ROTHAMSTED RESEARCH

Yields of the Field Experiments 1960

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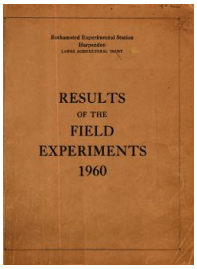

Classical Experiments

Rothamsted Research

Rothamsted Research (1961) *Classical Experiments ;* Yields Of The Field Experiments 1960, pp 5 - 20 **- DOI: https://doi.org/10.23637/ERADOC-1-180**

60/A/1.1

WHEAT - BROADBALK 1960

The 117th year

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

Cultivations, etc.:

Cropped sections. Ground chalk applied: Sept 4, 1959. Section IA sprayed with 2,4-D ester at 1¾ pints in 40 gallons per acre: Sept 8. Dung applied: Sept 21. Ploughed: Sept 21 - 28. Autumn fertilisers applied: Oct 7. Seed drilled at 2¾ bushels per acre: Oct 19. Spring fertilisers applied: Apr 4, 1960. Second dressing of nitrate of soda applied to plot 16; Section IA sprayed with CMPP at 6 pints in 40 gallons per acre: Apr 28. Combined: Aug 31 - Sept 9. Variety: Squarehead's Master 13/4.

Fallow section. (III) Ploughed: Sept 21 - 28, 1959; Apr 26, 1960; July 2.

Broadbalk Wilderness. N.

In 1960 grazing of the mown portion of Broadbalk Wilderness was introduced.

Cultivations, etc.: Shrubs grubbed out: Nov 18 - 27, 1959. Part grazed (originally mown): Mar 18 - 21, 1960, Apr 19 - 22, May 17 - 21, June 14 - 18, July 11 - 15, Aug 4 - 8, Sept 2 - 7. The grass was topped after each grazing except the first two.

Summary of Results

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

Section	IV	VA	VB	II	IB	IA	
Years after fallow	1	unlimed 2	limed 2	3	4	9	Mean
2A	24.8	23.0	20.5	23.3	16.8	21.6	22.3
2B	21.8	19.6	18.1	21.2	16.9	19.7	20.0
3	17.3	14.4	12.6	10.1	11.1	11.0	13.1
5	17.4	14.6	11.4	11.5	11.8	11.8	13.5
6	19.1	16.8	16.0	13.2	14.5	13.4	15.8
7	22.5	21.2	19.5	18.7	18.1	18.6	20.1
8	25.7	24.4	17.8	23.5	23.1	21.6	23.2
9	20.3	20.4	18.7	14.9	16.9	18.3	18.1
10	21.5	23.9	22.1	17.3	19.0	20.8	20.4
11	17.7	23.5	21.5	19.1	18.4	19.2	19.6
12	18.8	23.3	19.6	19.8	18.9	20.7	19.9
13	17.4	15.4	14.7	17.5	17.1	16.8	16.7
14	20.1	19.8	16.4	18.0	16.8	20.8	18.6
15	22.2	21.3	12.8	17.9	16.2	18.6	18.6
16	22.9	22.5	19.7	21.9	20.1	23.5	21.8
17	22.3	19.7	17.8	16.3	17.1	15.8	18.6
18	17.0	8.3	9.9	6.7	8.7	7.7	10.4
19	23.5	18.1	14.2	17.4	20.0	18.8	19.1
20				14.5	16.3	14.6	15.2

