

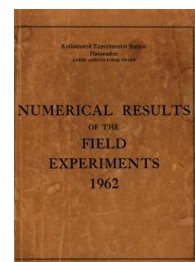
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# Yields of the Field Experiments 1962

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## Classical Experiments

### Rothamsted Research

Rothamsted Research (1963) *Classical Experiments* ; Yields Of The Field Experiments 1962, pp 5 - 29 - DOI: <https://doi.org/10.23637/ERADOC-1-164>

62/A/1.1

WHEAT - BROADBALK 1962

The 119th year

For history, treatments, etc., see "Details of the Classical and Long Term Experiments" 1956.

Cultivations, etc.:

Cropped sections. Dung and ground chalk applied, all plots ploughed: Sept 7, 1961. Autumn fertilisers applied: Sept 29. Seed drilled at 3 bushels per acre: Nov 1. Spring fertilisers applied: Apr 17, 1962. Section IA sprayed with MCPA/TBA at 4 pints in 40 gallons per acre: Apr 24. Second dressing of nitrate of soda applied to plot 16: May 4. Combine harvested: Sept 15. Variety: Squarehead's Master 13/4.

Fallow section. (II) Ploughed: Sept 7, 1961; May 16, 1962; July 16.

Broadbalk Wilderness. N.

Cultivations, etc.: Shrubs grubbed out: Nov 17 - 30, 1961. Part grazed: Dec 12 - 13; May 11 - 30, 1962; June 12 - 18; July 27 - Aug 1; Sept 6 - 26. Grass topped: May 23; Aug 1; Sept 26.

Summary of Results

Grain (at 85% dry matter): cwt per acre

Section Years after fallow	IB	III	IV	VA	VB	IA	Mean
	1	2	3	unlimed 4	limed 4	11	
2A	40.9	22.2	26.0	24.3	23.3	26.9	26.5
2B	37.5	25.9	26.7	25.2	24.2	27.0	27.4
3	18.5	11.7	9.5	11.2	10.8	12.5	11.9
5	23.1	11.8	12.4	12.4	11.4	13.1	13.6
6	23.0	16.0	14.8	12.2	14.1	17.3	15.9
7	29.4	23.1	21.4	16.6	15.3	22.7	21.5
8	26.5	32.4	28.1	24.6	20.6	31.9	27.7
9	23.8	19.3	17.5	14.6	12.9	22.6	18.1
10	19.7	24.2	21.8	20.6	18.1	20.9	21.4
11	22.9	24.9	20.3	19.0	15.8	28.2	21.6
12	22.2	24.6	19.0	19.5	17.3	25.3	21.2
13	27.6	20.7	17.1	17.1	15.7	26.4	19.9
14	25.0	24.9	19.7	19.2	16.9	26.7	21.8
15	24.0	20.2	19.0	16.8	12.0	19.6	18.8
16	24.2	27.7	25.8	21.9	21.7	27.2	25.1
17	24.8	25.1	21.3	19.8	18.4	24.8	22.4
18	17.2	10.7	8.9	9.4	9.9	12.9	11.0
19	25.0	20.4	15.0	13.0	14.4	21.9	17.9
20	16.9					14.9	16.2

Mean dry matter % as harvested: 78.6



62/A/1.2

Straw (at 85% dry matter): cwt per acre

Section Years after fallow	IB	III	IV	VA	VB	IA	Mean
	1	2	3	unlined 4	lined 4	11	
2A	45.5	32.8	29.8	24.9	24.8	30.5	31.4
2B	44.4	38.6	32.7	32.9	26.5	26.9	34.6
3	15.8	13.0	8.2	10.6	9.3	10.7	11.1
5	27.7	13.6	12.4	15.6	14.1	12.7	15.5
6	27.5	18.8	17.0	15.9	18.1	20.6	19.1
7	36.5	27.0	30.3	28.6	25.7	25.3	29.1
8	35.8	38.4	34.5	33.0	28.4	36.8	34.8
9	27.7	27.8	27.4	22.0	21.1	30.1	26.1
10	16.8	25.5	20.0	23.1	13.5	22.0	20.7
11	20.9	26.4	18.0	19.6	13.5	25.4	20.7
12	21.8	23.3	19.9	20.7	17.4	25.7	21.2
13	35.3	25.4	24.5	25.3	23.6	31.8	26.7
14	26.4	25.4	20.8	22.8	19.2	30.0	23.4
15	31.9	22.4	19.2	21.5	11.8	24.7	21.4
16	31.2	37.3	32.2	28.0	28.8	39.6	32.9
17	29.4	29.4	26.7	24.9	24.4	30.0	27.4
18	20.4	9.9	10.2	9.3	9.5	13.1	11.5
19	30.4	22.5	18.6	16.3	17.3	24.9	21.2
20	20.8					17.2	19.6

Mean dry matter % as harvested: 87.2



62/A/2.1

BARLEY - HOOSFIELD 1962

For history, treatments, etc., see "Details of the Classical and Long Term Experiments" 1956.

From 1962 grain yields will be estimated from the two central combine cuts on each plot, and straw yields from one.

