

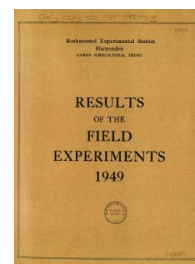
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# Yields of the Field Experiments 1949

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## Classicals

*Classicals*, Rothamsted Research (1950) Yields Of The Field Experiments 1949, pp 4 - 13

49/A/1.1

WHEAT - BROADBALK 1949

The 106th year

Treatments as listed in 1938 Report, p.p. 115-6, except that since the year 1940-41 rape cake has been replaced by castor bean meal, at the same rate of application.

Cultivations, etc.:

Cropped sections. Ploughed: Sept 2-16. Dung applied: Sept 11-12  
Springtime harrowed: Oct 22. Harrowed: Nov 11. Seed drilled:  
Nov 11-13. Artificials applied: Nov 11-15. Harrowed in: Nov 13-  
15. Harrowed: Apr 14. Ring rolled: Apr 19. Nitrogenous  
fertilizers applied: Apr 27. Weeds hand pulled: May 17-23.  
Second dressing of nitrate of soda applied to plot 16: May 23. Wild  
oats hand pulled: various days June 27 - July 6 and July 25-27.  
Harvested: Aug 5-6. Variety: Squareheads Master (13/4).  
Fallow section. Ploughed: Sept 2-16. Springtime harrowed: Oct 22.  
Ploughed: Jan 24-31. Springtime harrowed: Mar 22 and Apr 14.  
Thistles cut: May 30 and June 27. Ploughed: July 4-5. Harrowed:  
July 18. Ring rolled and harrowed: July 20.

49/4/1.2

Total Grain: cwt per acre						Total straw: <sup>x</sup> cwt per acre				
Section	V.	II	I	III	Mean	V	II	I	III	Mean
Years after Fallow	1	2	3	4		1	2	3	4	
Plot 2A	28.0	26.2	18.0	19.5	22.9	71.2	52.6	39.4	38.6	50.4
2B	32.4	28.8	23.3	14.9	24.8	79.5	56.6	52.1	52.4	60.2
3	21.6	10.4	9.8	9.9	12.9	34.3	15.5	15.8	16.2	20.4
5	22.9	7.3	8.5	11.5	12.6	39.0	14.9	18.8	20.3	23.2
6	27.1	12.3	12.7	12.6	16.2	46.4	22.0	26.1	23.8	29.6
7	32.2	18.1	14.3	16.1	20.2	55.6	29.9	27.0	29.8	35.6
8	30.5	24.1	21.5	15.5	22.9	58.3	42.2	43.1	39.4	45.8
9	29.4	13.8	13.3	13.0	17.4	54.2	23.3	24.5	24.4	31.6
10	23.9	20.4	14.9	11.4	17.6	38.1	31.1	26.8	25.2	30.3
11	20.5	20.4	18.8	16.1	19.0	35.3	31.6	34.4	26.5	32.0
12	24.6	21.1	19.5	16.5	20.4	44.9	34.6	33.1	28.1	35.2
13	29.4	15.6	17.7	17.6	20.1	53.6	32.3	32.2	32.7	37.7
14	28.2	22.3	21.9	18.6	22.3	47.1	35.8	31.7	28.7	35.8
15	26.9	15.2	13.2	16.7	18.0	55.0	33.6	27.3	49.5	41.4
16	30.9	22.9	17.4	20.9	23.0	58.4	37.5	34.9	33.4	41.0
17	21.4	7.6	6.0	6.9	10.5	40.2	12.5	11.2	12.8	19.2
18	30.1	15.5	14.2	23.1	20.7	50.7	26.6	28.6	37.4	35.8
19	29.6	18.1	17.5	19.1	21.1	51.1	40.1	31.9	35.7	39.7
20	-	15.7	16.2	-	16.0	-	30.4	22.1	-	26.2

\* Includes straw, cavings and chaff

49/4/2

## BARLEY - HOOSFIELD 1949

Treatments as listed in 1938 Report, p. 117, except that since 1940-41 rape cake has been replaced by castor bean meal at the same rate of application.

