

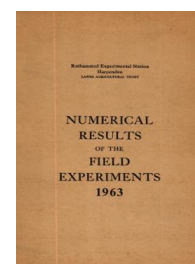
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Yields of the Field Experiments 1963

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Classical Experiments

Rothamsted Research

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63/A/1.1

WHEAT - BROADBALK 1963

(BK)

The 120th year

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

Cultivations, etc.:

Cropped sections. Ground chalk applied: Sept 27, 1962. Ploughed: Sept 27 - Oct 5. Dung applied: Oct 4. Autumn fertilisers applied: Oct 23. Seed drilled at 3 bushels per acre: Nov 30. Spring fertilisers applied: Apr 24, 1963. Second dressing of nitrate of soda applied to plot 16: May 6. Sections IA and VB sprayed with mecoprop/2,4-D at 7 pints in 40 gallons per acre: May 16. Combine harvested: Sept 13. Variety: Squarehead's Master 13/4 (Rothamsted seed from Broadbalk field). Fallow section. (NA) Ploughed: Sept 27 - Oct 5, 1962: May 29, 1963: July 16.

Note: There was a heavy attack of wheat bulb fly (Leptohylemia coarctata) on all plots of Section II (1st after fallow). On plots 10, 11, 12 and 14 the crop failed and was not harvested.

Part of plot 19 (Section IV) - the crop was heavily infested with creeping grasses (Holcus mollis and Agrostis stolonifera), and the harvested area was modified.

Broadbalk Wilderness. Cultivations etc.:

Ungrazed meadow (north): Shrubs grubbed out: Mar 26, 1962.

Grazed meadow (centre): Grazed by sheep: Apr 22 - May 7, 1962, June 1 - 14, July 4 - 13, Aug 16 - 21, Sept 3, Nov 4 - 13.

Grass topped: May 8, June 13, July 12, Aug 19.

Woodland (south): East and west sides trimmed: July 30 - Aug 6, 1962.

63/A/1.2

Summary of Results

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

Section Years after fallow	II	IB	III	IV	VB	IA	
	1	2	3	4	5	12	Mean
2A	27.2	31.1	18.2	19.2	19.9	22.5	22.6
2B	26.8	28.5	18.2	16.9	13.9	25.3	21.0
3	11.4	12.6	10.2	9.9	10.4	6.3	10.5
5	14.2	10.8	11.5	13.1	18.2	11.2	13.2
6	14.8	17.7	13.6	18.6	16.4	15.2	16.0
7	16.2	22.1	17.7	20.1	16.3	22.9	18.6
8	16.7	18.1	20.5	17.1	25.2	32.3	19.8
9	12.7	19.4	17.8	18.3	10.6	19.1	16.1
10	*	12.5	17.9	14.1	9.8	11.0	14.1
11	*	17.1	10.9	15.2	7.2	15.8	13.0
12	*	15.8	12.6	18.3	14.6	17.7	15.5
13	16.8	20.2	19.7	18.0	16.0	23.2	18.4
14	*	18.3	15.6	18.5	15.1	20.1	17.2
15	18.6	17.7	17.0	14.5	14.5	21.5	16.8
16	15.5	21.7	19.8	20.4	19.0	27.6	19.5
17	14.3	10.8	10.8	11.5	11.3	9.7	11.8
18	14.7	19.2	20.3	19.2	19.7	18.6	18.4
19	13.6	19.2	20.5	14.3	19.3	20.5	17.3
20	13.8	18.0				15.1	15.6