Cultivations, etc.: All plots sprayed with 2,4-D ester at  $1\frac{3}{4}$  pints in 40 gallons per acre: Sept 5, 1961. Plot 1N and parts of plots 2C, 4C, 5-0 and 5A sprayed with dalapon at 8 lb in 40 gallons per acre: Sept 8. Patches on 2N, 2C, 3C and 4C sprayed by hand with dalapon at 8 lb in 40 gallons per acre: Sept 11. Areas sprayed on Sept 8 and 11 resprayed with dalapon at 4 lb in 40 gallons per acre: Sept 27. Dung applied, ploughed: Oct 31. Fertilisers applied: Mar 27, 1962. Seed drilled at  $2\frac{3}{4}$  bushels per acre: Apr 11. Sprayed with MCPA/MBA at 4 pints in 40 gallons per acre: June 4. Combined: Sept 14. Variety: Plumage Archer.



62/A/2.2

Summary of Results

Plot	Grain (at 85% dry matter): cwt per acre	Straw (at 85% dry matter): cwt per acre
1 O	8.2	5.1
2 O	9.8	5.1
3 O	7.7	4.7
4 O	10.2	5.5
5 O	10.5	6.5
1 A	11.6	7.0
2 A	17.0	9.8
3 A	12.5	9.3
4 A	21.9	11.9
5 A	24.3	19.0
1 AA	13.1	10.2
2 AA	22.1	15.8
3 AA	13.4	10.9
4 AA	20.9	16.6
1 AAS	16.5	9.9
2 AAS	24.0	15.3
3 AAS	18.8	13.2
4 AAS	27.3	21.5
1 C	17.7	10.2
2 C	20.3	13.3
3 C	18.1	8.4
4 C	23.0	14.0
7 - 1	13.3	7.6
7 - 2	33.0	16.8
6 - 1	8.2	5.7
6 - 2	9.2	10.2
1 N	10.8	8.2
2 N	15.5	11.2
Mean dry matter % as harvested:	79.9	78.5



62/A/3

WHEAT AFTER FALLOW - HOOSFIELD 1962

Without manure 1851 and since

For history, treatments etc., see "Details of the Classical and Long Term Experiments" 1956.

Area harvested: 0.0362 acres.

Cultivations, etc.:

Cropped plots. Ploughed: Sept 15, 1961. Seed sown at 3 bushels per acre: Nov 1. Combine harvested: Sept 15, 1962. Variety: Squarehead's Master 13/4.

Fallowed plots. Ploughed three times: Sept 15, 1961; May 17, 1962; July 16.

Note: Counts of straw number and estimates of Eyespot (*Cercospora herpotrichoides*) and Take-all (*Ophiobolus graminis*) were made.

Summary of Results

Grain (at 85% dry matter): cwt per acre

Plot No. of years of fallow	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	Mean
	1	1	3	
	12.5	11.8	12.2	12.2

Mean dry matter % as harvested: 78.0



62/A/4.1

GRASS AND MULTIPLE CROPPING AND DIRECT AND RESIDUAL P

AGDELL 1962

For history, treatments, etc., see "Details of the Classical and Long Term Experiments" 1956.

Multiple cropping 1962

The experiment carried out in 1961 on plots 1, 3 and 5 was repeated on the arable halves of plots 2, 4 and 6 of the old rotation. The areas carrying strip crops in 1961 were bare fallowed. Yields were taken from the cocksfoot ley sown in 1960.

Area of each sub plot (acres): 0.0050. Area harvested (acres)  
Grass - 0.0023, barley and sugar beet - 0.0038, potatoes - 0.0050.

Cultivations, etc.:

Grass. 'Nitro-Chalk' applied: Mar 19, 1962. Cut 3 times: June 6, Aug 20 and Oct 2. 'Nitro-Chalk' applied after 2nd cut.

Fallow areas. Ploughed: Nov 4, 1961. Rotary cultivated: June 20, 1962.

Microplots. Fertilisers applied for ploughing in: Oct 12, 1961. Ploughed: Oct 21.

Barley. Seedbed fertilisers applied, seed drilled at  $2\frac{1}{2}$  bushels per acre: Mar 21, 1962. Sprayed with CMFP at 5 pints in 50 gallons per acre: May 9. Harvested: Aug 22. Variety: Proctor.

Potatoes. K applied after ploughing: Feb 23, 1962. Ridged, fertilisers applied in bouts, potatoes planted: Apr 27. Sprayed twice with demeton methyl at 12 fluid oz in 50 gallons per acre: June 14 and Aug 17. Sprayed four times with copper oxychloride fungicide at 2.3 lb Cu in 40 gallons per acre: July 19, Aug 1, Aug 10 and Sept 5. Lifted: Oct 8. Variety: Majestic (chitted).

Sugar beet. K applied after ploughing: Feb 23, 1962. Seedbed fertilisers applied, seed drilled at 10 lb per acre: Mar 21. Singled: May 30. Sprayed four times with demeton methyl at 12 fluid oz in 50 gallons per acre: June 14, June 29, July 7 and Aug 17. Lifted: Oct 5. Variety: Klein E (rubbed and graded seed).

Errata to 'Numerical Results of the Field Experiments 1961'.

- (1) Page 61/A/4.2 sugar beet. 2nd line of page should read:  
'..... seed drilled at 10 lb per acre (rubbed and graded)!'.
- (2) Page 61/A/4.3. All yields of Barley straw should be halved.