https://doi.org/10.23637/ERADOC-1-180

60/A/1.2

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

Section	IV	VA	VB	II	IB	IA	
Years after fallow	1	unlimed 2	limed 2	3	4	9	Mean
2A	45.9	41.0	37.4	34.9	29.9	25.2	37.6
2B	41.9	41.3	37.2	37.8	37.9	18.6	38.1
3	23.4	18.2	14.5	13.2	14.5	11.2	16.8
5	28.0	20.9	19.4	19.1	20.5	14.6	21.6
6	35.0	26.0	29.1	20.7	25.7	16.6	26.7
7	37.4	34.2	32.5	29.4	29.9	23.4	32.3
8	37.9	35.6	35.3	33.1	38.8	29.5	35.6
9	35.8	27.7	27.1	22.0	28.5	26.8	28.3
10	25.0	26.9	27.5	19.1	23.2	23.8	23.7
11	28.9	33.1	25.6	22.1	24.3	22.7	26.2
12	29.1	35.6	28.5	24.6	24.4	27.6	28.0
13	32.8	27.7	29.4	29.0	20.6	24.0	28.4
14	31.2	28.5	26.3	19.9	19.0	21.5	24.9
15	33.1	32.1	24.1	24.7	29.1	27.8	28.6
16	42.0	37.7	36.7	27.1	26.0	27.4	33.7
17	35.8	30.3	30.8	23.7	26.9	18.7	28.9
18	29.1	22.6	24.7	11.8	17.6	8.4	20.1
19	40.5	32.0	29.9	26.3	30.3	24.2	31.7
20				22.6	24.6	18.6	22.6

Mean dry matter % as harvested: Grain 77.3
Straw 90.0

https://doi.org/10.23637/ERADOC-1-180

60/A/2.1

BARLEY - HOOSFIELD 1960

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

Note:

In 1960 on strips 1, 2, 3 and 4 the number of row spaces was reduced from 98 to 96 and yields estimated from 4 combine cuts per plot. On strip 6 there were 72 row spaces instead of 74 and yields estimated from 3 combine cuts per plot. On strip 7 yields were estimated from 2 combine cuts per plot. Manures were applied to the full plot areas as hitherto.

On plots showing an uneven growth, straw weights were recorded for all cuts; on the remainder one weight only was taken from a cut chosen at random.

Cultivations, etc.: Sprayed part of plots 5A, 4C, 5.0 with dalapon at 8 lb in 20 gallons per acre: Aug 26, 1959. All plots sprayed with 2,4-D ester at 1¾ pints in 40 gallons per acre: Aug 27. Quinquennial chalk supplement applied to series A, C and plot 5A; resprayed part of plots 5A, 4C, 5.0 with dalapon at 4 lb in 40 gallons per acre: Sept 7. Dung applied, ploughed: ~~Mar~~ Nov 20. Fertilisers applied: Apr 4, 1960. Seed drilled at 2¾ bushels per acre: Apr 7. Strips 1, 2 and 3 sprayed with MCPA at 6½ pints (30% potassium salt) in 40 gallons per acre; and strips 4, 6 and 7 sprayed with CMPP at 6 pints in 40 gallons per acre: May 24. Combined: Sept 5. Variety: Plumage Archer.

https://doi.org/10.23637/ERADOC-1-180

Summary of Results

Plot	Grain (at 85% dry matter): cwt per acre	Straw (at 85% dry matter): cwt per acre
1 0	8.6	3.8
2 0	10.5	3.8
3 0	9.8	4.5
4 0	12.9	7.1
5 0	12.0	8.0
1 A	10.8	5.2
2 A	12.2	6.9
3 A	12.9	9.6
4 A	19.1	12.7
5 A	20.4	14.6
1 AA	12.7	7.4
2 AA	17.5	11.1
3 AA	14.2	10.8
4 AA	18.4	12.8
1 AAS	19.9	10.6
2 AAS	22.5	11.6
3 AAS	20.0	14.8
4 AAS	26.5	19.1
1 C	17.4	7.4
2 C	19.1	6.9
3 C	18.2	10.4
4 C	22.0	13.6
7 - 1	16.4	10.8
7 - 2	31.7	20.1
6 - 1	10.1	9.4
6 - 2	10.8	6.2
1 N	11.4	6.6
2 N	14.7	8.5
Mean dry matter % as harvested	77.6	79.8

https://doi.org/10.23637/ERADOC-1-180

60/A/3

WHEAT AFTER FALLOW - HOOSFIELD 1960

Without manure 1851 and since

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

Area harvested: 0.0331 acres.