Mean dry matter % as harvested: 77.5

* No yields recorded

63/A/1.3

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

Section Years after fallow	II	IB	III	IV	VB	IA	
	1	2	3	4	5	12	Mean
2A	45.5	36.6	32.4	26.2	23.9	27.8	33.2
2B	46.4	38.5	35.9	30.0	35.6	24.1	36.6
3	20.3	17.2	13.9	13.1	10.5	7.0	14.8
5	30.0	18.8	18.0	17.4	23.8	9.5	21.0
6	29.4	29.2	26.9	29.4	23.3	16.8	27.3
7	43.4	38.1	37.2	36.0	28.4	27.6	36.9
8	45.2	39.2	43.7	34.7	35.9	44.6	40.5
9	36.8	35.8	31.6	33.9	23.0	26.9	32.5
10	*	21.5	24.6	21.0	14.5	20.2	21.1
11	*	26.1	18.6	25.4	8.4	20.5	20.4
12	*	23.6	22.2	29.4	16.9	22.7	23.8
13	42.1	34.9	34.5	34.0	22.7	29.6	34.5
14	*	28.8	26.1	26.9	18.6	25.1	25.5
15	37.7	27.9	26.6	26.5	18.0	24.8	28.2
16	45.2	44.5	39.7	45.2	33.5	41.3	42.2
17	25.7	19.0	19.9	19.9	14.9	11.6	20.1
18	33.7	32.4	33.6	37.6	30.0	22.3	33.3
19	28.1	25.4	24.0	24.8	25.8	22.6	25.5
20	24.5	26.7				21.6	24.8

Mean dry matter % as harvested: 89.3

* No yields recorded

63/A/2

BARLEY - HOOSFIELD 1963

(HB)

The 112th year

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

Cultivations, etc.: Sprayed with dalapon at 7.4 lb in 40 gallons per acre: Sept 27, 1962 and again at 3.7 lb in 40 gallons per acre: Oct 16. Dung applied: Mar 9, 1963. Ploughed: Mar 25. Fertilisers applied, seed drilled at 2.75 bushels per acre: Apr 24. Sprayed with mecoprop/2,4-D at 6 pints in 40 gallons per acre: June 11. Combine harvested: Sept 17. Variety: Plumage Archer.

Summary of Results

Plot		Grain (at 85% dry matter): cwt per acre	Straw (at 85% dry matter): cwt per acre
1	O	3.6	3.6
2	O	5.9	4.1
3	O	4.1	2.2
4	O	6.3	3.4
5	O	6.5	4.2
1	A	5.4	6.8
2	A	15.8	15.1
3	A	13.3	13.4
4	A	22.5	17.3
5	A	20.2	19.0
1	AA	5.3	7.1
2	AA	17.4	17.6
3	AA	12.6	11.5
4	AA	24.8	19.5
1	AAS	10.8	9.8
2	AAS	20.1	17.7
3	AAS	19.2	18.2
4	AAS	25.5	19.7
1	C	15.8	13.0
2	C	17.9	12.7
3	C	21.5	16.3
4	C	24.0	15.2
7	- 1	4.8	4.1
7	- 2	29.8	25.8
6	- 1	1.9	3.0
6	- 2	3.5	3.0
1	N	4.4	5.7
2	N	11.5	10.1
Mean dry matter % as harvested:		81.6	74.8

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63/A/3

WHEAT AFTER FALLOW - HOOSFIELD 1963

(HWF)

Without manure 1851 and since

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

The cropped plots were subdivided and Squarehead's Master 13/4 was sown on the South side, Cappelle on the North.

Area of each plot (acres): Squarehead's Master 13/4 - 0.0690.
Cappelle - 0.0552. Area harvested: 0.0365.

Cultivations, etc.:

Cropped plots. Ploughed: Oct 24, 1962. Seed drilled at 3 bushels per acre: Nov 23. Combine harvested: Sept 10.

Fallowed plots. Ploughed three times: Oct 24, 1962, May 31, 1963, July 16.

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

Summary of Results

Plot No. of years of fallow	B3	B4	B1	Mean
	1	1	3	

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

Variety				
Squarehead's Master 13/4	12.4	7.8	12.4	10.9
Cappelle	11.7	13.3	16.6	13.9
Mean	12.0	10.5	14.5	12.4

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

Squarehead's Master 13/4	17.4	9.5	16.7	14.5
Cappelle	16.2	15.9	13.7	15.3
Mean	16.8	12.7	15.2	14.9

Mean dry matter % as harvested: Grain 69.8 Straw 76.3



63/A/4

GRASS - AGDELL 1963

(AG)

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

The areas carrying strip crops in 1961 and 1962 were bare fallowed.