62/A/4.2

Summary of Results

Manure to turnips until 1948 Plot Rotation	Mineral manure* no nitrogen				Mineral* and nitrogenous manure†		Mean
	None since 1848	5	6	3	4	1	
	Fallow	Clover	Fallow	Clover	Fallow	Clover	
<u>Grass dry matter: cwt per acre</u>							
1st cut	22.7	15.7	41.0	35.5	39.9	39.1	32.3
2nd cut	13.8	12.3	19.2	18.7	19.6	20.7	17.4
3rd cut	3.8	2.4	7.2	5.8	10.3	8.9	6.4
Total of 3 cuts	40.3	30.5	67.4	60.0	69.9	68.8	56.2

Mean dry matter % as cut: 1st cut 26.2  
 2nd cut 24.5  
 3rd cut 18.7  
 Total of 3 cuts 23.1

\*P, K, Na, Mg.

†Rape dust (or castor meal + ammonium sulphate).



62/A/4.3

Manure to turnips until 1948 Plot	Clover rotation only			Mean
	None since 1848 6	Mineral* manure no nitrogen 4	Mineral* and nitrogenous manure <sup>†</sup> 2	
<u>Barley, Grain (at 85% dry matter): cwt per acre</u>				
<u>P<sub>2</sub>O<sub>5</sub> cwt per acre</u>				
None	25.0	34.5	31.5	30.3
Ploughed in				
0.75	33.6	36.6	26.5	32.2
1.50	34.0	35.7	31.4	33.7
Broadcast				
0.75	29.4	36.0	25.7	30.4
1.50	28.4	35.5	29.6	31.2
$\frac{1}{2}$ Ploughed in $\frac{1}{2}$ Broadcast				
1.50	33.0	31.4	26.5	30.3
3.00	33.5	36.7	28.2	32.8
Mean	30.2	35.1	28.9	31.4

<u>Barley, Straw (at 85% dry matter): cwt per acre</u>				
<u>P<sub>2</sub>O<sub>5</sub> cwt per acre</u>				
None	19.2	30.3	27.2	25.6
Ploughed in				
0.75	30.2	36.3	29.3	31.9
1.50	33.3	37.1	33.6	34.7
Broadcast				
0.75	23.5	31.4	28.6	27.8
1.50	28.0	40.5	31.5	33.3
$\frac{1}{2}$ Ploughed in $\frac{1}{2}$ Broadcast				
1.50	31.6	33.9	33.1	32.9
3.00	35.0	40.9	34.0	36.6
Mean	27.5	35.1	30.6	31.0

Mean dry matter % as harvested: Grain 78.0  
Straw 50.7

\*P, K, Na, Mg.

<sup>†</sup>Rape dust (or castor meal + ammonium sulphate).



62/A/4.4

<u>Clover rotation only</u>				
Manure to turnips until 1948 Plot	None since 1848 6	Mineral* manure no nitrogen 4	Mineral* and nitrogenous manure <sup>+</sup> 2	Mean
<u>Potatoes, Total tubers: tons per acre</u>				
<u>P<sub>2</sub>O<sub>5</sub> cwt per acre</u>				
None	7.23	12.38	15.81	11.81
Ploughed in				
0.75	9.14	14.29	15.34	12.92
1.50	11.16	11.18	13.70	12.01
Broadcast				
0.75	8.86	12.43	17.89	13.06
1.50	10.26	19.69	17.58	15.84
$\frac{1}{2}$ Ploughed in $\frac{1}{2}$ Broadcast				
1.50	10.54	16.40	18.13	15.02
3.00	10.68	14.40	19.20	14.76
Mean	9.39	14.14	16.68	13.40
<u>Sugar beet, Roots (washed): tons per acre</u>				
<u>P<sub>2</sub>O<sub>5</sub> cwt per acre</u>				
None	19.30	20.85	19.53	19.89
Ploughed in				
0.75	21.80	22.62	20.43	21.62
1.50	20.96	24.26	23.72	22.98
Broadcast				
0.75	20.00	21.50	19.80	20.43
1.50	20.26	20.62	22.54	21.14
$\frac{1}{2}$ Ploughed in $\frac{1}{2}$ Broadcast				
1.50	20.88	23.70	23.32	22.63
3.00	21.84	23.53	19.98	21.78
Mean	20.54	22.24	21.11	21.30
<u>Sugar beet, Sugar percentage</u>				
<u>P<sub>2</sub>O<sub>5</sub> cwt per acre</u>				
None	16.2	16.2	16.0	16.1
Ploughed in				
0.75	16.7	16.4	16.2	16.4
1.50	16.0	16.4	16.3	16.2
Broadcast				
0.75	16.0	16.3	16.3	16.2
1.50	16.4	16.8	16.0	16.4
$\frac{1}{2}$ Ploughed in $\frac{1}{2}$ Broadcast				
1.50	15.9	16.7	16.1	16.2
3.00	17.0	16.2	16.5	16.6
Mean	16.3	16.4	16.2	16.3

\* P, K, Na, Mg.

<sup>+</sup> Rape dust (or castor meal + ammonium sulphate).



