

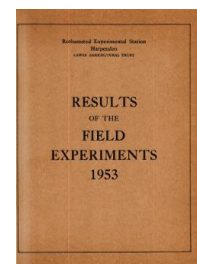
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# Yields of the Field Experiments 1953

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## Classical Experiments

### Rothamsted Research

Rothamsted Research (1954) *Classical Experiments* ; Yields Of The Field Experiments 1953, pp 4 - 12 - DOI: <https://doi.org/10.23637/ERADOC-1-173>

53/A/1

WHEAT - BROADBALK 1953

The 110th year

For history, details of treatments etc. see "Results of the Field Experiments 1939-47" Vol. I, Section A/1.

Cultivations, etc.:

Cropped sections. Dung applied and all plots ploughed: Sept 3, 1952.  
Autumn fertilizers applied: Nov 11. Seed drilled at 3 bushels per acre: Nov 12. Spring fertilizers applied: Apr 23, 1953.  
Second dressing of nitrate of soda applied to plot 16: May 13.  
Harvested: Aug 25. Variety: Squareheads Master 13/4.

Fallow section. Ploughed: Sept 3, 1952, Mar 22 and June 10, 1953.

Summary of Results

| Section<br>Years<br>after<br>Fallow | Grain: cwt per acre |      |      |      |      | Straw: cwt per acre |      |      |      |      |
|-------------------------------------|---------------------|------|------|------|------|---------------------|------|------|------|------|
|                                     | II                  | I    | III  | IV   | Mean | II                  | I    | III  | IV   | Mean |
|                                     | 1                   | 2    | 3    | 4    |      | 1                   | 2    | 3    | 4    |      |
| 2A                                  | 29.3                | 20.9 | 23.0 | 25.0 | 24.6 | 60.3                | 48.1 | 46.3 | 47.7 | 50.6 |
| 2B                                  | 24.8                | 22.4 | 23.4 | 25.0 | 23.9 | 57.9                | 62.1 | 46.2 | 53.5 | 54.9 |
| 3                                   | 16.5                | 13.7 | 13.2 | 12.4 | 14.0 | 35.1                | 28.8 | 21.0 | 21.2 | 26.5 |
| 5                                   | 11.6                | 12.9 | 8.4  | 13.8 | 11.7 | 32.6                | 33.9 | 22.8 | 26.0 | 28.8 |
| 6                                   | 17.9                | 17.3 | 16.3 | 14.9 | 16.6 | 46.5                | 40.6 | 35.2 | 32.5 | 38.7 |
| 7                                   | 16.3                | 22.3 | 22.6 | 20.4 | 20.4 | 46.9                | 53.4 | 47.0 | 44.0 | 47.8 |
| 8                                   | 21.9                | 22.6 | 22.9 | 28.1 | 23.9 | 48.8                | 58.8 | 53.8 | 55.7 | 54.3 |
| 9                                   | 19.9                | 18.5 | 17.9 | 16.4 | 18.2 | 45.8                | 46.1 | 35.3 | 30.3 | 39.4 |
| 10                                  | 16.4                | 25.5 | 20.2 | 19.1 | 20.3 | 34.7                | 44.4 | 35.4 | 35.8 | 37.6 |
| 11                                  | 16.0                | 24.0 | 19.8 | 17.2 | 19.2 | 31.7                | 41.2 | 35.8 | 34.1 | 35.7 |
| 12                                  | 18.6                | 24.7 | 21.4 | 19.0 | 20.9 | 36.3                | 50.3 | 41.1 | 38.8 | 41.6 |
| 13                                  | 24.2                | 24.3 | 22.6 | 18.6 | 22.4 | 46.6                | 47.9 | 45.3 | 35.7 | 43.9 |
| 14                                  | 16.8                | 23.5 | 22.6 | 19.1 | 20.5 | 37.9                | 39.8 | 41.5 | 39.8 | 39.8 |
| 15                                  | 25.7                | 19.9 | 19.4 | 14.9 | 20.0 | 51.6                | 37.9 | 40.2 | 31.0 | 40.2 |
| 16                                  | 24.1                | 22.5 | 20.3 | 17.6 | 21.1 | 51.9                | 49.6 | 48.7 | 48.9 | 49.8 |
| 17                                  | 20.2                | 14.7 | 14.9 | 8.5  | 14.6 | 36.2                | 25.5 | 25.4 | 19.8 | 26.7 |
| 18                                  | 23.9                | 26.1 | 20.7 | 21.0 | 22.9 | 49.2                | 47.5 | 44.5 | 42.8 | 46.0 |
| 19                                  | 19.3                | 19.5 | 15.8 | 15.4 | 17.5 | 38.1                | 40.7 | 35.1 | 32.6 | 36.6 |
| 20                                  | 21.1                | 27.8 | -    | -    | 24.4 | 35.5                | 49.8 | -    | -    | 42.6 |