Area harvested (acres): Plots 1, 2 and 3 - 0.0165, plots 4, 5 and 6 - 0.0023.

Cultivations, etc.:

Grass. 'Nitro-Chalk' applied: Mar 25, 1963. Cut: June 6. Grass destroyed with paraquat at 2 lb in 40 gallons per acre: June 15. Fallow areas. Ploughed: Apr 8, 1963.

Note: The grass was abandoned after the first cut because of winter killing and weeds.

Summary of Results

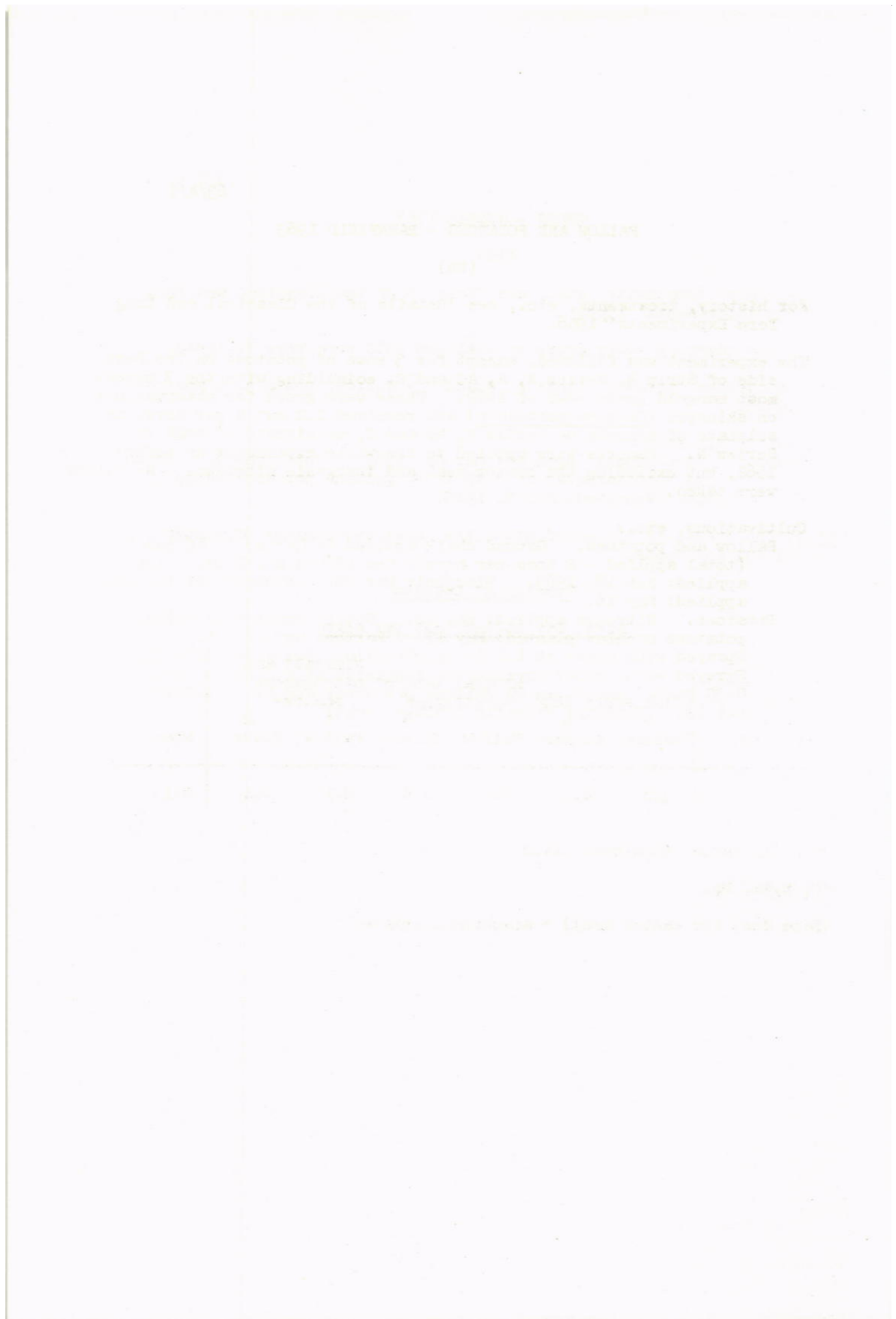
Grass, Dry matter: cwt per acre

Manure to turnips until 1948 Plot Rotation	Mineral manure*				Mineral* and nitrogenous manure+		Mean
	None since 1848		no nitrogen				
	5	6	3	4	1	2	
	Fallow	Clover	Fallow	Clover	Fallow	Clover	
	3.8	2.1	4.5	5.6	2.1	6.1	4.1

Mean dry matter % as cut: 25.2

*P, K, Na, Mg.

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



63/A/5

FALLOW AND POTATOES - BARNFIELD 1963

(BN)

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

The experiment was fallowed, except for 3 rows of potatoes on the East side of Strip 4, Series N, A, AC and C, coinciding with the 3 outermost mangold guard rows of 1962. These were grown for observations on skinspot (Oospora pustulans) and received 1.2 cwt N per acre, as sulphate of ammonia on Series A, AC and C, as nitrate of soda on Series N. Manures were applied to the whole experiment as before 1962, but excluding the castor meal and inorganic nitrogen. No yields were taken.

Cultivations, etc.:

Fallow and potatoes. Ground chalk applied to Series A, AC and C (total applied - 2 tons per acre): Dec 19 and 28, 1962. Dung applied: Feb 18, 1963. Ploughed: Mar 28. Mineral fertilisers applied: May 16.