Cultivations, etc.: Ploughed: Sept 11-25. Dung applied: Sept 24.  
 Ploughed in: Sept 25. Reploughed: Dec 20-30. Springtime harrowed:  
 Feb 18. Thistles cut: Mar 23. Seed drilled and harrowed in:  
 Mar 24. Ring rolled: Mar 31. Sprayed with "Denocate" to kill off  
 weeds: May 13. Wild oats hand pulled: various days July 18-28.  
 Harvested: Aug 11. Variety: Plumage Archer.

Plot	Total Grain cwt per acre	Total Straw <sup>*</sup> cwt per acre
1 O	10.3	10.3
2 O	15.5	13.8
3 O	12.2	12.1
4 O	18.0	14.5
5 O	13.9	12.7
1 A	14.7	13.6
2 A	22.0	20.8
3 A	14.0	13.8
4 A	21.6	18.3
5 A	13.3	15.6
1 AA	16.4	17.3
2 AA	24.0	23.3
3 AA	19.6	17.4
4 AA	26.8	24.8
1 AAS	19.9	20.0
2 AAS	23.9	25.3
3 AAS	23.4	21.5
4 AAS	26.7	24.8
1 C	19.4	20.5
2 C	24.8	22.6
3 C	19.6	18.3
4 C	24.7	21.5
6 - 1	8.7	8.0
6 - 2	11.1	12.6
7 - 1	15.2	17.7
7 - 2	27.4	37.4
1 N	17.9	20.6
2 N	23.4	17.2

<sup>\*</sup> Includes straw, cavings and chaff



49/A/3

# WHEAT AFTER FALLOW - HOOSFIELD 1949

Without manure 1851 and since

For details of treatments see 1938 report p. 109.

## Cultivations, etc.:

Cropped sections: Ploughed: Sept 3-6. Harrowed twice:  
Oct 22. Seed drilled and harrowed in: Oct 23. Ring rolled:  
Apr 11. Harvested: Aug 16. Variety: Squareheads  
Master 13/4.

Fallow sections B3 ploughed: Sept 3. Remainder ploughed:  
Oct 1-2. All sections ploughed: Jan 3-13. Springtined:  
Mar 23 and Apr 14. Thistles cut: May 31 and June 27.  
Ploughed: July 5-6. Harrowed, ring rolled and harrowed:  
July 20.

Produce: cwt per acre

No. of years of Fallow	1	1	3	Mean
Section	B1	B4	B2	
Total Grain	13.5	13.0	13.5	13.3
Total Straw*	20.8	21.4	26.0	22.8

# CROPS IN ROTATION - AGDELL FIELD 1949

Barley, 2nd crop of 26th course (1948-51)

Cultivations, etc.: Ploughed: Nov 26-27. Springtined: Feb 28.  
Harrowed, seed drilled: Mar 18. Harrowed in: Mar 19.  
Ring rolled: Apr 1. Harrowed and ring rolled: Apr 16.  
Thistles pulled: May 23-30. Harvested: Aug 4. Variety:  
Plumage Archer.

Produce: cwt per acre

Manure to	Unmanured		Mineral Manure		Complete	
Turnips only	since 1848		No Nitrogen		Mineral and Nitrogenous Manure	
Rotation	Fallow	Clover	Fallow	Clover	Fallow	Clover
Plot	5	6	3	4	1	2
Total Grain	14.9	15.3	26.2	31.7	27.3	20.5
Total Straw*	17.9	19.6	28.1	34.6	28.8	31.6

\* Includes straw, cavings and chaff.

49/4/4.1

## MANGOLDS AND SUGAR BEET - BARNFIELD 1949

Treatments as listed in 1938 Report, p. 110, except that on cross dressings AC and C, rape cake has been replaced by castor bean meal at the same rate of application.

Cultivations, etc.: Dung applied: Nov 20. Ploughed: Nov 23-26.  
Cultivated: Apr 12 and 13. Manures applied: May 4-6. Thistles cut: May 6. Harrowed, rolled, sugar beet drilled: May 9. Mangolds drilled, harrowed in: May 10. Ring rolled: May 11. Hoed: June 9-14. Singled: June 16-25. Hoed: June 23-27. Top dressings applied: June 29. Hoed: July 14-15 and 21-27, Aug 29-31. Hand weeded: Sept 14-16. Lifted both crops: Nov 3-16.

