

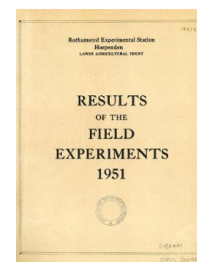
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Yields of the Field Experiments 1951

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Classical Experiments

Rothamsted Research

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51/A/1

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

| Section | Total Grain: cwt per acre | | | | | Total straw ²⁰ : cwt per acre | | | | |
|---------|---------------------------|------|------|------|------|--|------|------|------|------|
| | III | IV | V | II | Mean | III | IV | V | II | Mean |
| | 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 |

²⁰ Includes straw, cavings and chaff.

51/A/2

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 cwt per acre | Total Straw [#] 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 [†] | 14.5 [†] |
| 1 | AAS | 14.3 | 10.6 |
| 2 | AAS | 16.4 | 13.5 |
| 3 | AAS | 16.5 | 12.9 |
| 4 | AAS | 19.7 [†] | 16.3 [†] |
| 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 |

[#]Includes straw, cavings and chaff.

[†]Estimated from the sum of 4 AA and 4 AAS.

51/A/3

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 | Mean yields: cwt per acre | | | Mean |
|--------------------|---------------------------|------|------|------|
| | I | II | III | |
| Years after fallow | 1 | 1 | 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 Turnips 1948 | Mean yields: cwt per acre | | | | | |
|------------------------|---------------------------|----------|----------------------------|----------|---|----------|
| | None since 1848 | | Mineral Manure No Nitrogen | | Complete mineral and nitrogenous manure | |
| Rotation Plot | Fallow 5 | Clover 6 | Fallow 3 | Clover 4 | Fallow 1 | Clover 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.

51/A/4.1

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 | | | | |

51/A/4.2

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 |

51/A/5

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 ^{NE} | Total | 1st Crop | 2nd Crop ^{NE} | 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 ^{NE} | 5.1 ^{NE} | 49.2 ^{NE} |
| 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 [†] | 10.1 [†] | 46.8 [†] |
| | | | | 34.7 ^{††} | 9.0 ^{††} | 43.7 ^{††} |
| 19 | 30.6 | 11.9 | 42.5 | 27.2 [†] | 6.0 [†] | 33.2 [†] |
| | | | | 30.5 ^{††} | 10.5 ^{††} | 41.0 ^{††} |
| 20 | 37.8 | 11.4 | 49.2 | 40.6 [†] | 8.5 [†] | 49.1 [†] |
| | | | | 41.2 ^{††} | 11.0 ^{††} | 52.2 ^{††} |

^{NE} Shade

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

[†] Heavy liming

^{††} Light liming.

51/A/6

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: cwt per acre | Total Straw: 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 |

51/A/7

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 dressing cwt per acre | Total grain cwt per acre | Total straw 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 |

51/A/8

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 dressing cwt per acre | Total grain 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.