62/A/4.5

Manure to turnips until 1948 Plot	Clover rotation only			Mean
	None since 1848 6	Mineral* manure no nitrogen 4	Mineral* and nitrogenous manure+ 2	

Sugar beet, Total sugar: cwt per acre

<u>P<sub>2</sub>O<sub>5</sub> cwt per acre</u>				
None	62.4	67.2	62.6	64.1
Ploughed in				
0.75	72.7	74.1	66.3	71.0
1.50	67.2	79.5	77.2	74.6
Broadcast				
0.75	64.2	70.2	64.6	66.3
1.50	66.3	69.2	72.1	69.2
$\frac{1}{2}$ Ploughed in $\frac{1}{2}$ Broadcast				
1.50	66.5	79.0	75.3	73.6
3.00	74.4	76.2	66.1	72.2
Mean	67.0	72.8	68.4	69.4

Sugar beet, Tops: tons per acre

<u>P<sub>2</sub>O<sub>5</sub> cwt per acre</u>				
None	20.79	23.94	23.14	22.62
Ploughed in				
0.75	22.22	22.10	18.00	20.77
1.50	25.32	24.96	26.10	25.46
Broadcast				
0.75	23.31	23.32	19.70	22.11
1.50	21.33	19.73	25.02	22.03
$\frac{1}{2}$ Ploughed in $\frac{1}{2}$ Broadcast				
1.50	23.63	22.48	24.61	23.57
3.00	22.07	24.00	19.29	21.79
Mean	22.43	23.06	22.38	22.62

\*P, K, Na, Mg.

+Rape dust (or castor meal + ammonium sulphate).



62/A/5.1

## MANGOLDS AND POTATOES - BARNFIELD 1962

The following changes were made in 1962 to the treatments and cropping of Barnfield. Several rates of nitrogen as sulphate of ammonia and nitrate of soda were substituted for the single rate and potatoes were grown on half-plots alongside the mangolds.

For history, treatments etc., see "Details of the Classical and Long Term Experiments" 1956.

All strips of the experiment are now divided lengthways into two halves, one cropped with mangolds and one with potatoes. The treatments to the series (excluding Series 0) are modified as follows:-

The application of castor meal to Series C and AC is discontinued. Each plot in each series is now divided into 8 sub plots, 4 per crop and a test of none; 0.6; 1.2; 1.8 cwt N per acre is applied, using sulphate of ammonia on Series C, AC and A and nitrate of soda on Series N and Plot 9. The former nitrogen dressings to the series are discontinued.

Series 0 still receives no nitrogen, and the half-plots are not subdivided.

The division of plot 4N introduced in 1903 is discontinued; the plot reverts to the standard strip and series manuring, modified as above.

Area of each sub plot (acres): Strips 2, 5, 6, 7 and 8 - 0.0182  
Strips 4 and 9 - 0.0251.  
Strip 1 - 0.0137.

Area harvested: Series 0 - 0.0265, remainder - 0.0053.

Note: In 1960 and 1961 no crop was grown, but the manures were applied annually as in the past.

Cultivations, etc.: Dung applied: Nov 20, 1961. Ploughed: Nov 21.

Mineral fertilisers applied to strips: Apr 30, 1962.

Mangolds: N fertilisers applied: May 1, 1962. Seed (rubbed and graded) drilled at 6 lb per acre: May 3. Singled: June 12 - 23. Lifted: Nov 29 - Dec 13. Variety: Prizewinner Yellow Globe.

Potatoes: N fertilisers applied: May 1, 1962. Potatoes machine planted: May 2. Earthed up: July 17. Sprayed with copper oxychloride fungicide at 2.3 lb Cu in 20 gallons per acre: Aug 10. Haulm destroyed with diquat at 3 pints in 40 gallons per acre: Sept 27. Lifted: Oct 17. Variety: Majestic.

Note (1): On Series A, N and 0, plot 9 and certain sub-plots (indicated by asterisks in the tables) of Series AC the mangolds were severely damaged by frost before lifting.

Note (2): Mangolds - plot 6C. There were gaps in the two sub-plots receiving none and 1.8 cwt N. No adjustment has been made to the yields.



Summary of Results

62/A/5.2

Mangolds, Roots weight: tons per acre

Strip	N: cwt per acre	Series				
		O	N	A	AC	C
1	None	24.58	0.91	31.74	35.53*	34.77
	0.6		36.62	36.87	39.82	38.89
	1.2		44.87	37.80	44.11	45.21
	1.8		43.44	41.00	44.87	45.63
2	None	17.43	25.26	23.23	30.05*	29.63
	0.6		29.04	33.93	34.52*	39.99
	1.2		38.72	35.86	41.00	38.56
	1.8		35.61	38.56	41.00	43.27
4	None	5.29	13.47	18.94	33.76	17.51
	0.6		23.23	25.76	37.29	31.91
	1.2		37.55	30.98	37.71*	32.66
	1.8		34.77	31.74	41.25*	39.48
5	None	4.50	9.85	13.81	19.87*	12.12
	0.6		19.61	14.90	20.71	17.68
	1.2		33.08	15.15	21.21	19.36
	1.8		31.82	14.14	21.13	20.88
6	None	5.47	5.72	17.34	28.96	20.46
	0.6		15.24	30.98	31.06	22.14
	1.2		26.77	32.66	40.32*	28.12
	1.8		32.24	36.62	33.42	32.41
7	None	5.77	8.00	20.37	31.06	25.26
	0.6		22.65	28.71	34.85*	32.83
	1.2		35.44	33.51	33.67*	29.97
	1.8		30.90	29.21	33.51	34.52
8	None	5.32	9.93	6.73	12.88	6.40
	0.6		12.63	13.81	14.65	11.53
	1.2		17.68	8.17	17.76*	12.96
	1.8		25.17	12.46	15.57*	11.87
9	None		12.71			
	0.6		22.73			
	1.2		35.27			
	1.8		33.84			

\* Severely damaged by frost: also the whole of Series A, N, and Plot 9.