53/A/2

BARLEY - HOOSFIELD 1953

The 102nd year

For history, details of treatments etc. see "Results of the Field Experiments 1939-47" Vol. I, Section A/2.

Cultivations, etc.: Ploughed: Sept 19, 1952. Dung applied and ploughed in: Sept 23. Fertilizers applied: Mar 3, 1953. Seed drilled at 3 bushels per acre: Apr 9. Sprayed with D.N.O.C.: May 26. Variety: Plumage Archer.

Note: Owing to the very heavy infestation with Wild Oats (*Avena Fatua*) the whole crop was cut and carted green before the oats ripened. No yields therefore were recorded.

53/A/3

WHEAT AFTER FALLOW - HOOSFIELD 1953

Without manure 1851 and since

For history, details of treatments etc. see "Results of the Field Experiments 1939-47", Vol. I, Section A/3.

Cultivations, etc.:

Cropped plots. Ploughed: Sept 6, 1952. Seed drilled at 3 bushels per acre: Oct 27. Harvested: Aug 20, 1953. Variety: Squareheads Master 13/4.

Fallow plots. Ploughed: Sept 6, 1952 and Sept 3, 1953.

Summary of Results

| Plot<br>No. of years<br>of fallow | Mean yields: cwt per acre |                |                | Mean |
|-----------------------------------|---------------------------|----------------|----------------|------|
|                                   | B <sub>2</sub>            | B <sub>3</sub> | B <sub>4</sub> |      |
|                                   | 1                         | 1              | 3              |      |
| Grain                             | 18.7                      | 8.3            | 13.7           | 13.6 |
| Straw                             | 24.9                      | 14.5           | 23.6           | 21.0 |

CROPS IN ROTATION - AGDELL 1953

Barley - 2nd crop of 27th course 1952-55

For history, details of treatments etc. see "Results of the Field Experiments 1939-47", Vol. I, Section A/4.

Cultivations, etc.: Ploughed: Sept 5, 1952, Seed drilled at 3 bushels per acre: Mar 2, 1953. Sprayed with MCPA, 2 pints per acre: May 26. Harvested: Aug 28. Variety: Plumage Archer.

Note: No turnips were grown and no manures were applied in 1952, the plots being fallowed.

Summary of Results

| Manure to<br>Turnips 1948 | Mean yields: cwt per acre |        |                               |        |   |        |
|---------------------------|---------------------------|--------|-------------------------------|--------|---|--------|
|                           | None since 1848           |        | Mineral manure<br>No nitrogen |        | Complete mineral<br>and nitrogenous<br>manure |        |
|                           | Fallow                    | Clover | Fallow                        | Clover | Fallow  | Clover |
| Rotation<br>Plot          | 5                         | 6      | 3                             | 4      | 1   | 2      |
| Grain                     | 5.7                       | 11.1   | 7.6                           | 16.2   | 3.6   | 5.0    |
| Straw                     | 5.8                       | 11.5   | 8.3                           | 16.4   | 4.8   | 8.9    |

MANGOLDS AND SUGAR BEET - BARNFIELD 1953

53/A/4.1

The 78th and 8th years

For history, details of treatments etc, see "Results of the Field Experiments 1939-47" Vol.I, Section A/5.