Potatoes. Nitrogen applied: May 16. Rotary cultivated twice, potatoes machine planted: May 17. Earthed up: July 6. Sprayed with maneb at 1.2 lb in 20 gallons per acre: July 12. Sprayed with copper oxychloride fungicide at 2.3 lb Cu plus 0.35 pints menazon in 20 gallons per acre: Aug 14. Lifted: Oct 19. Variety: Majestic (chitted seed).



63/A/6

HAY - THE PARK GRASS PLOTS 1963

(PG)

The 108th year

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

Cultivations, etc.: Mineral fertilisers and fish meal applied:
Nov 21, 1962. Nitrogenous fertilisers applied: 1st dressing -
Mar 7, 1963: 2nd dressing - Mar 27. Cut twice: June 27
and Oct 1.

Summary of Results

Dry matter: cwt per acre

Plot	1st crop	Not limed 2nd crop	Total	1st crop	Limed 2nd crop	Total
1	5.2	6.8	12.0	15.8	9.4	25.2
2	12.9	11.1	24.0	16.3	11.6	27.9
3	11.4	10.4	21.8	18.2	10.2	28.4
4-1	19.4	14.0	33.4	21.2	11.6	32.8
4-2	22.2	10.5	32.7	26.0	12.5	38.5
5-1	9.6	8.5	18.1			
5-2	23.0	20.5	43.5			
6	30.6	19.6	50.2			
7	32.0	18.8	50.8	42.8	23.4	66.2
8	20.0	17.8	37.8	20.2	15.0	35.2
9	36.8	12.6	49.4	43.2	19.7	62.9
10	24.6	10.8	35.4	29.4	13.2	42.6
11-1	19.3	30.5	49.8	51.7	22.9	74.6
11-2	30.0	29.0	59.0	51.7	28.8	80.5
12	13.1	15.9	29.0			
13	34.2	23.0	57.2	36.7	22.4	59.1
14	45.1	16.8	61.9	37.2	14.2	51.4
15	28.0	16.2	44.2	35.0	19.3	54.3
16	33.7	16.5	50.2	40.1	18.5	58.6
17	15.7	10.6	26.3	21.5	12.1	33.6
18	9.2	9.1	18.3	22.0*	12.1*	34.1*
				21.7+	13.5+	35.2+
19	29.7	21.2	50.9	36.8*	16.4*	53.2*
				37.3+	20.7+	58.0+
20	45.5	23.2	68.7	45.2*	21.4*	66.6*
				43.8+	19.7+	63.5+

*Heavy liming. +Light liming.

Mean dry matter % as cut: 1st crop 24.0: 2nd crop 23.0.

63/A/7

BARLEY - EXHAUSTION LAND HOOSFIELD 1963

(EX)

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

The 'Nitro-Chalk' was combine drilled.

Cultivations, etc.: Sprayed with dalapon at 7.4 lb in 40 gallons per acre: Sept 27, 1962 and again at 3.7 lb in 40 gallons per acre: Oct 16. Ploughed: Mar 27, 1963. Seed combine drilled at 2 bushels per acre: Apr 8. Sprayed with TBA/MCPA at 4 pints in 40 gallons per acre: June 11. Combine harvested: Sept 5. Variety: Proctor.

Summary of Results

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

Plot	Manuring to potatoes 1876 - 1901*	Grain	Straw
1	Unmanured	18.8	11.4
2	Unmanured after dung 1876 - 81	14.2	9.5
3	Dung	26.9	18.7
4	Dung	25.1	16.8
5	Ammonium salts	13.8	9.4
6	Nitrate of soda	13.7	9.1
7	Ammonium salts and complete minerals	24.9	18.3
8	Nitrate of soda and complete minerals	20.7	14.2
9	Superphosphate	25.6	17.8
10	Complete minerals	23.8	17.5
Mean dry matter % as harvested		72.0	70.1

*For certain changes see history.

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Date	Description
1/1/19	1/1/19
1/2/19	1/2/19
1/3/19	1/3/19
1/4/19	1/4/19
1/5/19	1/5/19
1/6/19	1/6/19
1/7/19	1/7/19
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1/28/19	1/28/19
1/29/19	1/29/19
1/30/19	1/30/19
1/31/19	1/31/19

63/A/8

CLOVER - ROTHAMSTED GARDEN 1963

(GC)

The 110th year

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

Cultivations, etc.: Muriate of potash applied: May 18, 1963. Cut twice: July 4 and Oct 14.

Summary of Results

Dry matter: cwt per acre

Muriate of Potash: cwt per acre	Spray in 1961		Mean
	None	Sodium Molybdate	
<u>1st cut</u>			
None	15.9	13.4	14.6
2	39.5	33.9	36.7
Mean	27.7	23.6	25.7

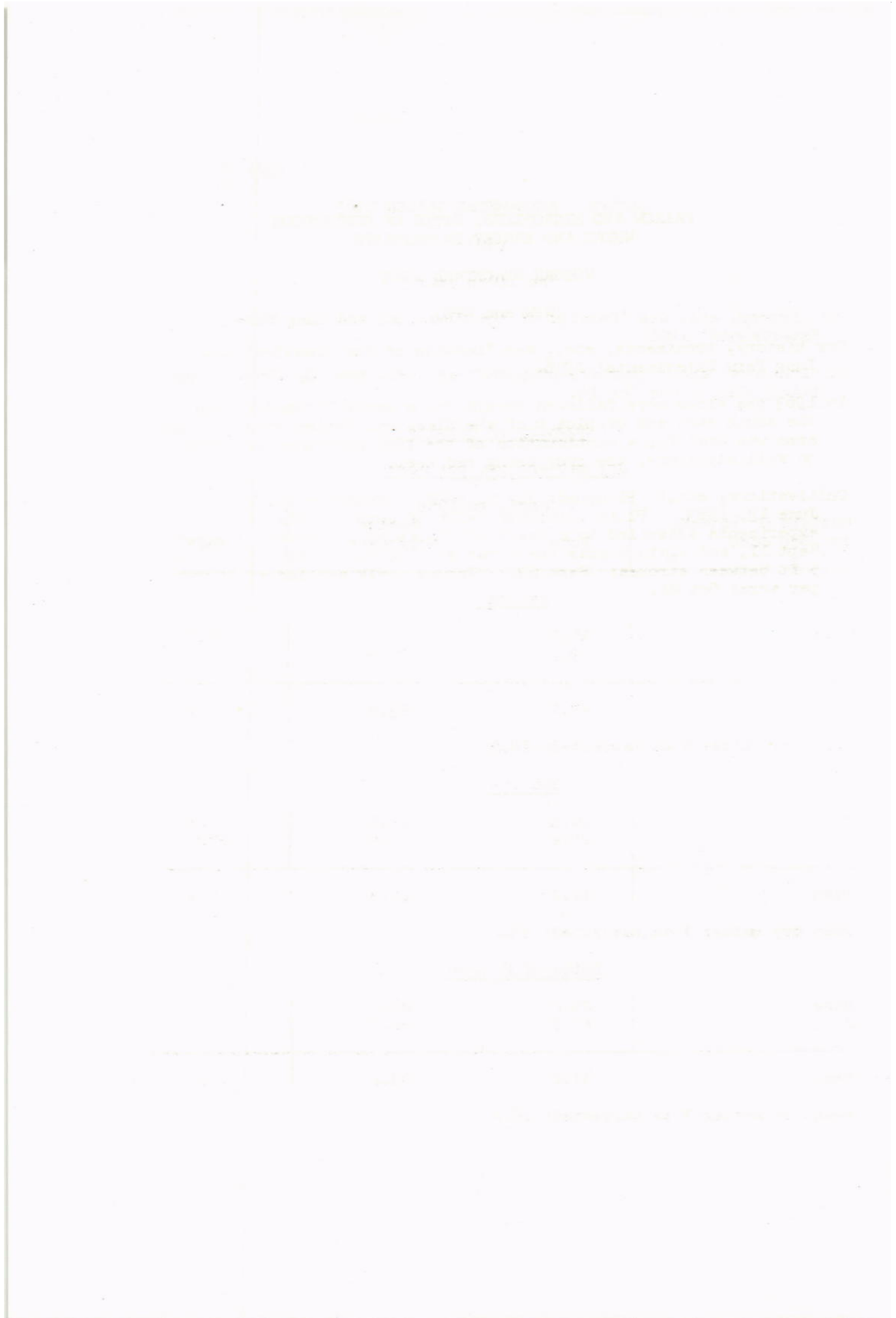
Mean dry matter % as harvested: 14.2

<u>2nd cut</u>			
None	10.3	11.1	10.7
2	28.2	27.8	28.0
Mean	19.2	19.4	19.4

Mean dry matter % as harvested: 23.0

<u>Total of 2 cuts</u>			
None	26.2	24.5	25.4
2	67.7	61.7	64.7
Mean	47.0	43.1	45.0

Mean dry matter % as harvested: 18.6



63/A/9

FALLOW AND MICROPLOTS, SITES OF CONTINUOUS
WHEAT AND BARLEY EXPERIMENTS

WOEBURN STACKYARD 1963

(WPW and WPB)

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

In 1963 the sites were fallowed except for a strip of land across the south east end of plot 6 of the Classical Barley site. This area was used for a continuation of the 1962 microplot experiment on soil structure, the crop being red beet.

Cultivations, etc.: Ploughed: Nov 5, 1962. Rotary cultivated: June 13, 1963. Plots 1-10b and 7-11b of both the Classical experiments subsoiled to a depth of 20 ins, 5 ft between strokes: Sept 11, and again across the first strokes to a depth of 18 ins, 5 ft between strokes: Sept 23. Ground chalk applied at 46 cwt per acre: Oct 21.