62/A/5.3

Mangolds, Leaf weight: tons per acre

Strip	N: cwt per acre	Series				
		0	N	A	AC	0
1	None	4.06	3.96	5.56	4.80*	5.89
	0.6		3.87	4.38	6.23	7.32
	1.2		5.05	5.22	7.49	8.42
	1.8		5.14	5.30	7.91	7.24
2	None	3.35	2.95	2.86	6.06*	4.97
	0.6		3.28	4.13	5.56*	7.07
	1.2		4.46	4.88	10.02	7.24
	1.8		3.87	4.80	7.41	8.92
4	None	1.16	2.10	1.68	5.81	2.86
	0.6		3.37	2.53	5.81	4.38
	1.2		4.80	2.95	6.06*	5.81
	1.8		4.80	3.87	5.56*	7.24
5	None	1.04	1.43	2.19	3.54*	2.95
	0.6		2.36	2.69	4.97	4.71
	1.2		3.45	3.96	6.15	5.30
	1.8		4.63	3.62	4.88	5.22
6	None	1.13	1.18	1.60	5.05	4.38
	0.6		1.85	3.54	4.97*	3.79
	1.2		3.37	3.54	5.89*	5.14
	1.8		3.37	3.79	6.06	5.47
7	None	0.96	1.52	2.53	5.72	5.22
	0.6		2.95	2.86	6.57*	6.90
	1.2		3.45	5.14	4.46*	5.39
	1.8		3.96	4.29	5.98	7.74
8	None	1.35	1.60	1.35	3.79	2.95
	0.6		2.27	3.37	4.63	3.70
	1.2		2.86	3.11	4.80*	5.05
	1.8		4.04	3.87	4.63*	5.05
9	None		1.43			
	0.6		3.11			
	1.2		3.70			
	1.8		4.97			

\*Severely damaged by frost: also the whole of Series A, N, 0 and Plot 9.



62/A/5.4

Potatoes, Total tubers: tons per acre

Strip	N: cwt per acre	Series				
		O	N	A	AC	C
1	None	7.43	15.92	11.31	14.12	10.04
	0.6		17.58	17.39	15.48	16.42
	1.2		16.28	17.27	17.71	14.96
	1.8		14.48	18.28	17.48	17.86
2	None	9.48	11.85	15.78	11.96	11.50
	0.6		16.27	16.87	15.28	14.08
	1.2		16.97	16.58	15.71	15.78
	1.8		15.19	13.71	14.09	16.53
4	None	4.32	6.55	8.12	8.51	8.56
	0.6		11.20	11.51	12.30	13.96
	1.2		12.87	14.93	13.51	13.26
	1.8		12.66	13.10	13.30	13.36
5	None	3.93	5.35	5.60	7.03	6.78
	0.6		8.38	5.98	8.14	9.39
	1.2		6.52	6.57	8.90	9.13
	1.8		9.34	5.68	7.96	9.64
6	None	3.63	5.67	7.76	9.45	8.29
	0.6		9.31	10.45	14.95	10.75
	1.2		9.08	12.18	14.24	14.73
	1.8		9.16	12.13	14.77	13.44
7	None	4.83	4.65	5.91	6.21	5.67
	0.6		7.09	5.91	7.48	8.06
	1.2		8.65	6.48	8.04	10.51
	1.8		8.00	6.19	9.39	6.86
8	None	3.62	3.69	3.01	6.29	5.89
	0.6		3.03	3.10	6.23	7.77
	1.2		1.78	4.10	6.40	6.55
	1.8		3.93	2.95	6.21	7.11
9	None		3.98			
	0.6		4.00			
	1.2		5.18			
	1.8		4.08			



62/A/5.5

Potatoes, Percentage ware (1 $\frac{1}{2}$ " riddle)

Strip	N: cwt per acre	Series				
		O	N	A	AC	O
1	None	93.1	96.2	97.0	97.8	96.1
	0.6		95.3	96.5	97.0	95.8
	1.2		98.0	97.1	96.4	96.6
	1.8		95.3	96.2	97.7	96.3
2	None	95.8	97.7	97.2	97.6	97.3
	0.6		95.8	96.0	95.0	96.9
	1.2		94.7	96.2	96.3	94.4
	1.8		95.4	95.5	96.2	95.5
4	None	89.9	94.2	95.3	97.0	94.1
	0.6		97.1	95.8	96.7	95.3
	1.2		96.0	95.7	95.9	95.1
	1.8		95.3	94.2	94.4	92.5
5	None	90.2	92.9	92.5	94.9	96.9
	0.6		92.5	91.9	94.1	95.5
	1.2		88.4	90.1	94.1	95.6
	1.8		92.8	88.9	93.9	95.6
6	None	88.5	91.1	94.3	96.4	94.9
	0.6		92.4	92.8	95.6	96.1
	1.2		92.3	94.6	95.9	98.8
	1.8		94.9	94.4	96.9	96.1
7	None	91.8	90.0	89.3	89.8	95.2
	0.6		89.3	85.8	90.4	95.6
	1.2		91.7	88.6	89.8	95.6
	1.8		92.6	89.5	92.4	93.6
8	None	88.9	88.0	83.9	92.0	91.8
	0.6		72.9	73.5	91.6	93.8
	1.2		60.0	82.6	89.8	90.4
	1.8		85.0	73.6	91.5	92.9
9	None		91.5			
	0.6		87.4			
	1.2		89.4			
	1.8		86.6			



62/A/6

HAY - THE PARK GRASS PLOTS 1962

For history, treatments etc., see "Details of the Classical and Long Term Experiments" 1956.