Cultivations, etc.:

Cropped plots. Ploughed: Sept 12, 1959. Seed sown at 3 bushels per acre: Oct 19. Combine harvested: Aug ~~13~~ 31, 1960. Variety: Squarehead's Master 13/4.

Fallowed plots. Ploughed twice: Sept 11 and Sept 12, 1959.

Note: Counts of plant shoot and ear number and estimates of Eyespot (Cercosporella herpotrichoides) and Take-All (Ophiobolus graminis) were made. There was no lodging.

Summary of Results

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

Plot	A_1	A_4	A_2	Mean
No. of years of fallow	1	1	3	
	6.1	5.0	8.8	6.6

Mean dry matter % as harvested: 79.5

https://doi.org/10.23637/ERADOC-1-180

GRASS AND MULTIPLE CROPPING AND DIRECT AND RESIDUAL P

AGDELL 1960

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

Multiple cropping 1960

In order to measure the residues of 1959 applications the sub plots were split to carry the phosphate treatments described below.
Rotation (commencing 1959): barley, potatoes, sugar beet.

Area of each sub plot (acres): 0.0017. Area harvested (approx.):
Barley - 0.0009, Potatoes - 0.0007, Sugar beet - 0.0008.

Treatments (per acre).
To sub plots receiving no P_2O_5 in 1959: none; 0.25 cwt P_2O_5.
To sub plots receiving 0.25 cwt P_2O_5 in 1959: 1.00; 1.50 cwt P_2O_5.
To sub plots receiving 1.00 cwt P_2O_5 in 1959: none; 1.50 cwt P_2O_5.

Note: P_2O_5 applied as superphosphate.

Basal dressings. To grass: as 1959.
To potatoes and sugar beet: 1.2 cwt N per acre as sulphate of ammonia and 1.2 cwt K_2O per acre as sulphate of potash.
To barley: 0.6 cwt N per acre as sulphate of ammonia and 0.6 cwt K_2O per acre as sulphate of potash.

Cultivations, etc.: All plots ploughed: Nov 23, 1959.
Grass. Seed drilled at 40 lb per acre: Apr 8, 1960. 'Nitro-Chalk' applied: May 19. Sprayed with CMPP at 5 pints in 18 gallons per acre; parts of plots 4, 5 and 6 re-drilled: June 30. Part of plot 3 re-drilled: July 7. Plots 1 and 2 cut, other plots topped: July 22. 'Nitro-Chalk' applied: July 26. Plots 1 and 2 cut (2nd cut), plots 3, 4, 5 and 6 cut (1st cut): Sept 26. Variety: S37 Cocksfoot.
Barley. Treatment fertilisers applied: Apr 7, 1960. Seed drilled at 3 bushels per acre; basal NK applied: Apr 8. Sprayed with CMPP at 4 pints in 25 gallons per acre: May 30. Harvested: Aug 18 - 25. Variety: Proctor.
Potatoes. Rotary cultivated: Apr 14, 1960. Ridged: Apr 19. Fertilisers applied; potatoes hand planted: Apr 20. Earthed up: June 9. Sprayed with copper fungicide at 5 lb in 40 gallons per acre: July 15 and Aug 10. Sprayed with demeton methyl at 12 fluid oz in 25 gallons per acre: July 27. Lifted: Sept 27. Variety: Majestic (chitted).
Sugar beet. Fertilisers applied: Apr 7, 1960. Seed drilled at 20 lb per acre: Apr 8. Dusted with aldrin against flea beetle: May 7. Singled: June 8. Sprayed with demeton methyl at 12 fluid oz in 25 gallons per acre: June 22, July 15 and July 27. Harvested: Oct 18. Variety: Klein E.