Cultivations, etc.: Dung applied: Jan 16. Ploughed: Jan 20.  
Fertilizers applied: Mar 19. Seed drilled, mangolds - 9 lb per acre, sugar beet - 18 lb per acre: Apr 10. Sprayed with D.D.T. emulsion: May 11. Singling commenced: June 22. Top dressings applied: July 14. Lifted: mangolds - Oct 29, sugar beet - Nov 11. Varieties: mangolds - Yellow Globe, sugar beet - Klein E.

Erratum to "Results of the Field Experiments 1939-47" Vol.I, page A/5.1, 6th line up: dressing for plot 4(b) should read "PCa" not "NPCa".

Summary of Results

| Strip                                      | Cross Dressing |                         |       |       |       |
|--|----------------|-------------------------|-------|-------|-------|
|  | O              | N                       | A     | AC    | C     |
| Mangolds, Roots: tons per acre             |                |                         |       |       |       |
| 1  | 7.02           | 26.33                   | 29.20 | 26.20 | 27.83 |
| 2  | 15.18          | 31.31                   | 30.11 | 33.65 | 33.08 |
| 4  | 3.07           | (a) 22.32<br>(b) 20.79* | 17.85 | 20.74 | 26.26 |
| 5  | 2.33           | 19.18                   | 12.96 | 13.61 | 21.61 |
| 6  | 2.43           | 17.75                   | 14.93 | 24.72 | 25.46 |
| 7  | 1.94           | 21.05                   | 19.42 | 27.83 | 27.83 |
| 8  | 1.19           | 15.13                   | 10.28 | 10.53 | 17.81 |
| 9  | 19.69          |                         |       |       |       |
| Mangolds, Leaves: tons per acre            |                |                         |       |       |       |
| 1  | 1.15           | 2.52                    | 5.26  | 4.09  | 4.80  |
| 2  | 2.35           | 2.84                    | 3.79  | 3.94  | 3.45  |
| 4  | 0.71           | (a) 2.50<br>(b) 2.08*   | 2.94  | 2.72  | 2.84  |
| 5  | 0.64           | 1.91                    | 2.45  | 2.89  | 3.01  |
| 6  | 0.69           | 1.74                    | 1.96  | 3.47  | 2.74  |
| 7  | 0.66           | 2.10                    | 2.84  | 4.28  | 3.33  |
| 8  | 0.71           | 2.08                    | 2.40  | 3.43  | 3.79  |
| 9  | 2.25           |                         |       |       |       |
| Mangolds, Plant number: thousands per acre |                |                         |       |       |       |
| 1  | 14.4           | 18.0                    | 16.9  | 15.9  | 17.8  |
| 2  | 18.7           | 18.2                    | 18.6  | 17.3  | 17.1  |
| 4  | 15.7           | (a) 19.5<br>(b) 20.7*   | 18.9  | 17.9  | 18.8  |
| 5  | 16.6           | 18.5                    | 17.8  | 16.6  | 18.8  |
| 6  | 15.6           | 19.3                    | 19.1  | 18.4  | 19.1  |
| 7  | 14.3           | 19.4                    | 19.4  | 20.3  | 18.8  |
| 8  | 13.9           | 18.4                    | 16.7  | 15.6  | 18.2  |
| 9  | 20.4           |                         |       |       |       |

\* No nitrate of soda. Nitrogen applied as calcium and potassium nitrates.