Cultivations, etc.: Mineral fertilisers applied: Nov 8, 1961.  
 Nitrogenous fertilisers applied: 1st dressing - Mar 12, 1962;  
 2nd dressing - Apr 6. Cut twice: June 13 and Oct 3.

Summary of Results

Dry matter: cwt per acre

Plot	Not limed			Limed		
	1st crop	2nd crop	Total	1st crop	2nd crop	Total
1	4.5	5.5	10.0	10.6	14.0	24.6
2	8.7	10.9	19.6	10.9	10.8	21.7
3	9.6	9.9	19.5	12.3	10.5	22.8
4-1	13.8	17.0	30.8	13.6	14.3	27.9
4-2	14.5	14.0	28.5	20.4	14.1	34.5
5-1	7.7	8.3	16.0			
5-2	15.6	18.3	33.9			
6	18.4	21.1	39.5			
7	21.4	17.8	39.2	36.4	26.7	63.1
8	15.7	15.8	31.5	14.4	13.0	27.4
9	32.8	17.5	50.3	40.5	14.8	55.3
10	21.5	13.0	34.5	24.6	11.9	36.5
11-1	37.7	27.0	64.7	43.3	16.9	60.2
11-2	43.9	28.1	72.0	47.8	25.1	72.9
12	10.2	15.0	25.2			
13	24.4	20.8	45.2	29.0	26.5	55.5
14	45.9	19.5	65.4	38.3	12.5	50.8
15	23.2	17.8	41.0	28.6	17.4	46.0
16	26.1	15.8	41.9	35.5	22.3	57.8
17	17.9	13.6	31.5	18.5*	10.0	28.5*
18	8.4	6.4	14.8	19.3*	14.4*	33.7*
				19.4 <sup>+</sup>	13.0*	32.4*
19	29.8	22.9	52.7	36.5*	21.6*	58.1*
				35.0 <sup>+</sup>	25.2 <sup>+</sup>	60.2 <sup>+</sup>
20	38.8	26.8	65.6	39.9*	38.0*	77.9*
				39.5 <sup>+</sup>	32.5 <sup>+</sup>	72.0 <sup>+</sup>

\*Heavy liming.      <sup>+</sup>Light liming.

Mean dry matter % as cut: 1st crop 25.2; 2nd crop 21.8



62/A/7

BARLEY - EXHAUSTION LAND HOOSFIELD 1962

For history, treatments etc., see "Details of the Classical and Long Term Experiments" 1956.

Cultivations, etc.: Plots 5 and 6, and parts of 2 sprayed with dalapon at 8 lb in 40 gallons per acre: Sept 8, 1961 and again at 4 lb in 40 gallons per acre: Sept 27. Ploughed: Oct 31. 'Nitro-Chalk' applied, seed drilled at 3 bushels per acre: Mar 28, 1962. Sprayed with MCPA/MBA at 4 pints in 40 gallons per acre: June 4. Combine harvested: Sept 14. Variety: Plumage Archer.

Summary of Results

Yields (at 85% dry matter): cwt per acre

Plot	Manuring to potatoes 1876 - 1901*	Grain	Straw
1	Unmanured	16.0	10.9
2	Unmanured after dung 1876 - 81	14.1	8.9
3	Dung	24.4	16.2
4	Dung	24.5	18.0
5	Ammonium salts	14.3	9.8
6	Nitrate of soda	12.6	9.4
7	Ammonium salts and complete minerals	20.7	14.4
8	Nitrate of soda and complete minerals	21.0	13.4
9	Superphosphate	19.2	14.2
10	Complete minerals	20.0	17.9
Mean dry matter % as harvested		77.7	83.4

\*For certain changes see history.



62/A/8

CLOVER - ROTHAMSTED GARDEN 1962

The 109th year

For history, etc. see "Details of the Classical and Long Term Experiments" 1956.

The molybdenum treatment is now discontinued.

Cultivations, etc.: Surface lightly forked, plants removed, muriate of potash applied and raked in, seed drilled at 45 lb per acre: May 16, 1962. Cut: Nov 14. Variety: Late Flowering Red S123.

Note: The clover planted in 1961 died. The new crop made slow growth.

Summary of Results

Dry matter: cwt per acre

Muriate of potash: cwt per acre	Spray in 1961		Mean
	None	Sodium molybdate	
None	5.2	3.7	4.4
2	12.7	12.3	12.5
Mean	9.0	8.0	8.5

Mean dry matter % as harvested: 14.4



62/A/9.1

OATS, AND MICROPLOTS, SITES OF CONTINUOUS  
WHEAT AND BARLEY EXPERIMENTS

WOBURN STACKYARD 1962

For history, treatments, etc., see "Details of the Classical and Long Term Experiments" 1956.

In 1962 the sites were sown with oats except for the areas occupied by microplots in 1961 and 1962.

Microplots 1962. Microplots with treatments similar to those of 1961 were laid down on parts of plots 7, 8 and 9 of the Continuous Wheat site; the area used for microplots in 1961 was bare fallow in 1962. Crop sequences were as follows:-

1960	1961	1962
Winter wheat*	Fallow	Sugar beet*
Barley*	Fallow	Potatoes*
Potatoes*	Fallow	Barley*

\* microplots.

On potatoes and barley the residual effects of the 1960 treatments P<sub>4</sub>, K<sub>4</sub> and K<sub>8</sub> were measured, the plots involved receiving basal N and K or P at appropriate rates.