https://doi.org/10.23637/ERADOC-1-180

Summary of Results

Manure to turnips until 1948 Plot Rotation	None since 1848 5 Fallow	6 Clover	Mineral manure* no nitrogen 3 Fallow	4 Clover	Mineral* and nitrogeneous manure+ 1 Fallow	2 Clover	Mean
Grass dry matter: cwt per acre							
1st cut	0.0	0.0	0.0	0.0	12.9	9.4	3.7
2nd cut	7.1	11.0	36.4	36.1	36.4	35.6	27.1
Total of 2 cuts	7.1	11.0	36.4	36.1	49.3	45.0	30.8
Barley grain (at 85% dry matter): cwt per acre							
P_2O_5 cwt per acre 1959 / 1960							
None / None	10.7	10.3	22.6	23.4	22.8	20.7	18.4
None / 0.25	12.0	13.3	22.4	24.4	23.1	20.9	19.4
0.25 / 1.00	14.0	19.4	27.3	26.4	24.4	24.8	22.7
0.25 / 1.50	14.8	23.3	27.6	26.5	25.1	24.0	23.6
1.00 / None	15.1	18.5	24.7	24.6	23.4	22.3	21.4
1.00 / 1.50	17.2	25.0	27.2	26.1	24.9	25.6	24.3
Mean	14.0	18.3	25.3	25.2	23.9	23.0	21.6
Barley straw (at 85% dry matter): cwt per acre							
1959 / 1960							
None / None	15.2	11.7	23.3	22.3	26.0	24.6	20.5
None / 0.25	14.8	14.2	21.5	22.1	24.3	23.9	20.1
0.25 / 1.00	16.8	18.0	26.6	24.6	25.5	25.9	22.9
0.25 / 1.50	17.1	19.7	25.4	24.3	25.7	26.0	23.0
1.00 / None	17.1	17.6	23.9	21.9	25.2	23.4	21.5
1.00 / 1.50	18.5	21.6	25.9	24.7	24.9	26.6	23.7
Mean	16.6	17.1	24.4	23.3	25.3	25.1	22.0

Mean dry matter % as harvested: Grain 71.9, Straw 45.4

*P, K, Na, Mg.

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

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Manure to turnips until 1948 Plot Rotation	None since 1848 5 Fallow	6 Clover	Mineral manure* no nitrogen 3 Fallow	4 Clover	Minereal* and nitrogeneous manure+ 1 Fallow	2 Clover	Mean
Potatoes, total tubers tons per acre							
P_2O_5 cwt per acre 1959 1960							
None None	5.74	6.66	18.15	14.60	18.27	19.22	13.77
None 0.25	9.08	9.08	18.94	16.46	19.45	20.36	15.56
0.25 1.00	12.72	11.97	20.40	19.65	22.26	23.12	18.35
0.25 1.50	13.77	14.60	20.56	19.53	22.42	23.52	19.07
1.00 None	9.47	9.87	17.72	16.57	19.10	20.36	15.52
1.00 1.50	13.77	14.64	21.03	19.81	22.81	23.60	19.28
Mean	10.75	11.13	19.46	17.77	20.71	21.69	16.92
Sugar beet, Roots (washed): tons per acre							
1959 1960							
None None	9.89	7.28	15.99	11.51	11.91	16.06	12.11
None 0.25	12.02	8.99	16.15	13.51	12.20	16.92	13.30
0.25 1.00	15.30	12.41	16.98	13.49	14.21	15.86	14.71
0.25 1.50	16.44	14.50	15.64	12.94	14.49	15.43	14.91
1.00 None	14.24	12.52	15.21	12.18	14.12	14.98	13.88
1.00 1.50	15.39	14.16	15.33	15.74	14.80	16.30	15.29
Mean	13.88	11.64	15.88	13.23	13.62	15.92	14.03
Sugar beet, Sugar percentage							
1959 1960							
None None	15.3	14.5	15.8	15.5	14.8	15.7	15.3
None 0.25	15.5	14.6	15.3	15.5	14.8	15.7	15.2
0.25 1.00	16.3	15.1	16.2	15.4	15.4	15.7	15.7
0.25 1.50	16.0	15.3	16.1	15.5	15.5	16.0	15.7
1.00 None	16.2	15.6	16.0	16.0	15.0	15.8	15.8
1.00 1.50	16.2	15.4	16.1	16.0	15.3	15.6	15.8
Mean	15.9	15.1	15.9	15.6	15.1	15.7	15.6
Sugar beet, Total sugar: cwt per acre							
1959 1960							
None None	30.4	21.0	50.5	35.8	35.2	50.4	37.2
None 0.25	37.1	26.4	49.6	41.9	36.1	53.1	40.7
0.25 1.00	49.8	37.4	54.9	41.4	43.9	49.6	46.2
0.25 1.50	52.4	44.2	50.3	40.2	45.0	49.2	46.9
1.00 None	46.2	39.2	48.5	39.0	42.4	47.3	43.8
1.00 1.50	49.7	43.6	49.2	50.3	45.0	51.0	48.1
Mean	44.3	35.3	50.5	41.4	41.3	50.1	43.8

