

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED  
RESEARCH

# Yields of the Field Experiments 1953

[Full Table of Content](#)



## 53/BA/1 Three-course Rotation - Rothamsted

### Rothamsted Research

Rothamsted Research (1954) *53/BA/1 Three-course Rotation - Rothamsted* ; Yields Of The Field Experiments 1953, pp 13 - 19 - DOI: <https://doi.org/10.23637/ERADOC-1-173>

53/Ba/1.1

### THREE COURSE ROTATION EXPERIMENT

2nd year of revised scheme

For details of rotation, treatments etc., see "Results of the Field Experiments 1952", Section 52/Ba/1.

Area of each plot: Potatoes (sub-plot) - 0.0092 acre; Barley - 0.0200 acre; Sugar beet - 0.0205 acre.

#### Cultivations, etc.:

Potatoes: Straw applied, ploughed all plots: Jan 22, 1953.  
Fertilizers applied: Mar 25. Ridged: Mar 27. Potatoes planted with mechanical dropper: Apr 11. Earthed up ridges: June 25. Sprayed with copper fungicide,  $5\frac{1}{2}$  lb per acre: July 28 and again Aug 8. Haulm destroyed mechanically: Sept 17. Lifted: Sept 28. Variety: Majestic.  
Barley: Straw applied, ploughed all plots: Jan 22, 1953. Seed drilled at 3 bushels per acre, fertilizers applied: Feb 28. Harvested: Aug 11. Variety: Plumage Archer.  
Sugar beet: Straw applied, ploughed all plots: Jan 22, 1953. Fertilizers applied: Mar 18. Seed drilled at 18 lb per acre: Mar 26. Sprayed with D.D.T. emulsion, 3 pints in 10 gallons: May 11. Singled: May 31. Lifted: Nov 12. Variety: Klein E.

#### Treatment symbols

Ar Complete artificials only.  
St1 Straw ploughed in in autumn, artificials applied in spring.  
St2 Straw ploughed in in autumn, artificials applied half in autumn, half in spring.  
Ad Adco ploughed in in autumn with supplementary artificials.  
St  $5\frac{1}{3}$  cwt cut straw in autumn.  
Nitrogen dressing: 0.2, 0.4, 0.6 cwt N as sulphate of ammonia.  
K Muriate of potash equivalent to  $K_2O$  in straw.  
 $K^S$  0.5 cwt  $K_2O$  as muriate of potash.





53/Ba/1.3

| Treatments applied |                     | Potatoes |      |      |           |           |                |                |                       |   |   |
|--------------------|---------------------|----------|------|------|-----------|-----------|----------------|----------------|-----------------------|---|---|
| 1950               | 1951                | 1952     | 0    | 0.4N | St + 0.2N | St + 0.6N | K <sub>s</sub> | K <sub>s</sub> | K <sub>s</sub> + 0.4N |   |   |
|                    |                     |          | -    | -    | -         | -         | -              | -              | -                     | - | - |
|                    |                     |          | K    | K    | K         | K         | K              | K              | K                     | K | K |
|                    | Ar                  | 0        | 82.5 | 86.8 | 84.6      |           |                |                |                       |   |   |
|                    | 0.4N                | 0        | 87.3 | 85.3 | 87.4      |           |                |                |                       |   |   |
|                    | 0                   | 0.4N     | 82.2 | 87.7 | 91.2      | 85.6      | 88.3           | 86.7           | 89.5                  |   |   |
|                    | 0.4N                | 0        | 82.0 | 87.7 | 91.2      | 85.6      | 88.3           | 86.7           | 89.5                  |   |   |
|                    | 0.4N                | 0        | 82.0 | 87.7 | 91.2      | 85.6      | 88.3           | 86.7           | 89.5                  |   |   |
| St1 St2            | 0                   | 0.4N     | 82.0 | 87.7 | 91.2      | 85.6      | 88.3           | 86.7           | 89.5                  |   |   |
| St1 St2            | 0                   | 0.4N     | 82.0 | 87.7 | 91.2      | 85.6      | 88.3           | 86.7           | 89.5                  |   |   |
|                    | 0.4N                | 0        | 89.6 | 84.9 | 84.3      |           |                |                |                       |   |   |
|                    | St+0.2N             | 0        | 84.9 | 84.9 | 84.3      |           |                |                |                       |   |   |
|                    | St+0.6N             | 0        | 87.4 | 87.6 | 85.5      |           |                |                |                       |   |   |
|                    | K <sub>s</sub>      | 0        | 86.4 | 86.9 | 90.1      |           |                |                |                       |   |   |
|                    | K <sub>s</sub> 0.4N | 0        | 84.8 | 88.4 | 82.8      | 84.7      | 86.4           | 86.4           | 90.1                  |   |   |
|                    | 0                   | 0.4N     | 88.1 | 88.4 | 82.8      | 84.7      | 86.4           | 86.4           | 90.1                  |   |   |
| Ad                 | 0                   | 0.4N     | 87.7 | 88.4 | 82.8      | 84.7      | 86.4           | 86.4           | 90.1                  |   |   |
|                    | 0.4N                | 0        | 87.7 | 88.4 | 82.8      | 84.7      | 86.4           | 86.4           | 90.1                  |   |   |
|                    | St+0.6N             | 0        | 84.6 | 84.6 | 83.8      |           |                |                |                       |   |   |
|                    | K <sub>s</sub> 0.4N | 0        | 84.6 | 84.6 | 83.8      |           |                |                |                       |   |   |