53/A/4.2

| Strip  | Cross Dressing |                        |       |       |       |
|--|----------------|------------------------|-------|-------|-------|
|  | O              | N                      | A     | AC    | C     |
| Sugar Beet, Roots: tons per acre             |                |                        |       |       |       |
| 1  | 7.28           | 18.24                  | 18.67 | 18.32 | 19.18 |
| 2  | 7.71           | 15.24                  | 13.02 | 15.76 | 17.13 |
| 4  | 2.46           | (b) 12.33 <sup>‡</sup> | 9.59  | 15.93 | 14.98 |
| 5  | 2.50           | 9.08                   | 8.56  | 12.76 | 13.61 |
| 6  | 2.02           | 9.59                   | 8.82  | 16.18 | 12.50 |
| 7  | 1.82           | 10.96                  | 10.36 | 16.01 | 12.42 |
| 8  | 1.63           | 9.33                   | 8.22  | 11.05 | 10.36 |
| Sugar Beet, Tops: tons per acre              |                |                        |       |       |       |
| 1  | 3.03           | 8.61                   | 11.50 | 10.28 | 8.91  |
| 2  | 3.72           | 7.24                   | 7.19  | 8.56  | 7.29  |
| 4  | 1.08           | (b) 5.19 <sup>‡</sup>  | 3.72  | 8.86  | 6.65  |
| 5  | 1.13           | 4.55                   | 4.45  | 10.28 | 6.65  |
| 6  | 0.83           | 4.99                   | 4.75  | 7.54  | 5.68  |
| 7  | 0.64           | 5.24                   | 4.99  | 10.67 | 5.28  |
| 8  | 0.83           | 5.09                   | 4.75  | 11.69 | 5.68  |
| Sugar Beet, Plant number: thousands per acre |                |                        |       |       |       |
| 1  | 18.6           | 21.5                   | 20.4  | 19.8  | 20.2  |
| 2  | 21.4           | 21.6                   | 22.1  | 20.6  | 19.3  |
| 4  | 20.6           | (b) 21.8 <sup>‡</sup>  | 22.5  | 21.1  | 20.0  |
| 5  | 19.8           | 21.9                   | 22.3  | 20.0  | 19.9  |
| 6  | 19.7           | 22.3                   | 21.1  | 21.7  | 20.7  |
| 7  | 20.5           | 22.3                   | 23.2  | 23.0  | 21.3  |
| 8  | 21.2           | 22.9                   | 22.3  | 21.9  | 19.6  |
| Sugar Beet, Sugar percentage                 |                |                        |       |       |       |
| 1  | 18.00          | 16.91                  | 17.45 | 17.22 | 17.66 |
| 2  | 17.37          | 17.37                  | 17.02 | 16.88 | 17.43 |
| 4  | 19.13          | (b) 18.06 <sup>‡</sup> | 17.60 | 17.48 | 17.86 |
| 5  | 18.12          | 16.39                  | 17.66 | 17.25 | 17.14 |
| 6  | 17.83          | 16.99                  | 17.51 | 17.14 | 18.72 |
| 7  | 17.71          | 18.12                  | 17.83 | 17.77 | 18.09 |
| 8  | 17.22          | 16.85                  | 17.60 | 17.05 | 17.37 |

<sup>‡</sup> No nitrate of soda. Nitrogen applied as calcium and potassium nitrates.

HAY - THE PARK GRASS PLOTS 1953

The 98th year

For history, details of treatments etc. see "Results of the Field Experiments 1939-47", Section A/6.

Cultivations, etc.: Dung applied: Dec 2, 1952. Mineral fertilizers applied: Dec 11. Nitrogenous fertilizers applied: 1st dressing - Mar 23, 1953, 2nd dressing - April 22. Cut: 1st - July 21, 2nd - Nov 19.

