

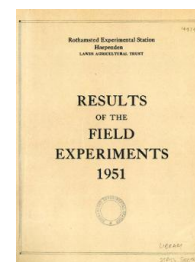
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# Yields of the Field Experiments 1951

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## Classical Experiments

### Rothamsted Research

Rothamsted Research (1952) *Classical Experiments* ; Yields Of The Field Experiments 1951, pp 4 - 12 - DOI: <https://doi.org/10.23637/ERADOC-1-171>

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## WHEAT - BROADBALK 1951

The 108th year

For details of treatments etc see Appendix Y 1950.

Cultivations, etc:

Cropped sections. Ploughed all except dung plots: Aug 24.  
 Dung applied and ploughed in: Sept 8. Autumn application of  
 artificials: Oct 23. Seed drilled at 3 bushels per acre:  
 Oct 25. Spring application of nitrogenous fertilizers:  
 Apr 11. Second dressing of nitrate of soda applied to plot  
 16: May 8. Harvested: Aug 21. Variety: Squareheads  
 Master (13/4).  
Fallow section. Ploughed: Aug 24, Apr 24 and July 9.

Summary of Results

|                    | Total Grain: cwt per acre |      |      |      |      | Total straw <sup>28</sup> : cwt per acre |      |      |      |      |
|--------------------|---------------------------|------|------|------|------|------------------------------------------|------|------|------|------|
| Section            | III                       | IV   | V    | II   | Mean | III                                      | IV   | V    | II   | Mean |
| Years after Fallow | 1                         | 2    | 3    | 4    |      | 1                                        | 2    | 3    | 4    |      |
| 2A                 | 30.7                      | 22.7 | 21.6 | 18.9 | 23.5 | 48.9                                     | 36.9 | 31.6 | 29.7 | 36.8 |
| 2B                 | 34.6                      | 23.4 | 22.3 | 21.0 | 25.3 | 52.8                                     | 39.2 | 33.6 | 33.4 | 39.8 |
| 3                  | 16.2                      | 8.4  | 8.4  | 8.1  | 10.3 | 23.2                                     | 11.7 | 11.5 | 11.0 | 14.4 |
| 5                  | 17.6                      | 8.0  | 7.8  | 10.4 | 11.0 | 28.9                                     | 11.5 | 11.0 | 18.9 | 17.6 |
| 6                  | 23.7                      | 10.8 | 8.8  | 12.2 | 13.9 | 35.9                                     | 17.8 | 15.1 | 22.9 | 22.9 |
| 7                  | 28.7                      | 17.5 | 13.2 | 14.1 | 18.4 | 50.7                                     | 36.5 | 27.8 | 28.7 | 35.9 |
| 8                  | 33.2                      | 23.9 | 22.3 | 20.6 | 25.0 | 60.0                                     | 53.7 | 42.3 | 44.8 | 50.2 |
| 9                  | 24.6                      | 17.8 | 14.2 | 13.3 | 17.5 | 42.2                                     | 31.7 | 27.0 | 24.3 | 31.3 |
| 10                 | 28.7                      | 19.5 | 13.8 | 13.8 | 19.0 | 45.0                                     | 31.4 | 23.2 | 22.3 | 30.5 |
| 11                 | 26.9                      | 15.0 | 15.2 | 14.6 | 17.9 | 36.1                                     | 25.6 | 24.7 | 22.5 | 27.2 |
| 12                 | 28.6                      | 20.9 | 17.6 | 15.7 | 20.7 | 38.4                                     | 33.0 | 29.4 | 23.7 | 31.1 |
| 13                 | 30.9                      | 15.9 | 11.9 | 17.3 | 19.0 | 50.0                                     | 31.1 | 23.1 | 33.2 | 34.4 |
| 14                 | 29.7                      | 15.7 | 18.4 | 16.0 | 20.0 | 42.8                                     | 28.7 | 28.6 | 25.0 | 31.3 |
| 15                 | 28.0                      | 13.5 | 8.1  | 13.2 | 15.7 | 40.3                                     | 21.7 | 12.0 | 19.9 | 23.5 |
| 16                 | 34.1                      | 22.6 | 19.5 | 23.2 | 24.8 | 61.8                                     | 43.5 | 39.2 | 37.8 | 45.6 |
| 17                 | 21.9                      | 8.9  | 6.7  | 6.3  | 11.0 | 33.4                                     | 13.2 | 7.2  | 9.9  | 15.9 |
| 18                 | 29.0                      | 14.6 | 12.5 | 17.5 | 18.4 | 45.9                                     | 24.7 | 22.0 | 30.3 | 30.7 |
| 19                 | 28.1                      | 14.8 | 12.5 | 15.2 | 17.6 | 39.0                                     | 24.8 | 19.5 | 19.5 | 25.7 |
| 20                 | -                         | -    | -    | 15.2 | 15.2 | -                                        | -    | -    | 28.0 | 28.0 |