Percentage ware



53/Ba/1.4

Barley

| Treatments applied  |         |                     | Barley |      |           |           |                |                       |
|---------------------|---------|---------------------|--------|------|-----------|-----------|----------------|-----------------------|
| 1950                | 1951    | 1952                | 0      | 0.4N | St + 0.2N | St + 0.6N | K <sub>s</sub> | K <sub>s</sub> + 0.4N |
| Grain: cwt per acre |         |                     |        |      |           |           |                |                       |
|                     | Ar      | 0                   |        | 31.2 |           |           |                |                       |
|                     |         | 0.4N                | 28.6   |      |           |           |                |                       |
| Ar                  |         | 0                   |        | 30.2 |           |           |                |                       |
|                     |         | 0.4N                | 31.5   |      |           |           |                |                       |
|                     | St1 St2 | 0                   |        | 27.4 |           | 31.4      |                | 27.3                  |
|                     |         | 0.4N                | 21.9   |      | 26.0      |           | 26.3           |                       |
| St1 St2             |         | 0                   |        | 30.4 |           |           |                |                       |
|                     |         | 0.4N                | 30.3   |      |           |           |                |                       |
|                     |         | St+0.2N             |        | 30.7 |           |           |                |                       |
|                     |         | St+0.6N             | 30.6   |      |           |           |                |                       |
|                     |         | K                   |        | 31.3 |           |           |                |                       |
|                     |         | K <sub>s</sub> 0.4N | 26.0   |      |           |           |                |                       |
|                     | Ad      | 0                   |        | 28.0 |           | 30.0      |                | 31.4                  |
| Ad                  |         | 0.4N                | 35.2   |      |           |           |                |                       |
|                     |         | St+0.6N             | 28.5   |      |           |           |                |                       |
|                     |         | K <sub>s</sub> 0.4N | 22.3   |      |           |           |                |                       |
| Straw: cwt per acre |         |                     |        |      |           |           |                |                       |
|                     | Ar      | 0                   |        | 44.8 |           |           |                |                       |
|                     |         | 0.4N                | 31.9   |      |           |           |                |                       |
| Ar                  |         | 0                   |        | 41.3 |           |           |                |                       |
|                     |         | 0.4N                | 33.7   |      |           |           |                |                       |
|                     | St1 St2 | 0                   |        | 40.2 |           | 41.4      |                | 36.8                  |
|                     |         | 0.4N                | 25.9   |      | 30.0      |           | 29.6           |                       |
| St1 St2             |         | 0                   |        | 41.9 |           |           |                |                       |
|                     |         | 0.4N                | 37.1   |      |           |           |                |                       |
|                     |         | St+0.2N             |        | 46.5 |           |           |                |                       |
|                     |         | St+0.6N             | 38.0   |      |           |           |                |                       |
|                     |         | K                   |        | 40.8 |           |           |                |                       |
|                     |         | K <sub>s</sub> 0.4N | 39.7   |      |           |           |                |                       |
|                     | Ad      | 0                   |        | 35.9 |           | 41.7      |                | 39.4                  |
| Ad                  |         | 0.4N                | 27.7   |      |           |           |                |                       |
|                     |         | St+0.6N             | 30.2   |      |           |           |                |                       |
|                     |         | K <sub>s</sub> 0.4N | 25.5   |      |           |           |                |                       |

