.9 |
| None                           | 89.8                              | 89.0 | 87.6  | 88.2 | 89.4 | 89.9 | 86.8 | 89.8 | 85.6 | 88.7 | 90.8 | 88.6 |
| Difference                     | +1.4                              | +1.8 | +0.9  | +0.1 | +0.1 | +0.8 | +4.2 | -1.2 | -2.6 | -0.7 | +2.9 | +0.7 |
| Mean                           | 89.2                              | 88.1 | 87.1  | 88.1 | 89.3 | 89.5 | 84.7 | 90.4 | 86.9 | 89.1 | 89.3 | 88.2 |

Percentage ware

| Treatments  | N: cwt per acre |      | K <sub>2</sub> O: cwt per acre |      |
|---|-----------------|------|--------------------------------|------|
|   | A               | B    | None                           | 0.53 |
| Ridge, broadcast fertilizer, hand plant and split back ridges at once.  | 88.1            | 89.3 | 88.1                           | 89.3 |
| Ridge, expose ridges for 7 days, broadcast fertilizer over ridges, hand plant, same time as A, and split back ridges. | 88.1            | 89.3 | 88.1                           | 89.3 |
| Broadcast fertilizers on flat, plant from flat with dropper.  | 88.1            | 89.3 | 88.1                           | 89.3 |
| Plant from flat with dropper, fertilizer placement 2" to side of seed.  | 88.1            | 89.3 | 88.1                           | 89.3 |