<sup>28</sup> Includes straw, cavings and chaff.

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## BARLEY - HOOSFIELD 1954

The 100th Year

For details of treatments etc. see Appendix Y 1950.

Cultivations, etc.: Ploughed: Sept 4. Dung applied: Feb 1.  
 Fertilizers applied: Apr 21. Seed drilled at 3 bushels per  
 acre: Apr 25. Sprayed with D.N.O.C. 1 gallon per acre: June 26.  
 Harvested: Sept 11. Variety: Plumage Archer.

Summary of Results.

| Plot |     | Total Grain<br>cwt per acre | Total Straw <sup>#</sup><br>cwt per acre |
|------|-----|-----------------------------|------------------------------------------|
| 1    | O   | 8.5                         | 6.1                                      |
| 2    | O   | 8.0                         | 4.9                                      |
| 3    | O   | 6.9                         | 5.4                                      |
| 4    | O   | 11.1                        | 6.3                                      |
| 5    | O   | 6.0                         | 5.9                                      |
| 1    | A   | 9.9                         | 6.8                                      |
| 2    | A   | 13.1                        | 9.6                                      |
| 3    | A   | 15.1                        | 12.1                                     |
| 4    | A   | 12.8                        | 11.7                                     |
| 5    | A   | 7.5                         | 10.7                                     |
| 1    | AA  | 11.2                        | 9.5                                      |
| 2    | AA  | 19.5                        | 13.0                                     |
| 3    | AA  | 14.5                        | 13.0                                     |
| 4    | AA  | 18.5 <sup>†</sup>           | 14.5 <sup>†</sup>                        |
| 1    | AAS | 14.3                        | 10.6                                     |
| 2    | AAS | 16.4                        | 13.5                                     |
| 3    | AAS | 16.5                        | 12.9                                     |
| 4    | AAS | 19.7 <sup>†</sup>           | 16.3 <sup>†</sup>                        |
| 1    | C   | 14.3                        | 11.9                                     |
| 2    | C   | 21.4                        | 14.3                                     |
| 3    | C   | 16.3                        | 11.1                                     |
| 4    | C   | 19.0                        | 13.7                                     |
| 7    | - 1 | 9.8                         | 5.9                                      |
| 7    | - 2 | 21.3                        | 13.2                                     |
| 6    | - 1 | 5.9                         | 4.2                                      |
| 6    | - 2 | 6.8                         | 5.0                                      |
| 1    | N   | 16.2                        | 13.1                                     |
| 2    | N   | 14.0                        | 11.9                                     |

<sup>#</sup>Includes straw, cavings and chaff.<sup>†</sup>Estimated from the sum of 4 AA and 4 AAS.

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# WHEAT AFTER FALLOW - HOOSFIELD 1951

Without manure 1851 and since

For details of treatments etc. see Appendix Y 1950

Cultivations, etc.:

Cropped sections. Ploughed: Sept 14. Seed drilled at 3 bushels per acre: Oct 18. Harvested: Aug 24. Variety: Squareheads Master (13/4).

Fallow section. Ploughed: Sept 14, Apr 23 and July 10.

## Summary of Results

| Section<br>Years after<br>fallow | Mean yields: cwt per acre |         |          | Mean |
|----------------------------------|---------------------------|---------|----------|------|
|                                  | I<br>1                    | II<br>1 | III<br>3 |      |
| Total grain                      | 8.2                       | 7.8     | 9.3      | 8.4  |
| Total straw                      | 12.6                      | 11.9    | 12.7     | 12.4 |

# CROPS IN ROTATION - AGDELL 1951

Wheat - 4th crop of 26th course 1948-51

Cultivations, etc.:

Ploughed: Aug 10. Seed drilled at 3 bushels per acre: Oct 19.  
Harvested: Aug 20. Variety: Squareheads Master (13/4).