*P, K, Na, Mg.
+Rape dust (or castor meal + ammonium sulphate).

https://doi.org/10.23637/ERADOC-1-180

Manure to turnips until 1948		None since 1848		Mineral manure* no nitrogen		Mineral* and nitrogenous manure+		
Plot		5	6	3	4	1	2	
Rotation		Fallow	Clover	Fallow	Clover	Fallow	Clover	Mean
P_2O_5 cwt per acre		Sugar beet, Tops: tons per acre						
1959	1960							
None	None	14.14	9.60	17.58	17.28	16.91	16.78	15.38
None	0.25	15.40	13.69	18.21	17.78	18.85	18.31	17.04
0.25	1.00	18.75	19.16	18.22	19.45	18.72	16.57	18.48
0.25	1.50	19.46	20.01	15.00	18.52	19.52	16.44	18.16
1.00	None	16.89	16.15	14.40	15.40	17.85	14.40	15.85
1.00	1.50	18.49	18.71	15.50	19.86	19.49	18.15	18.37
Mean		17.19	16.22	16.48	18.05	18.55	16.77	17.21
		Sugar beet, Plant number: thousands per acre						
1959	1960							
None	None	33.0	36.3	37.2	34.5	33.3	31.8	34.4
None	0.25	36.0	34.3	33.0	34.2	32.7	33.6	34.0
0.25	1.00	34.0	34.7	36.9	33.9	34.2	31.8	34.2
0.25	1.50	34.7	35.7	36.9	32.4	32.7	34.2	34.4
1.00	None	34.0	33.4	34.5	32.7	34.2	31.2	33.3
1.00	1.50	35.3	36.4	32.7	34.2	33.6	32.4	34.1
Mean		34.5	35.1	35.2	33.6	33.4	32.5	34.1

*P, K, Na, Mg.

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

https://doi.org/10.23637/ERADOC-1-180

60/A/5

HAY - THE PARK GRASS PLOTS 1960

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

Use of the flail-type forage harvester

Yields are based on sample cuts as for the second cut in 1959.

Cultivations, etc.: Ground chalk applied: Jan 27, 1960. Mineral fertilisers applied: Feb 5. Nitrogenous fertilisers applied: 1st dressing - Mar 31; 2nd dressing - Apr 28. Cut twice: June 15 and Oct 11.

Note: Commencing in 1960 yields from both 1st and 2nd crops will be presented as dry matter.