Note: A strip of land across the south-east end of plot 4 of the Continuous Barley site was used for a microplot experiment on soil structure, the crop being sugar beet.

Area of each main plot (acres):	Area harvested (acres):
10a - 11b 0.0274	0.0106 - 0.0206
Remainder 0.0411	0.0097 - 0.0236
Area of each microplot 0.0026 acres.	Area harvested (acres): Potatoes -
0.0010, barley - 0.0013, sugar beet - 0.0012.	

Basal dressings per acre: Oats - 0.4 cwt N as 'Nitro-Chalk'.  
Remainder - as 1961.

Cultivations, etc.:-

Oats: Ploughed: Oct 19, 1961. Seed drilled at 4 bushels per acre, 'Nitro-Chalk' applied: Feb 24, 1962. Sprayed with MCPA/TBA at 4 pints in 40 gallons per acre: May 15. Combine harvested: Aug 27. Variety: Condor.



62/A/9.2

Microplots: Basal P,K and ploughed-in treatment fertilisers applied, plots ploughed: Jan 26, 1962.

Potatoes: Basal N and broadcast treatment fertilisers applied on the flat, chitted seed planted by machine: Mar 27, 1962. Sprayed with demeton methyl at 6 fluid oz in 50 gallons per acre: June 14. Sprayed 3 times with copper oxychloride fungicide at 2.3 lb Cu in 40 gallons per acre: July 17, July 31 and Aug 10. Lifted: Sept 25. Variety: Majestic.

Barley: Broadcast treatment fertilisers applied, seed drilled at  $2\frac{3}{4}$  bushels per acre, basal N applied: Mar 5, 1962. Harvested: Aug 27. Variety: Proctor.

Sugar beet: Basal N and broadcast treatment fertilisers applied, seed drilled at 12 lb per acre: Mar 27, 1962. Sprayed 3 times with demeton methyl at 6 fluid oz in 50 gallons per acre: June 14, June 29 and July 16. Lifted: Oct 19. Variety: Klein E (rubbed and graded).

Errata to 'Number Results of the Field Experiments' 1961 page 61/A/8.5. The basal K dressing on the first 8 lines of Total tubers and Percentage ware should read 12 NOT 4.



62/A/9.3

Summary of Results

Main plots

Crop in old scheme 1877-1927	Continuous wheat		Continuous barley	
	Wheat	Barley	Wheat	Barley
Crop 1959-61				
Crop in 1962			<u>Oats</u>	

Grain (at 85% dry matter): cwt per acre

Plot 1	21.7	21.1	22.6	30.6
2	20.0	24.6	20.7	30.0
3	19.8	20.2	27.6	23.0
4	29.5	29.9	24.4	21.2
5	22.0	27.9	24.5	21.1
6	24.3	28.8	32.3	26.6
7	19.5		19.3	
8	21.7		32.6	
9	27.4		31.2	
10 ax	19.5	22.8	24.9	23.6
10 bx	19.2	20.9	26.3	21.7
10 ay	21.5		27.5	
10 by	22.5		28.5	
11 ay		26.1		28.4
11 by		28.7		29.6
11 az	23.9		29.5	
11 bz	30.0		33.9	

Straw (at 85% dry matter): cwt per acre

Plot 1	11.9	12.2	11.4	18.8
2	9.4	12.6	9.8	17.6
3	10.2	9.5	15.8	10.9
4	18.4	21.2	10.5	12.1
5	10.2	14.6	13.9	10.9
6	11.9	15.6	16.2	14.7
7	9.0		9.7	
8	9.9		14.8	
9	14.5		15.1	
10 ax	9.1	8.2	10.7	9.7
10 bx	6.8	10.8	10.7	7.6
10 ay	9.8		11.9	
10 by	10.7		12.7	
11 ay		13.9		13.5
11 by		14.0		14.0
11 az	13.2		17.9	
11 bz	15.4		14.3	

Mean dry matter % as harvested: Grain 85.2  
Straw 82.7



62/A/9.4

Microplots on continuous wheat site

Potatoes

Treatment	Plots		
	7	8	9
P K	<u>Total tubers: tons per acre</u>		
0 12	12.50	11.46	14.82
1 12	11.92	13.43	13.20
4 12	12.85	15.51	16.44
(4) 12	14.82	14.35	15.51
0 <sup>*</sup> 12	11.00	13.66	15.28
1 <sup>*</sup> 12	13.31	14.35	13.43
4 <sup>*</sup> 12	15.16	13.89	14.47
(4) 12	14.12	13.89	14.58
4 0	10.76	10.76	13.20
4 3	12.39	13.54	12.85
4 12	11.81	14.35	14.47
4(4)	11.58	9.95	13.20
4 0 <sup>*</sup>	9.14	10.53	8.10
4 3 <sup>*</sup>	12.39	11.69	12.27
4 12 <sup>*</sup>	13.31	13.54	13.54
4(4)	11.34	12.50	12.73
P K	<u>Percentage ware (1<sup>5</sup>/<sub>8</sub> inch riddle)</u>		
0 12	90.7	88.9	92.2
1 12	92.2	87.9	86.0
4 12	89.2	90.3	86.6
(4) 12	91.4	91.9	93.3
0 <sup>*</sup> 12	91.6	89.8	91.7
1 <sup>*</sup> 12	93.0	88.7	88.8
4 <sup>*</sup> 12	93.1	90.8	89.6
(4) 12	91.8	90.0	89.7
4 0	84.9	87.1	86.0
4 3	85.0	89.7	91.9
4 12	93.1	87.9	92.0
4(4)	85.0	86.0	84.2
4 0 <sup>*</sup>	81.0	82.4	84.3
4 3 <sup>*</sup>	88.8	83.2	90.6
4 12 <sup>*</sup>	88.7	88.0	90.6
4(4)	91.8	83.3	90.0

( ) Indicates applied in 1960. \* Indicates applied to seedbed, remainder ploughed in.