## Summary of Results

| Manure to<br>Turnips 1948 | Mean yields: cwt per acre |             |                               |             |                                            |             |
|---------------------------|---------------------------|-------------|-------------------------------|-------------|--------------------------------------------|-------------|
|                           | None since 1848           |             | Mineral Manure<br>No Nitrogen |             | Complete mineral and<br>nitrogenous manure |             |
| Rotation<br>Plot          | Fallow<br>5               | Clover<br>6 | Fallow<br>3                   | Clover<br>4 | Fallow<br>1                                | Clover<br>2 |
| Total Grain               | 13.1                      | 9.1         | 16.8                          | 12.5        | 16.4                                       | 15.2        |
| Total Straw               | -*                        | 17.4        | 24.6                          | 26.8        | 24.9                                       | 25.0        |

\*Weight of straw not available.

For details of treatments and rotation see Appendix Y.

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## MANGOLDS AND SUGAR BEET - BARNFIELD 1951

The 76th and 6th years

For details of treatments etc see Appendix 7, 1950

## Cultivations, etc:

Dung applied: Dec 29. Ploughed: Mar 6. Fertilizer applied: May 23. Seed drilled, mangolds - 9 lb per acre, sugar beet - 18 lb per acre: May 26. Singling commenced: June 27. Top dressings applied: July 19. Mangolds lifted: Nov 23. Sugar beet lifted: Dec 8. Varieties: mangolds - Yellow Globe, sugar beet - Klein E. Seed treated with phenol and magnesium sulphate.

Summary of Results

Yields: tons per acre

## Cross Dressings

| Strip            | O    | N         | A     | AC    | G     |
|------------------|------|-----------|-------|-------|-------|
| Mangolds: Roots  |      |           |       |       |       |
| 1                | 4.34 | 15.35     | 13.23 | 17.04 | 16.21 |
| 2                | 5.33 | 16.57     | 13.49 | 18.97 | 16.65 |
| 4                | 2.19 | (a) 11.99 | 8.13  | 9.95  | 12.04 |
|                  |      | (b) 13.87 |       |       |       |
| 5                | 1.89 | 11.81     | 5.10  | 3.25  | 4.63  |
| 6                | 1.68 | 11.03     | 9.69  | 11.19 | 10.68 |
| 7                | 2.11 | 11.56     | 10.78 | 12.26 | 12.13 |
| 8                | 0.89 | 5.71      | 1.88  | 2.35  | 4.06  |
| 9                | 7.25 |           |       |       |       |
| Mangolds: Leaves |      |           |       |       |       |
| 1                | 1.27 | 3.94      | 3.77  | 5.46  | 4.21  |
| 2                | 2.10 | 4.55      | 3.77  | 5.02  | 4.70  |
| 4                | 1.49 | (a) 4.75  | 3.50  | 3.72  | 4.72  |
|                  |      | (b) 4.94  |       |       |       |
| 5                | 1.05 | 3.77      | 1.88  | 2.52  | 3.47  |
| 6                | 1.03 | 3.77      | 3.94  | 4.70  | 4.57  |
| 7                | 1.15 | 3.62      | 4.31  | 5.97  | 4.72  |
| 8                | 0.59 | 3.62      | 1.52  | 2.32  | 2.76  |
| 9                | 4.89 |           |       |       |       |

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Yields: tons per acre

Cross Dressings

| Strip             | O    | N        | A     | AC    | C     |
|-------------------|------|----------|-------|-------|-------|
| Sugar Beet: Roots |      |          |       |       |       |
| 1                 | 5.31 | 6.19     | 9.53  | 9.49  | 10.28 |
| 2                 | 2.62 | 8.75     | 5.86  | 6.21  | 7.54  |
| 4                 | 1.26 | (b) 5.04 | 5.80  | 7.95  | 6.79  |
| 5                 | 0.83 | 4.94     | 3.28  | 3.18  | 2.97  |
| 6                 | 1.22 | 4.65     | 7.11  | 6.85  | 6.74  |
| 7                 | 1.30 | 6.58     | 7.56  | 6.67  | 6.30  |
| 8                 | 1.10 | 4.55     | 2.84  | 3.77  | 3.02  |
| Sugar Beet: Tops  |      |          |       |       |       |
| 1                 | 5.04 | 11.99    | 11.69 | 13.55 | 11.99 |
| 2                 | 2.59 | 11.60    | 5.04  | 7.98  | 9.00  |
| 4                 | 6.61 | (b) 5.43 | 8.46  | 13.01 | 9.44  |
| 5                 | 5.97 | 6.56     | 3.96  | 6.17  | 4.06  |
| 6                 | 6.26 | 4.60     | 8.37  | 9.59  | 7.88  |
| 7                 | 6.51 | 8.02     | 7.98  | 12.28 | 10.32 |
| 8                 | 7.14 | 7.49     | 4.16  | 6.51  | 5.68  |