Summary of Results

Dry matter: cwt per acre

Plot	Not limed 1st crop	Not limed 2nd crop	Not limed Total	Limed 1st crop	Limed 2nd crop	Limed Total
1	5.9	4.2	10.1	15.2	10.7	25.9
2	13.4	11.2	24.6	13.8	11.8	25.6
3	12.4	9.8	22.2	13.5	9.9	23.4
4-1	17.9	13.1	31.0	13.3	10.5	23.8
4-2	17.8	16.1	33.9	27.3	14.0	41.3
5-1	10.1	9.2	19.3			
5-2	16.7	15.6	32.3			
6	20.1	18.4	38.5			
7	23.6	17.3	40.9	30.9	21.1	52.0
8	18.6	15.8	34.4	12.1	13.7	25.8
9	42.3	16.5	58.8	41.3	14.4	55.7
10	26.5	17.1	43.6	29.3	11.1	40.4
11-1	50.7	32.6	83.3	42.9	27.6	70.5
11-2	54.1	28.7	82.8	49.8	29.6	79.4
12	14.5	15.7	30.2			
13	24.0	16.9	40.9	24.8	22.4	47.2
14	41.8	21.4	63.2	45.9	18.4	64.3
15	18.2	13.0	31.2	30.4	23.8	54.2
16	34.7	18.4	53.1	40.4	21.5	61.9
17	21.4	13.9	35.3	20.6	10.7	31.3
18	5.7	13.9	19.6	21.6*	8.3*	29.9*
				23.0+	11.0+	34.0+
19	24.6	18.3	42.9	28.9*	17.3*	46.2*
				29.5+	20.7+	50.2+
20	28.4	18.9	47.3	33.9*	19.9*	53.8*
				35.5+	19.1+	54.6+

*Heavy liming. +Light liming.

Mean dry matter % as cut: 1st crop 24.9; 2nd crop 25.6.

https://doi.org/10.23637/ERADOC-1-180

BARLEY - EXHAUSTION LAND HOOSFIELD 1960

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

Basal dressing: 0.5 cwt N per acre as sulphate of ammonia.

Cultivations, etc.: Sprayed with dalapon at 8 lb in 20 gallons per acre: Aug 26, 1959. Sprayed with dalapon at 4 lb in 40 gallons per acre: Sept 2. Ground chalk applied to plot 2 at 21 cwt per acre: Sept 7. Ploughed: Nov 17. Sulphate of ammonia applied: Mar 7, 1960. Seed drilled at 2¾ bushels per acre: Mar 17. Sprayed with CMPP at 6 pints in 40 gallons per acre: May 25. Combine harvested: Sept 6. Variety: Plumage Archer.

Summary of Results

Barley

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

Plots not cross cropped in 1957 and 1958 and combine harvested in 1959

Plot.	Manuring to potatoes 1876 - 1901*	Grain	Straw
2	Unmanured after dung 1876 - 81	17.0	10.7
4	Dung	24.8	15.0
6	Nitrate of soda	16.2	10.0
8	Nitrate of soda and complete minerals	19.7	13.4
10	Complete minerals	21.6	13.8

Plots cross cropped in 1957 and 1958 and combine harvested in 1959

Plot.	Manuring to potatoes 1876 - 1901*	Grain	Straw
1	Unmanured	19.0	12.4
3	Dung	24.6	17.2
5	Ammonium salts	17.6	11.3
7	Ammonium salts and complete minerals	20.3	14.0
9	Superphosphate	20.4	12.9
Mean dry matter % as harvested:		77.6	88.9

*For certain changes see history.

https://doi.org/10.23637/ERADOC-1-180

60/A/7

CLOVER - ROTHAMSTED GARDEN 1960

The 107th year

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

Molybdenum test 1960: The two plots were sub-divided for a test of molybdenum spray:-
None; 1 lb sodium molybdate in about 5000 gallons of water per acre.

Cultivations, etc.: Muriate of potash applied: Dec 18, 1959. Blank patches resown: Apr 11, 1960. Molybdenum spray applied: June 17. Cut twice: July 5, Sept 28.