Summary of Results

Yield of Hay: cwt per acre

| Plot | Not limed |          |       | Limed    |          |       |
|------|-----------|----------|-------|----------|----------|-------|
|      | 1st Crop  | 2nd Crop | Total | 1st Crop | 2nd Crop | Total |
| 1    | 14.5      | 4.1      | 18.6  | 20.4     | 2.8      | 23.2  |
| 2    | 17.2      | 0.0      | 17.2  | 19.7     | 0.0      | 19.7  |
| 3    | 16.1      | 0.0      | 16.1  | 16.7     | 0.0      | 16.7  |
| 4-1  | 20.6      | 1.9      | 22.5  | 20.0     | 1.9      | 21.9  |
| 4-2  | 22.3      | 4.5      | 26.8  | 36.3     | 4.5      | 40.8  |
| 5-1  | 10.0      | 3.0      | 13.0  |          |          |       |
| 5-2  | 26.4      | 4.1      | 30.5  |          |          |       |
| 6    | 36.6      | 4.4      | 41.0  |          |          |       |
| 7    | 30.0      | 4.4      | 34.4  | 34.1     | 4.9      | 39.0  |
| 8    | 24.9      | 1.0      | 25.9  | 18.8     | 0.6      | 19.4  |
| 9    | 43.0      | 1.5      | 44.5  | 47.2     | 2.2      | 49.4  |
| 10   | 20.8      | 2.5      | 23.3  | 39.6     | 3.4      | 43.0  |
| 11-1 | 45.5      | 13.4     | 58.9  | 61.2     | 8.2      | 69.4  |
| 11-2 | 63.4      | 11.9     | 75.3  | 71.6     | 10.9     | 82.5  |
| 12   | 19.0      | 0.0      | 19.0  |          |          |       |
| 13   | 41.5      | 5.2      | 46.7  | 36.9     | 5.6      | 42.5  |
| 14   | 60.6      | 8.1      | 68.7  | 60.6     | 4.6      | 65.2  |
| 15   | 27.4      | 2.2      | 29.6  | 33.7     | 3.9      | 37.6  |
| 16   | 47.2      | 3.0      | 50.2  | 45.7     | 2.2      | 47.9  |
| 17   | 26.7      | 3.8      | 30.5  | 25.0     | 1.1      | 26.1  |
| 18   | 18.9      | 3.1      | 22.0  | 27.0*    | 2.2*     | 29.2* |
|      |           |          |       | 31.4†    | 2.9†     | 34.3† |
| 19   | 63.3      | 4.6      | 67.9  | 23.7*    | 3.0*     | 26.7* |
|      |           |          |       | 43.6†    | 3.4†     | 47.0† |
| 20   | 38.5      | 3.4      | 41.9  | 38.3*    | 2.5*     | 40.8* |
|      |           |          |       | 39.8†    | 2.4†     | 42.2† |

\*Heavy liming

†Light liming

Note: The second crop was carted green; hay yields were estimated from the dry matter.

53/A/6

BARLEY - EXHAUSTION LAND HOOSFIELD 1953

For history, details of treatments etc. see "Results of the Field Experiments 1952", Section A/6.

Cultivations, etc.: Ploughed: Sept 4, 1952.  $2\frac{1}{2}$  cwt sulphate of ammonia per acre applied: Feb 26, 1953. Seed drilled at 3 bushels per acre: Feb 27. Sprayed with M.C.P.A. 2 pints per acre: May 26. Variety: Plumage Archer.

Summary of Results

| Manuring to Potatoes 1876-1901*         | Grain<br>cwt per acre | Straw<br>cwt per acre |
|---|-----------------------|-----------------------|
| 1 Unmanured                             | 15.8                  | 18.2                  |
| 2 Unmanured after 6 years dung          | 11.8                  | 18.0                  |
| 3 Dung                                  | 22.4                  | 25.6                  |
| 4 Dung                                  | 22.8                  | 26.4                  |
| 5 Ammonium salts                        | 17.4                  | 19.3                  |
| 6 Nitrate of soda                       | 14.6                  | 18.2                  |
| 7 Ammonium salts and complete minerals  | 21.4                  | 24.2                  |
| 8 Nitrate of soda and complete minerals | 20.2                  | 23.4                  |
| 9 Superphosphate                        | 20.0                  | 24.4                  |
| 10 Complete minerals                    | 21.8                  | 25.7                  |

\*For certain changes see history.