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## HAY -- THE PARK GRASS PLOTS 1951

The 96th year

For details of treatments etc.: see Appendix Y 1950.

Cultivations, etc: Minerals applied: Feb 28. Nitrogenous fertilizers applied: 1st dressing - Mar 22, 2nd dressing - May 5. 1st cut: June 21. 2nd cut: Oct 2.

Summary of Results

| Plot | Yield of Hay: cwt per acre |                        |       |                    |                        |                    |
|------|----------------------------|------------------------|-------|--------------------|------------------------|--------------------|
|      | Not limed                  |                        |       | Limed              |                        |                    |
|      | 1st Crop                   | 2nd Crop <sup>NE</sup> | Total | 1st Crop           | 2nd Crop <sup>NE</sup> | Total              |
| 1    | 10.7                       | 9.1                    | 19.8  | 21.6               | 6.1                    | 27.7               |
| 2    | 14.0                       | 9.4                    | 23.4  | 16.1               | 4.6                    | 20.7               |
| 3    | 12.3                       | 7.9                    | 20.2  | 15.4               | 4.1                    | 19.5               |
| 4-1  | 16.0                       | 7.6                    | 23.6  | 17.0               | 8.0                    | 25.0               |
| 4-2  | 14.6                       | 3.6                    | 18.2  | 30.4               | 6.6                    | 37.0               |
| 5-1  | 15.0                       | 3.5                    | 18.5  |                    |                        |                    |
| 5-2  | 18.5                       | 8.9                    | 27.4  |                    |                        |                    |
| 6    | 33.6                       | 15.9                   | 49.5  |                    |                        |                    |
| 7    | 31.2                       | 17.1                   | 48.3  | 44.1               | 8.8                    | 52.9               |
| 8    | 29.2                       | 13.2                   | 42.4  | 23.6               | 6.5                    | 30.1               |
| 9    | 49.1                       | 9.9                    | 59.0  | 48.5               | 8.8                    | 57.3               |
| 10   | 27.8                       | 11.4                   | 39.2  | 39.7               | 8.9                    | 48.6               |
| 11-1 | 44.8                       | 20.1                   | 64.9  | 62.4               | 13.8                   | 76.2               |
| 11-2 | 61.3                       | 21.8                   | 83.1  | 75.4               | 21.2                   | 96.6               |
| 12   | 16.8                       | 8.9                    | 25.7  |                    |                        |                    |
| 13   | 37.6                       | 14.6                   | 52.2  | 38.5               | 11.9                   | 50.4               |
| 14   | 53.3                       | 18.4                   | 71.7  | 55.5               | 10.8                   | 66.3               |
|      |                            |                        |       | 44.1 <sup>NE</sup> | 5.1 <sup>NE</sup>      | 49.2 <sup>NE</sup> |
| 15   | 20.1                       | 11.1                   | 31.2  | 31.0               | 3.4                    | 34.4               |
| 16   | 40.1                       | 11.8                   | 51.9  | 40.5               | 9.2                    | 49.7               |
| 17   | 16.6                       | 9.6                    | 26.2  | 25.3               | 6.2                    | 31.5               |
| 18   | 17.0                       | 7.8                    | 24.8  | 36.7 <sup>†</sup>  | 10.1 <sup>†</sup>      | 46.8 <sup>†</sup>  |
|      |                            |                        |       | 34.7 <sup>††</sup> | 9.0 <sup>††</sup>      | 43.7 <sup>††</sup> |
| 19   | 30.6                       | 11.9                   | 42.5  | 27.2 <sup>†</sup>  | 6.0 <sup>†</sup>       | 33.2 <sup>†</sup>  |
|      |                            |                        |       | 30.5 <sup>††</sup> | 10.5 <sup>††</sup>     | 41.0 <sup>††</sup> |
| 20   | 37.8                       | 11.4                   | 49.2  | 40.6 <sup>†</sup>  | 8.5 <sup>†</sup>       | 49.1 <sup>†</sup>  |
|      |                            |                        |       | 41.2 <sup>††</sup> | 11.0 <sup>††</sup>     | 52.2 <sup>††</sup> |

