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Yields of the Field Experiments 1967

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Classical Experiments

Rothamsted Research

Rothamsted Research (1968) *Classical Experiments* ; Yields Of The Field Experiments 1967, pp 13 - 38 - DOI: <https://doi.org/10.23637/ERADOC-1-157>

67/A/1.1

WHEAT - BROADBALK 1967

(BK)

The 124th year

For history, treatments etc. see 'Details' 1962.

Cultivations, etc.:

Cropped sections: Section IA, sprayed with aminotriazole at 4 lb and ammonium thiocyanate at 3.7 lb in 40 gals: Sept 16, 1966. Ground chalk applied: Sept 21. Ploughed: Oct 12. Dung applied and ploughed in: Oct 14. