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# Yields of the Field Experiments 1961

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## 61/W/A/8 Stackyard Woburn - Wheat and Barley and Microplots

### Rothamsted Research

Rothamsted Research (1962) *61/W/A/8 Stackyard Woburn - Wheat and Barley and Microplots* ;  
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61/A/8.1

WHEAT AND BARLEY, AND BARLEY, POTATO AND SUGAR BEET MICROPLOTS -

WOBURN STACKYARD 1961

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

Strip cropping and microplots 1961: Wheat and barley were sown in strips as in 1960. The microplots were continued with crops interchanged, and were extended to include a strip of sugar beet along their south eastern edge, following wheat in 1960. Plots 7, 8 and 9 of the Continuous Wheat experiment were bare fallowed.

Area of each main plot (acres):	Area harvested (acres):
10a - 11b            0.0274	10                    0.0200
	11 Wheat - 0.0100,
	Barley - 0.0200
8    Remainder            0.0411	Variable 0.0070 - 0.0240

Area of each microplot (acres):	Area harvested (acres):
11a and 11b        0.0034	Barley            0.0019
	Potatoes        0.0014
	Sugar beet      0.0017
Remainder            0.0026	Barley            0.0013
	Potatoes        0.0010
	Sugar beet      0.0012

Treatments to microplots only, either ploughed in or applied in seedbed (on flat before planting potatoes):

- P test. None; 0.25 ( $P_1$ ); 1.0 ( $P_4$ ) cwt  $P_{25}$  per acre (barley, potatoes and sugar beet).<sup>4</sup> Basal dressing: K at highest rate tested on each crop, ploughed in.
- K test. None; 0.15 ( $K_1$ ); 0.60 ( $K_4$ ) cwt  $K_{20}$  per acre (barley).  
 None; 0.45 ( $K_7$ ); 1.80 ( $K_{12}$ ) cwt  $K_{20}$  per acre (potatoes).  
 None; 0.9 ( $K_6$ ); 3.6 ( $K_{24}$ )<sup>12</sup> cwt  $K_{20}$  per acre (sugar beet).  
 Basal dressing: 1.0 cwt  $P_{25}$  per acre ploughed in.  
 P as superphosphate, K as sulphate of potash.

Note: A measurement of the residues of 1960 treatments  $P_4$ ,  $K_4$  and  $K_6$  was made and the plots concerned received basal N and  $P^4$  or K at appropriate rates.

Basal dressings per acre (N as 'Nitro-Chalk'):-

- To wheat and barley: 0.9 cwt N.  
 To microplots (P test and K test):-  
 Potatoes: 1.2 cwt N.  
 Barley: 0.6 cwt N.  
 Sugar beet: 1.0 cwt N.



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Cultivations, etc.:

Wheat: Ploughed: Sept 26, 1960. Seed drilled at 3 bushels per acre: Jan 17, 1961. Winter wheat ploughed in owing to bird damage: Mar 21. 'Nitro-Chalk' applied, seed drilled at 3 bushels per acre: Mar 22. Sprayed with MCPA/TBA at 4 pints in 40 gallons per acre: May 9. Combine harvested: Aug 28. Variety: July I.

Barley: Ploughed twice: Sept 27, 1960 and Feb 10, 1961. 'Nitro-Chalk' applied, seed drilled at 3 bushels per acre: Mar 9. Sprayed with MCPA/TBA at 4 pints in 40 gallons per acre: May 9. Combine harvested: Aug 28. Variety: Plumage Archer.

Microplots. Basal PK and ploughed in treatment fertilisers applied: Jan 24, 1961. Plots ploughed: Jan 25.

Potatoes: Basal N and broadcast treatment fertilisers applied on the flat, chitted seed planted by machine: Mar 22, 1961. Sprayed twice with demeton methyl at 12 fluid oz in 40 gallons per acre: June 6 and July 11. Sprayed twice with copper fungicide at 5 lb in 40 gallons per acre: Aug 18 and Aug 31. Lifted: Sept 21. Variety: Majestic.

Barley: Basal N and broadcast treatment fertilisers applied, seed drilled at  $2\frac{3}{4}$  bushels per acre: Mar 9, 1961. Harvested: Aug 10. Variety: Plumage Archer.

Sugar beet: Basal N and broadcast treatment fertilisers applied, seed drilled at 12 lb per acre: Apr 12, 1961. Lifted: Oct 16. Variety: Klein E.

Erratum to "Results of the Field Experiments" 1960.

Page 60/A/8.1 the 4th line should read "strips as in 1959 ... "



61/A/8.3

Summary of Results

Main plots

Crop in 1961 Crop in old scheme	Spring wheat		Barley	
	Continuous wheat	Continuous barley	Continuous wheat	Continuous barley
<u>Grain (at 85% dry matter): cwt per acre</u>				
Plot 1	4.1	8.8	14.9	8.9
2	5.6	8.6	10.1	12.3
3	10.0	10.5	12.7	10.8
4	5.5	10.7	21.7	15.7
5	9.3	15.3	18.9	15.3
6	16.2	20.9	21.5	19.6
7	13.0	11.7		
8	11.2	12.7		
9	16.3	14.9		
10 ax	14.1	12.8	13.6	14.5
10 bx	15.0	15.0	14.1	9.7
10 ay	14.2	14.7		
10 by	18.4	20.2		
11 ay			20.0	18.0
11 by			23.3	19.1
11 az	15.2	9.8		
11 bz	14.2	12.5		

<u>Straw (at 85% dry matter): cwt per acre</u>				
Plot 1	10.4	12.3	9.1	5.1
2	7.1	7.9	5.5	4.5
3	10.0	9.2	5.6	5.5
4	14.8	11.0	13.2	7.1
5	9.7	11.4	8.7	7.0
6	11.5	18.8	11.1	10.5
7	11.9	11.4		
8	13.2	21.5		
9	15.4	21.9		
10 ax	9.3	12.0	4.7	6.3
10 bx	10.6	11.4	5.3	4.8
10 ay	9.1	14.6		
10 by	11.1	13.3		
11 ay			8.1	6.5
11 by			12.7	9.8
11 az	17.6	13.9		
11 bz	26.5	19.4		

Mean dry matter % as harvested: Grain 84.4      85.2  
 Straw 89.7      90.8



61/A/8.4

Crop in old scheme Treatment	Continuous wheat 11a & 11b	Microplots			
		Barley		Continuous barley	
		11a 11b	9	8	7
P K	<u>Grain (at 85% dry matter): cwt per acre</u>				
0 4		20.9	25.3	25.1	22.2
1 4		21.9	25.7	24.4	23.7
4 4		25.8	24.9	27.2	25.5
(4)4		24.7	25.4	24.1	19.2
0*4		26.1	25.4	23.4	17.9
1*4		27.2	26.6	26.4	20.6
4 4		24.7	27.9	23.8	21.2
(4)4		28.1	23.6	23.9	17.9
4 0	26.0		22.1	22.8	25.6
4 1	26.5		25.4	25.9	27.6
4 4	24.5		26.3	24.6	27.0
4(8)	25.1		25.7	27.4	27.9
4 0*	23.5		28.1	25.4	25.9
4 1*	24.5		27.2	27.9	25.6
4 4	26.0		25.7	25.7	26.2
4(8)	23.4		28.4	24.2	25.8

Mean dry matter % as harvested: 84.3

P K	<u>Straw (at 85% dry matter): cwt per acre</u>				
0 4		24.8	32.2	22.8	25.4
1 4		29.4	27.1	29.5	25.3
4 4		35.2	36.4	30.2	31.9
(4)4		32.3	33.1	27.9	23.7
0*4		31.7	32.5	30.2	20.8
1*4		32.1	32.5	30.2	22.8
4 4		36.4	36.7	35.2	24.0
(4)4		25.3	25.8	29.5	21.0
4 0	36.0		34.9	26.7	29.2
4 1	30.4		32.0	30.9	31.0
4 4	39.4		32.7	27.9	31.7
4(8)	35.4		30.9	31.1	32.1
4 0*	32.6		33.1	33.3	30.1
4 1*	34.9		30.4	31.4	29.1
4 4	33.8		29.6	33.5	31.8
4(8)	25.6		32.7	30.7	32.2

Mean dry matter % as harvested: 82.4

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

All values based on 1 microplot only.



61/A/8.5

Crop in old scheme	Microplots				
	Continuous wheat	Potatoes		Continuous barley	
Treatment	11a & 11b	11a & 11b	9	8	7
P K	<u>Total tubers: tons per acre</u>				
0 4		14.43	12.27	13.66	11.58
1 4		15.06	15.28	14.58	12.50
4 4		13.78	14.12	13.20	12.96
(4)4		16.51	14.12	13.66	13.20
0 4		13.78	13.66	12.73	10.88
1* 4		15.06	12.50	11.81	11.34
4* 4		16.19	14.12	13.43	12.73
(4)4		16.03	13.66	14.12	11.11
4 0	9.62		12.96	12.04	8.33
4 3	8.81		12.50	13.20	11.11
4 12	9.78		14.58	15.51	12.73
4(4)	10.10		13.66	12.04	8.33
4 0*	10.90		12.04	13.89	8.57
4 3*	11.54		11.81	11.58	10.42
4 12*	12.82		15.05	13.43	10.65
4(4)	11.22		12.04	10.88	10.42
P K	<u>Percentage ware (<math>\frac{5}{8}</math> inch riddle)</u>				
0 4		100.0	96.2	93.2	96.0
1 4		95.7	97.0	96.8	96.3
4 4		94.2	98.4	94.7	94.6
(4)4		93.2	95.1	94.9	94.7
0 4		96.5	94.9	94.5	91.5
1* 4		94.7	98.1	98.0	95.9
4* 4		94.1	93.4	94.8	92.7
(4)4		96.0	93.2	93.4	95.8
4 0	91.7		94.6	92.3	94.4
4 3	90.9		94.4	94.7	91.7
4 12	91.8		95.2	94.0	94.5
4(4)	92.1		93.2	90.4	91.7
4 0*	95.6		94.2	91.7	94.6
4 3*	95.8		96.1	90.0	91.1
4 12*	95.0		96.9	93.1	95.7
4(4)	92.9		94.2	93.6	95.6

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

All values based on 1 microplot only.



61/A/8.6

Crop in old scheme Treatment	Microplots				
	Continuous wheat 11a & 11b	Sugar beet		Continuous barley	
		11a & 11b	9	8	7
P K	<u>Roots (washed): tons per acre</u>				
0 24	15.52		12.56	11.58	11.42
1 24	16.00		14.56	11.90	13.28
4 24	15.06		13.41	12.16	12.33
0* 24	13.94		13.60	12.86	10.84
1* 24	13.92		11.37	10.72	11.64
4* 24	13.57		13.87	10.32	11.11
4 0		12.81	9.16	11.91	6.11
4 6		13.11	13.46	10.90	11.16
4 12		15.51	11.32	11.92	10.90
4 24		15.34	14.27	12.44	11.00
4 0*		14.07	10.45	9.75	8.61
4 6*		14.46	11.22	9.72	9.59
4 12*		12.76	12.56	14.23	12.98
4 24*		14.29	13.30	13.10	13.97
P K	<u>Sugar percentage</u>				
0 24	16.2		15.8	15.4	15.0
1 24	16.0		15.8	14.9	15.6
4 24	16.4		15.5	15.5	15.2
0* 24	15.8		15.8	15.0	14.8
1* 24	14.9		15.2	15.6	14.9
4* 24	16.2		15.7	15.3	15.6
4 0		16.0	15.9	14.9	14.9
4 6		15.9	15.6	15.4	15.3
4 12		15.9	16.2	15.4	15.2
4 24		15.5	15.3	15.1	15.0
4 0*		16.2	15.0	15.1	14.8
4 6*		16.2	15.7	15.1	15.5
4 12*		16.2	15.8	15.6	15.2
4 24*		16.2	16.4	15.6	15.0

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

\*Indicates applied to seedbed, remainder ploughed in.

61/A/8.7

Crop in old scheme	Continuous wheat 11a & 11b	Microplots			
		Sugar beet		Continuous barley	
Treatment		11a & 11b	9	8	7
P K	<u>Total sugar: cwt per acre</u>				
0 24	50.3		39.6	35.6	34.2
1 24	51.0		46.1	35.4	41.4
4 24	49.5		41.6	37.7	37.5
0* 24	44.0		43.0	38.5	32.1
1* 24	41.5		34.5	33.5	34.7
4* 24	43.9		43.6	31.6	34.6
4 0		40.9	29.1	35.6	18.2
4 6		41.6	42.0	33.5	34.1
4 12		49.2	36.6	36.8	33.1
4 24		47.4	43.6	37.5	33.0
4 0*		45.6	31.3	29.4	25.5
4 6*		46.9	35.2	29.3	29.7
4 12*		41.3	39.6	44.4	39.3
4 24*		46.2	43.7	40.9	41.8

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

\*Indicates applied to seedbed, remainder ploughed in.