NE Shade

NE These figures for the second crop are estimated hay yields calculated from the dry matter

† Heavy liming

†† Light liming.

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BARLEY - EXHAUSTION LAND HOOSFIELD 1951

For details of previous treatments etc. see Appendix Y, 1950.

Cultivations, etc.: Ploughed: Aug 29 and Jan 27. Seed drilled at 3 bushels per acre, sulphate of ammonia drilled: Apr 16. Harvested: Sept 3. Variety: Plumage Archer.

Summary of Results

| Plot | Total Grain:<br>cwt per acre | Total Straw:<br>cwt per acre |
|------|------------------------------|------------------------------|
| 1    | 13.6                         | 14.0                         |
| 2    | 12.7                         | 13.4                         |
| 3    | 22.9                         | 20.3                         |
| 4    | 25.1                         | 22.1                         |
| 5    | 15.2                         | 13.8                         |
| 6    | 11.2                         | 8.6                          |
| 7    | 24.1                         | 21.8                         |
| 8    | 23.8                         | 20.3                         |
| 9    | 23.4                         | 19.4                         |
| 10   | 26.4                         | 21.9                         |

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PERMANENT WHEAT - WOBURN STACKYARD 1951

For details of treatments etc. see Appendix Y 1950.

Cultivations, etc: Ploughed: Sept 8. Seed drilled at 3 bushels per acre: Oct 19. Nitrochalk applied: May 7. Sprayed with D.N.O.C: June 11. Harvested: Aug 20. Variety: Squareheads Master (13/4).

Summary of Results

| Plot    | Nitrochalk<br>dressing<br>cwt per acre | Total grain<br>cwt per acre | Total straw<br>cwt per acre |
|---------|----------------------------------------|-----------------------------|-----------------------------|
| 7       | 2                                      | 6.4                         | 10.9                        |
| 3       | 4                                      | 8.7                         | 13.3                        |
| 1       | 6                                      | 12.8                        | 20.5                        |
| 4       | 2                                      | 9.0                         | 14.6                        |
| 6       | 4                                      | 12.1                        | 15.9                        |
| 9       | 6                                      | 12.8                        | 16.7                        |
| 11b (1) | 2                                      | 7.1                         | 11.6                        |
| 11b (2) | 4                                      | 8.9                         | 14.3                        |
| 11b (3) | 6                                      | 14.8                        | 22.2                        |
| 10b     | 2                                      | 6.2                         | 12.8                        |
| 11a     | 4                                      | 12.4                        | 16.7                        |
| 10a     | 6                                      | 17.5                        | 23.5                        |

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# PERMANENT BARLEY - WOBURN STACKYARD 1951

For details of treatments etc. see Appendix Y 1950.

Cultivations, etc: Ploughed: Sept 7 and again Feb 7. Seed drilled at 3 bushels per acre, nitrochalk applied: Apr 23. Sprayed with D.N.O.C: June 8. Harvested: Sept 24. Variety: Plumage Archer.

## Summary of Results

| Plot    | Nitrochalk<br>dressing<br>cwt per acre | Total grain<br>cwt per acre |
|---------|----------------------------------------|-----------------------------|
| 7       | 2                                      | 4.0                         |
| 1       | 4                                      | 0.6                         |
| 3       | 6                                      | 3.3                         |
| 4       | 2                                      | 3.9                         |
| 6       | 4                                      | 4.6                         |
| 9       | 6                                      | 5.2                         |
| 11b (2) | 2                                      | 7.8                         |
| 11b (3) | 4                                      | 8.7                         |
| 11b (1) | 6                                      | 5.2                         |

Note Owing to the large amount of spurrey in the produce the straw was not weighed, nor was the grain for plots 10a, 10b and 11a.