Varieties: Mangolds - Yellow Globe. Sugar Beet - Klein E.

Yields: tons per acre

Strip	Cross Dressings				
	O	N	A	AC	C
Mangolds: Roots					
1	10.19	13.73	11.66	15.14	13.68
2	11.34	18.20	16.24	18.94	15.14
4	4.00	(a) 11.56 (b) 11.04	12.12	17.37	14.97
5	1.52	6.70	5.81	6.72	4.52
6	2.16	8.29	9.64	12.80	9.26
7	1.83	7.55	9.93	11.58	9.07
8	1.33	2.89	2.54	4.42	3.10
9	7.57				
Mangolds: Leaves					
1	2.32	2.86	1.86	2.35	2.76
2	3.35	3.43	3.03	4.16	3.20
4	1.37	(a) 3.77 (b) 3.45	3.08	3.94	3.13
5	0.83	2.84	2.45	3.18	2.30
6	1.03	2.96	2.76	3.57	2.89
7	0.86	2.96	2.94	3.69	3.52
8	0.71	1.66	1.42	2.10	1.83
9	2.59				

49/4/4.2

Yields: tons per acre

Cross Dressings

Strip	O	N	A	AC	C
Sugar Beet: Roots					
1	7.98	7.19	8.12	7.73	7.09
2	7.05	7.39	7.39	8.07	7.68
4	1.61	(b) 4.61	3.33	4.45	3.83
5	1.66	4.04	3.17	3.51	2.02
6	1.69	4.15	2.41	2.08	3.11
7	1.85	2.79	2.46	1.59	2.85
8	1.53	2.61	1.43	1.09	1.71
Sugar Beet: Leaves					
1	6.56	11.00	9.00	8.02	8.17
2	8.32	9.05	6.65	7.78	8.86
4	1.86	(b) 4.70	5.24	5.72	2.01
5	1.91	6.41	3.77	6.51	3.57
6	2.01	5.68	1.57	3.77	2.59
7	1.81	4.75	2.74	2.74	5.04
8	1.52	4.11	2.25	1.66	2.94



49/A/5

## HAY - THE PARK GRASS PLOTS, 1949

For details of treatments and notes, see 1935 Report p. 151 and 1938 Report p. 111.

Cultivations etc.: Dung applied: Jan 11, 12. Minerals applied: Jan 26, 27. Chain harrowed: Jan 28. Rolled: Feb 17. Nitrogenous manures applied: 1st dressing Mar 30; 2nd dressing May 2. 1st cut: June 20-21. 2nd cut: Nov 17-18.

Yield of Hay: cwt per acre

Plot	Not Limed			Limed		
	1st Crop	2nd Crop <del>xxx</del>	Total	1st Crop	2nd Crop <del>xxx</del>	Total
1	6.1		6.1	20.3		20.3
2	8.8		8.8	11.9		11.9
3	6.7		6.7	12.2		12.2
4-1	10.8		10.8	14.4		14.4
4-2	9.9		9.9	24.4		24.4
5-1	7.0		7.0			
5-2	9.4		9.4			
6	21.8		21.8			
7	21.7		21.7	35.6		35.6
8	16.7		16.7	12.8		12.8
9	42.1	1.6	43.7	39.6		39.6
10	23.4	0.4	23.8	29.3		29.3
11-1	35.2	2.9	38.1	50.9	1.2	52.1
11-2	45.1	2.9	48.0	52.5	1.1	53.6
12	8.2		8.2			
13	27.6		27.6	44.7		44.7
14	50.5	1.1	51.6	45.4 <del>x</del>	1.1 <del>x</del>	46.5 <del>x</del>
				35.8 <del>xx</del>	1.1 <del>xx</del>	36.9 <del>xx</del>
15	18.8		18.8	26.3		26.3
16	32.8	0.8	33.6	32.0	1.0	33.0
17	23.1	1.1	24.2	25.0	0.5	25.5
18	14.1		14.1	32.1 <sup>+</sup>		32.1 <sup>+</sup>
				32.6 <sup>++</sup>		32.6 <sup>++</sup>
19	33.5		33.5	29.4 <sup>++</sup>		29.4 <sup>++</sup>
				28.8 <sup>++</sup>		28.8 <sup>++</sup>
20	31.4		31.4	33.7 <sup>+</sup>		33.7 <sup>+</sup>
				39.4 <sup>++</sup>		39.4 <sup>++</sup>

~~x~~ Sun~~xx~~ Shade~~xxx~~ These figures for the second crop are estimated hay yields calculated from the dry matter.