53/Ba/1.5

| Treatments applied            |         |                     | Sugar beet |       |           |           |                |                       |
|-------------------------------|---------|---------------------|------------|-------|-----------|-----------|----------------|-----------------------|
| 1950                          | 1951    | 1952                | 0          | 0.4N  | St + 0.2N | St + 0.6N | K <sub>s</sub> | K <sub>s</sub> + 0.4N |
| Roots (washed): tons per acre |         |                     |            |       |           |           |                |                       |
|                               | Ar      | 0                   |            | 15.84 |           |           |                |                       |
|                               |         | 0.4N                | 12.07      |       |           |           |                |                       |
| Ar                            |         | 0                   |            | 15.12 |           |           |                |                       |
|                               |         | 0.4N                | 12.45      |       |           |           |                |                       |
|                               | St1 St2 | 0                   |            | 16.04 |           | 14.25     |                | 14.53                 |
|                               |         | 0.4N                | 12.09      |       | 12.31     |           | 14.62          |                       |
| St1 St2                       |         | 0                   |            | 15.19 |           |           |                |                       |
|                               |         | 0.4N                | 13.73      |       |           |           |                |                       |
|                               |         | St+0.2N             |            | 14.82 |           |           |                |                       |
|                               |         | St+0.6N             | 12.81      |       |           |           |                |                       |
|                               |         | K                   |            | 15.39 |           |           |                |                       |
|                               |         | K <sub>s</sub> 0.4N | 13.05      |       |           |           |                |                       |
|                               | Ad      | 0                   |            | 15.63 |           | 13.64     |                | 16.11                 |
| Ad                            |         | 0.4N                | 12.31      |       |           |           |                |                       |
|                               |         | St+0.6N             | 13.36      |       |           |           |                |                       |
|                               |         | K <sub>s</sub> 0.4N | 12.83      |       |           |           |                |                       |
| Sugar percentage              |         |                     |            |       |           |           |                |                       |
|                               | Ar      | 0                   |            | 17.98 |           |           |                |                       |
|                               |         | 0.4N                | 18.64      |       |           |           |                |                       |
| Ar                            |         | 0                   |            | 18.44 |           |           |                |                       |
|                               |         | 0.4N                | 18.60      |       |           |           |                |                       |
|                               | St1 St2 | 0                   |            | 18.81 |           | 18.67     |                | 18.52                 |
|                               |         | 0.4N                | 18.64      |       | 18.52     |           | 18.58          |                       |
| St1 St2                       |         | 0                   |            | 18.29 |           |           |                |                       |
|                               |         | 0.4N                | 18.18      |       |           |           |                |                       |
|                               |         | St+0.2N             |            | 18.44 |           |           |                |                       |
|                               |         | St+0.6N             | 18.38      |       |           |           |                |                       |
|                               |         | K                   |            | 17.74 |           |           |                |                       |
|                               |         | K <sub>s</sub> 0.4N | 18.23      |       |           |           |                |                       |
|                               | Ad      | 0                   |            | 18.34 |           | 18.55     |                | 17.74                 |
| Ad                            |         | 0.4N                | 18.26      |       |           |           |                |                       |
|                               |         | St+0.6N             | 17.86      |       |           |           |                |                       |
|                               |         | K <sub>s</sub> 0.4N | 18.35      |       |           |           |                |                       |



53/Ba/1.6

Sugar beet

| Treatments applied |         |                     | 1953                      | 0    | 0.4N | St + 0.2N | St + 0.6N | K <sub>s</sub> | K <sub>s</sub> + 0.4N |
|--------------------|---------|---------------------|---------------------------|------|------|-----------|-----------|----------------|-----------------------|
| 1950               | 1951    | 1952                | Total sugar: cwt per acre |      |      |           |           |                |                       |
|                    | Ar      | 0                   |                           | 57.0 |      |           |           |                |                       |
|                    |         | 0.4N                | 45.0                      |      |      |           |           |                |                       |
| Ar                 |         | 0                   |                           | 55.9 |      |           |           |                |                       |
|                    |         | 0.4N                | 46.5                      |      |      |           |           |                |                       |
|                    | St1 St2 | 0                   |                           | 60.2 |      | 53.3      |           |                | 53.7                  |
|                    |         | 0.4N                | 45.0                      |      | 45.4 |           | 54.1      |                |                       |
| St1 St2            |         | 0                   |                           | 55.4 |      |           |           |                |                       |
|                    |         | 0.4N                | 49.8                      |      |      |           |           |                |                       |
|                    |         | St+0.2N             |                           | 54.6 |      |           |           |                |                       |
|                    |         | St+0.6N             | 47.1                      |      |      |           |           |                |                       |
|                    |         | K <sub>s</sub>      |                           | 54.6 |      |           |           |                |                       |
|                    |         | K <sub>s</sub> 0.4N | 47.6                      |      |      |           |           |                |                       |
|                    | Ad      | 0                   |                           | 57.2 |      | 50.6      |           |                | 57.2                  |
| Ad                 |         | 0.4N                | 45.0                      |      |      |           |           |                |                       |
|                    |         | St+0.6N             | 47.6                      |      |      |           |           |                |                       |
|                    |         | K <sub>s</sub> 0.4N | 47.1                      |      |      |           |           |                |                       |
|                    |         |                     | Tops: tons per acre       |      |      |           |           |                |                       |
|                    | Ar      | 0                   |                           | 8.33 |      |           |           |                |                       |
|                    |         | 0.4N                | 5.91                      |      |      |           |           |                |                       |
| Ar                 |         | 0                   |                           | 7.31 |      |           |           |                |                       |
|                    |         | 0.4N                | 5.76                      |      |      |           |           |                |                       |
|                    | St1 St2 | 0                   |                           | 7.44 |      | 7.81      |           |                | 7.22                  |
|                    |         | 0.4N                | 5.63                      |      | 5.70 |           | 7.94      |                |                       |
| St1 St2            |         | 0                   |                           | 7.70 |      |           |           |                |                       |
|                    |         | 0.4N                | 6.68                      |      |      |           |           |                |                       |
|                    |         | St+0.2N             |                           | 7.73 |      |           |           |                |                       |
|                    |         | St+0.6N             | 6.92                      |      |      |           |           |                |                       |
|                    |         | K <sub>s</sub>      |                           | 7.73 |      |           |           |                |                       |
|                    |         | K <sub>s</sub> 0.4N | 6.13                      |      |      |           |           |                |                       |
|                    | Ad      | 0                   |                           | 8.82 |      | 6.79      |           |                | 8.64                  |
| Ad                 |         | 0.4N                | 6.22                      |      |      |           |           |                |                       |
|                    |         | St+0.6N             | 6.94                      |      |      |           |           |                |                       |
|                    |         | K <sub>s</sub> 0.4N | 5.87                      |      |      |           |           |                |                       |