All values based on 1 microplot only.



62/A/9.5

Microplots on continuous wheat site

Barley

Treatment	Plots		
	7	8	9
P K	<u>Grain (at 85% dry matter): cwt per acre</u>		
0 4	29.1	26.5	31.6
1 4	27.5	28.3	29.1
4 4	27.2	25.0	32.1
(4)4	27.4	28.6	31.1
0 4*	26.3	26.0	31.7
1 4*	26.0	23.6	31.4
4 4	32.4	28.1	29.9
(4)4	26.0	26.7	32.4
4 0	29.0	27.0	28.5
4 1	31.9	26.4	29.1
4 4	32.1	27.4	26.6
4(8)	34.2	30.8	27.8
4 0*	32.5	33.4	25.6
4 1*	34.8	28.2	29.9
4 4	34.9	32.7	27.1
4(8)	33.4	31.3	27.4

Mean dry matter % as harvested: 82.9

P K	<u>Straw (at 95% dry matter): cwt per acre</u>		
0 4	26.2	24.3	32.2
1 4	24.6	22.0	29.3
4 4	25.0	21.2	30.1
(4)4	26.7	25.9	28.4
0 4*	25.0	22.0	30.8
1 4*	23.6	22.5	30.8
4 4	30.4	25.8	30.4
(4)4	24.0	25.1	33.6
4 0	13.5	21.1	28.0
4 1	27.7	23.7	25.7
4 4	30.7	24.5	29.6
4(8)	29.6	27.3	27.6
4 0*	29.3	27.1	23.0
4 1*	31.2	24.5	28.5
4 4	34.0	29.9	26.8
4(8)	31.4	27.5	28.9

Mean dry matter % as harvested: 71.3

( ) Indicates applied in 1960. \* Indicates applied to seedbed, remainder ploughed in.

All values based on 1 microplot only.



62/A/9.6

Microplots on continuous wheat site

Sugar beet

Treatment	Plots		
	7	8	9
P K	<u>Roots (washed): tons per acre</u>		
0 24	14.90	15.34	15.04
1 24	13.19	13.47	13.22
4 24	13.96	13.81	15.69
0 24	15.44	12.08	14.44
1* 24	13.20	15.03	11.88
4* 24	14.33	13.84	15.70
4 0	9.78	10.15	12.85
4 6	12.65	13.86	12.41
4 12	13.99	12.82	16.93
4 24	14.76	10.19	14.51
4 0*	11.56	10.22	13.37
4 6*	12.23	11.79	12.42
4 12*	13.31	12.39	14.52
4 24*	15.48	13.43	13.32
P K	<u>Sugar percentage</u>		
0 24	16.8	17.0	17.0
1 24	16.6	16.8	17.2
4 24	17.0	16.5	17.3
0 24	16.8	16.4	17.2
1* 24	17.4	16.9	17.5
4* 24	17.3	16.4	17.2
4 0	16.2	16.1	16.4
4 6	16.6	16.4	17.1
4 12	16.5	16.7	17.6
4 24	17.2	16.6	16.8
4 0*	16.4	16.2	17.0
4 6*	16.7	16.7	17.4
4 12*	16.4	15.8	17.3
4 24*	17.0	16.0	17.0

All values based on 1 microplot only except <sup>F K</sup> 0 24 which are based on 2.

\*Indicates applied to seedbed, remainder ploughed in.



62/A/9.7

Microplots on continuous wheat site

Treatment	<u>Sugar beet</u>		
	7	8	9
P K	<u>Total sugar: cwt per acre</u>		
0 24	50.2	52.0	51.0
1 24	43.8	45.2	45.5
4 24	47.4	45.7	54.3
0 24	52.0	39.6	49.7
1* 24	63.3	50.7	41.5
4* 24	49.7	45.3	53.9
4 0	31.6	32.6	42.0
4 6	41.9	45.4	42.5
4 12	46.3	42.7	59.7
4 24	50.8	33.7	48.8
4 0*	38.0	33.1	45.5
4 6*	40.9	39.4	43.1
4 12*	43.7	39.0	50.2
4 24*	52.5	43.0	45.3
P K	<u>Tops: tons per acre</u>		
0 24	13.24	13.15	15.38
1 24	13.80	13.33	12.59
4 24	13.15	13.98	11.48
0 24	14.82	12.04	13.34
1* 24	14.72	13.98	12.13
4* 24	12.78	13.15	14.08
4 0	10.93	11.30	13.80
4 6	12.96	14.72	12.87
4 12	13.43	13.06	14.08
4 24	12.32	10.83	12.78
4 0*	13.33	11.48	13.15
4 6*	12.32	11.11	12.41
4 12*	13.71	11.85	15.00
4 24*	12.96	12.13	12.32

All values based on 1 microplot only except P K 0 24 which are based on 2.

\*Indicates applied to seedbed, remainder ploughed in.