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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 <sup>20</sup> : 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

<sup>20</sup> 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 <sup>#</sup> 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.

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 <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>

<sup>NE</sup> Shade

<sup>NE</sup> These figures for the second crop are estimated hay yields calculated from the dry matter

<sup>†</sup> Heavy liming

<sup>††</sup> 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.