Summary of Results

Dry matter: cwt per acre

Muriate of Potash: cwt per acre	Spray: None	Spray: Sodium molybdate	Mean
	1st cut		
None	4.9	1.0	3.0
2	14.2	3.9	9.0
Mean	9.6	2.4	6.0
	2nd cut		
None	8.7	4.7	6.7
2	12.5	9.8	11.2
Mean	10.6	7.2	8.9
	Total of 2 cuts		
None	13.6	5.7	9.6
2	26.7	13.7	20.2
Mean	20.2	9.7	14.9

Mean dry matter % as harvested: 1st cut 22.9
2nd cut 22.2
Total of 2 cuts 22.6

https://doi.org/10.23637/ERADOC-1-180

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WHEAT AND BARLEY, AND BARLEY AND POTATOES MICROPLOTS - WOBURN STACKYARD 1960

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

Strip cropping and microplots 1960: Wheat and barley were sown in strips as in 1949, except that on the south eastern of the 3 blocks of each of the old experiments, the barley strip was replaced by 2 strips, one of potatoes, one of barley, for micro-plot tests of P and K fertilisers.

Area of each main plot (acres):		Area harvested (acres):
10a - 11b	0.0274	0.0206
Remainder	0.0411	0.0234

Area of each microplot (acres):		Area harvested (acres):	
11a and 11b	0.0034	Barley -	0.0019
		Potatoes -	0.0014
Remainder	0.0026	Barley -	0.0013
		Potatoes -	0.0010

Treatments (to microplots only). Certain combinations of:-
Superphosphate:- None, 0.25 (P_1), 1.0 (P_4) cwt P_2O_5 per acre (barley and potatoes).
Sulphate of potash:- None, 0.15 (K_1), 0.6 (K_4) cwt K_2O per acre (barley).
Sulphate of potash:- None, 0.30 (K_2), 1.2 (K_8) cwt K_2O per acre (potatoes).
Plots 11a and 11b being narrower than the rest were divided into 4 microplots each instead of 16 and carried tests of K only (continuous wheat site) or P only (continuous barley site).

Basal dressings per acre:
To wheat and barley:- 0.9 cwt N as 'Nitro-Chalk'.
To microplots:-
Potatoes: 1.2 cwt N as 'Nitro-Chalk'.
Barley: 0.6 cwt N as 'Nitro-Chalk'.

Cultivations, etc.: Ground chalk applied to whole area at 11 cwt per acre: Sept 10, 1959.
Wheat: Permanent wheat site ploughed: Sept 11. Permanent barley site ploughed: Sept 15. Seed drilled at 3 bushels per acre: Oct 22, 1959. 'Nitro-Chalk' applied: Mar 21, 1960. Sprayed with DNOC at 2 gallons in 8 gallons per acre: May 3. Combine harvested: Aug 31. Variety: Squarehead's Master 13/4.
Barley: Ploughed 2nd time: Nov 12 - 23, 1959. Seed drilled at $2\frac{3}{4}$ bushels per acre; 'Nitro-Chalk' applied: Mar 21, 1960. Sprayed with TCB/MCPA at 4 pints in 40 gallons per acre: May 23. Combine harvested: Aug 30. Variety: Plumage Archer.

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Microplots.

Potatoes: Ploughed 2nd time: Nov 12 - 23, 1959. Basal N, basal and treatment P and K applied on the flat: Apr 21, 1960. Potatoes planted by machine: Apr 22. Blanks in rows planted with chitted seed: May 27. Earthed up: June 13. Lifted: Sept 19. Variety: Majestic.

Barley: Basal and treatment P and K applied: Mar 22, 1960. Basal N applied, seed drilled at 2¾ bushels per acre: Mar 23. Sprayed with TCB/MCPA at 4 pints in 40 gallons per acre: May 23. Harvested: Aug 10. Variety: Plumage Archer.