+ Heavy liming

++ Light liming



49/A/6

BARLEY - EXHAUSTION LAND HOOSFIELD 1949

For history of this land see 1949 Station Report, pp.97-8

Cultivations, etc.: Ploughed: Jan 3-10. Springtined: Mar 22.  
Drilled: Mar 23. Sulphate of ammonia applied, harrowed  
in: Mar 24. Rolled: Apr 1. Harvested: Aug 9. Variety:  
Plumage Archer.

Basal Manuring:  $2\frac{1}{2}$  cwt sulphate of ammonia per acre.

Plot	Treatment for potatoes 1876-1901	Total Grain cwt per acre	Total straw cwt per acre
1	Unmanured	7.6	8.3
2	Dung 1876 - 82	10.0	12.5
3	Superphosphate and Dung	26.8	28.9
4	Superphosphate <sup>(1)</sup> Nitrate of Soda <sup>(2)</sup> and Dung	25.9	28.8
5	Ammonium Salts	8.7	11.9
6	Nitrate of Soda	13.0	15.9
7	Minerals and Ammonium Salts	23.0	21.8
8	Minerals (as in 7) and Nitrate of Soda	27.9	25.0
9	Superphosphate	23.4	22.6
10	Minerals (as in 7)	27.0	29.7

(1) 1876-82

(2) 1876-81

Note: On plots 1, 5, 7, 10 the manuring dates back to 1856,  
the plots being under Wheat from 1856-74.

Rates of application of manures, per acre: Dung, 14 tons.

Superphosphate,  $3\frac{1}{2}$  cwt. Nitrate of soda, 550 lb.

Ammonium Salts, 400 lb. Minerals consist of Superphosphate,  
 $3\frac{1}{2}$  cwt; sulphate of potash, 300 lb.; sulphate of soda,  
100 lb.; sulphate of magnesia, 100 lb.

49/A/7.1

# WHEAT - WOBURN STACKYARD 1949

This field was under wheat from 1877-1926 and results and treatments for this period are given in the 1928 Station Report pp 103-105. From 1927-1940 no manures were applied, wheat being grown each year except 1927 and '28, 1934 and '35, when the field was fallowed. In 1941 and '42 a top dressing of 2 cwt sulphate of ammonia per acre was applied.

For the crop of 1943 a new scheme was started. The plots were divided into sets of three according to their previous manurial treatments (omitting plots 2, 5 and 8 which were so acid as to give negligible crops). The field was fallowed in 1947 and '48.

The sets were:

No minerals	plots	1, 3, 7.
Minerals	"	4, 6, 9.
Dung	"	11b divided into three subsections
Various	"	10a, 10b, 11a.

In each set of three plots one receives nitrochalk at 2 cwt per acre, another at 4 cwt, and the third at 6 cwt. On every plot the dressings rotate in cyclical order and the field is cropped yearly with wheat.

Cultivations etc.: Ploughed: Oct 6 and Nov 12. Harrowed, seed sown and harrowed again: Nov 15. Nitrochalk applied: Apr 29. Wild oats pulled: July 11-21. Harvested: Aug 10. Variety: Squareheads Master 13/4.

49/A/7.2				
Plot	Treatment 1877-1926	Nitrochalk Dressing: cwt per acre	Total grain: cwt per acre	Total straw: cwt per acre
3	Nitrate of Soda	2	8.0	15.1
1	Unmanured	4	10.9	20.7
7	Unmanured	6	10.7	20.0
6	Minerals plus Nitrate of soda	2	11.1	21.2
9	Minerals, and, in alternate years nitrate of soda	4	14.4	28.3
4	Minerals	6	15.6	32.2
11b (2)	Dung	2	12.6	25.9
11b (3)	Dung	4	16.0	33.6
11b (1)	Dung	6	18.7	30.2
11a	Sulphate of potash plus nitrate of soda	2	11.6	23.5
10a	Superphosphate plus nitrate of soda	4	10.9	23.2
10b	Rape cake	6	10.2	19.2