53/4/7

WHEAT - WOBURN STACKYARD 1953

For history, details of treatments etc., see "Results of the Field Experiments 1939-47" Vol I, Section 4/7.

Cultivations, etc.: Ploughed: Aug 27, 1952. Seed drilled at 3 bushels per acre: Oct 10. Nitrochalk applied: Apr 20, 1953. Sprayed with DNOC 6 lb in 80 gallons: May 22. Harvested: Aug 18. Variety: Squareheads Master (13/4).

Summary of Results

| Plot    | Nitrochalk dressing<br>cwt per acre | Grain:<br>cwt per acre | Straw:<br>cwt per acre |
|---------|-------------------------------------|------------------------|------------------------|
| 1       | 2                                   | 7.9                    | 16.0                   |
| 7       | 4                                   | 10.1                   | 20.8                   |
| 3       | 6                                   | 13.8                   | 21.6                   |
| 9       | 2                                   | 7.4                    | 15.8                   |
| 4       | 4                                   | 12.1                   | 23.9                   |
| 6       | 6                                   | 17.9                   | 27.8                   |
| 11b (3) | 2                                   | 7.9                    | 15.9                   |
| 11b (1) | 4                                   | 13.8                   | 24.2                   |
| 11b (2) | 6                                   | 17.1                   | 26.9                   |
| 10a     | 2                                   | 7.6                    | 14.2                   |
| 10b     | 4                                   | 10.2                   | 19.2                   |
| 11a     | 6                                   | 17.7                   | 24.6                   |

53/4/8

BARLEY - WOBURN STACKYARD 1953

For history, details of treatments etc. see "Results of the Field Experiments 1939-47" Vol. I, Section A/7 with the exception that in 1952 it was decided to divide each plot into two, and sow one half with a Winter variety, and the other as before with a Spring variety.

Cultivations, etc.: Ploughed: Aug 26, 1952. 'Winter' seed drilled, at 3 bushels per acre: Oct 9. 'Spring' seed drilled at 3 bushels per acre: Mar 5, 1953. Nitrochalk applied: Mar 13. Sprayed with DNOC 6 lb in 80 gallons per acre: May 22. Harvested: Aug 17. Varieties: Winter - Pioneer, Spring - Plumage Archer.

Summary of Results

| Plot   | Nitrochalk dressing<br>cwt per acre | Grain: cwt per acre |             | Straw: cwt per acre |             |
|--------|-------------------------------------|---------------------|-------------|---------------------|-------------|
|        |                                     | Winter sown         | Spring sown | Winter sown         | Spring sown |
| 3      | 2                                   | 16.3                | 8.4         | 12.8                | 7.6         |
| 7      | 4                                   | 9.0                 | 15.9        | 10.6                | 13.6        |
| 1      | 6                                   | 8.3                 | 16.6        | 11.8                | 14.0        |
| 9      | 2                                   | 19.8                | 8.9         | 14.8                | 9.0         |
| 4      | 4                                   | 17.6                | 18.9        | 21.7                | 16.2        |
| 6      | 6                                   | 25.9                | 25.2        | 26.9                | 22.2        |
| 11b(1) | 2                                   | 20.3                | 14.2        | 21.0                | 12.1        |
| 11b(2) | 4                                   | 26.4                | 19.7        | 23.4                | 17.9        |
| 11b(3) | 6                                   | 31.1                | 24.4        | 34.5                | 22.0        |
| 11a    | 2                                   | 15.3                | 12.1        | 14.1                | 9.1         |
| 10a    | 4                                   | 6.6                 | 8.7         | 10.1                | 9.1         |
| 10b    | 6                                   | 15.1                | 11.6        | 16.1                | 9.8         |