Summary of Results

Main plots

Crop in 1960	Wheat		Barley	
Crop in old scheme	Continuous wheat	Continuous barley	Continuous wheat	Continuous barley
Grain (at 85% dry matter): cwt per acre				
Plot 1	12.2	24.9	21.3	17.9
2	9.7	24.2	15.4	16.9
3	20.0	27.4	20.4	16.0
4	15.1	21.9	21.9	19.2
5	15.0	24.0	23.0	19.0
6	20.2	25.9	24.7	23.5
7	20.9	27.3		
8	20.3	27.2		
9	23.7	27.6		
10a	19.3	25.9	19.6	20.4
10b	20.3	24.5	18.7	17.7
11a	25.3	24.9	20.9	21.9
11b	25.7	24.5	22.5	21.8
Straw (at 85% dry matter): cwt per acre				
Plot 1	26.4	29.3	18.4	13.5
2	18.6	25.9	12.8	13.3
3	22.9	41.4	15.1	12.4
4	26.9	23.0	18.1	13.3
5	19.2	26.7	17.3	12.9
6	22.8	31.2	17.5	15.6
7	23.5	34.7		
8	20.3	44.2		
9	29.3	47.4		
10a	22.0	34.8	11.2	13.6
10b	26.8	33.4	10.3	11.6
11a	+	+	13.5	14.3
11b	32.4	44.1	15.2	13.3
Mean dry matter % as harvested: Grain	76.6		78.7	
Straw	84.5		83.9	

+ Not recorded.

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Microplots

Barley

Crop in old scheme		Continuous wheat					Continuous barley				
Treatment	No. sub plots	Plot 7	8	9	11a*	11b*	11a*	11b*	Plot 9	8	7
P K		Grain (at 85% dry matter): cwt per acre									
0 4	4	20.0	18.6	27.0			23.8	24.3	23.0	23.4	16.6
1 4	2	20.4	18.6	26.3			24.1	26.1	25.8	24.4	19.3
4 4	2	23.2	18.1	28.4			24.5	26.9	26.9	25.8	19.7
4 0	4	24.6	19.0	24.2	23.2	24.6			25.0	23.5	20.6
4 1	2	25.9	18.8	24.6	22.5	26.6			27.4	24.0	21.3
4 4	2	26.2	18.0	26.4	25.0	26.8			26.9	23.8	23.0
		Mean dry matter % as harvested: 75.7									
		Straw (at 85% dry matter): cwt per acre									
0 4	4	24.0	24.3	31.6			26.9	28.0	24.0	24.2	19.6
1 4	2	24.1	24.9	30.9			26.2	29.1	29.5	24.9	21.1
4 4	2	26.9	26.5	31.6			27.7	28.1	29.0	28.8	23.3
4 0	4	27.8	24.3	28.6	26.5	29.9			27.1	24.4	22.0
4 1	2	26.0	26.5	30.0	27.5	26.7			28.1	23.9	22.0
4 4	2	30.7	27.2	32.4	30.9	33.5			28.7	26.4	24.0
		Mean dry matter % as harvested: 54.2									

*On these plots the number of sub plots was halved.

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Microplots

Potatoes

Crop in old scheme / Treatment	No. sub plots	Continuous wheat Plot 7	8	9	11a*	11b*	Continuous barley Plot 11a*	11b*	9	8	7
		Total tubers: tons per acre									
P K											
0 4	4	15.10	14.85	18.64			15.71	16.23	17.78	18.67	17.34
1 4	2	15.34	16.96	17.71			16.03	15.07	18.64	19.39	16.67
4 4	2	16.32	16.09	19.74			18.59	14.58	19.16	19.85	18.99
4 0	4	11.92	15.16	16.30	15.03	16.63			16.41	16.93	14.27
4 2	2	14.18	14.87	17.71	13.62	18.43			16.44	17.19	16.96
4 8	2	16.96	16.15	19.33	18.83	18.83			18.17	18.75	18.23
		Percentage ware ($1\frac{5}{8}$" riddle)									
0 4	4	91.5	88.7	91.2			91.6	88.3	93.6	94.8	94.6
1 4	2	90.9	88.1	92.0			90.0	89.9	93.5	94.4	93.5
4 4	2	91.8	92.0	91.9			87.5	89.0	92.9	93.4	95.7
4 0	4	84.6	85.9	89.8	84.8	89.1			92.1	91.2	91.0
4 2	2	91.5	89.5	88.2	86.5	91.7			92.8	91.6	94.2
4 8	2	89.4	93.3	92.7	92.8	87.7			90.6	91.9	92.0

*On these plots the number of sub plots was halved.

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