53/Ba/1.7

| Treatments applied               |                     |                     | Sugar beet |      |           |           |                |                       |
|----------------------------------|---------------------|---------------------|------------|------|-----------|-----------|----------------|-----------------------|
| 1950                             | 1951                | 1952                | 0          | 0.4N | St + 0.2N | St + 0.6N | K <sub>s</sub> | K <sub>s</sub> + 0.4N |
| Plant number: thousands per acre |                     |                     |            |      |           |           |                |                       |
|                                  | Ar                  | 0                   |            | 26.9 |           |           |                |                       |
|                                  |                     | 0.4N                | 29.2       |      |           |           |                |                       |
| Ar                               |                     | 0                   |            | 29.6 |           |           |                |                       |
|                                  |                     | 0.4N                | 28.2       |      |           |           |                |                       |
|                                  | St1 St2             | 0                   |            | 28.4 |           | 27.3      |                | 28.0                  |
|                                  |                     | 0.4N                | 28.4       |      | 28.9      |           | 28.5           |                       |
| St1 St2                          |                     | 0                   |            | 27.9 |           |           |                |                       |
|                                  |                     | 0.4N                | 28.3       |      |           |           |                |                       |
|                                  |                     | St+0.2N             |            | 25.9 |           |           |                |                       |
|                                  |                     | St+0.6N             | 27.5       |      |           |           |                |                       |
|                                  |                     | K <sub>s</sub>      |            | 26.7 |           |           |                |                       |
|                                  | K <sub>s</sub> 0.4N |                     | 27.7       |      |           |           |                |                       |
|                                  | Ad                  | 0                   |            | 28.2 |           | 27.3      |                | 28.3                  |
| Ad                               |                     | 0.4N                | 29.6       |      |           |           |                |                       |
|                                  |                     | St+0.6N             | 28.6       |      |           |           |                |                       |
|                                  |                     | K <sub>s</sub> 0.4N | 29.0       |      |           |           |                |                       |
| Noxious nitrogen: mg. per 100 g. |                     |                     |            |      |           |           |                |                       |
|                                  | Ar                  | 0                   |            | 15.0 |           |           |                |                       |
|                                  |                     | 0.4N                | 15.0       |      |           |           |                |                       |
| Ar                               |                     | 0                   |            | 15.0 |           |           |                |                       |
|                                  |                     | 0.4N                | 15.0       |      |           |           |                |                       |
|                                  | St1 St2             | 0                   |            | 15.0 |           | 15.0      |                | 15.0                  |
|                                  |                     | 0.4N                | 15.0       |      | 15.0      |           | 15.0           |                       |
| St1 St2                          |                     | 0                   |            | 15.0 |           |           |                |                       |
|                                  |                     | 0.4N                | 15.0       |      |           |           |                |                       |
|                                  |                     | St+0.2N             |            | 25.0 |           |           |                |                       |
|                                  |                     | St+0.6N             | 15.0       |      |           |           |                |                       |
|                                  |                     | K <sub>s</sub>      |            | 25.0 |           |           |                |                       |
|                                  | K <sub>s</sub> 0.4N |                     | 15.0       |      |           |           |                |                       |
|                                  | Ad                  | 0                   |            | 15.0 |           | 25.0      |                | 15.0                  |
| Ad                               |                     | 0.4N                | 15.0       |      |           |           |                |                       |
|                                  |                     | St+0.6N             | 15.0       |      |           |           |                |                       |
|                                  |                     | K <sub>s</sub> 0.4N | 25.0       |      |           |           |                |                       |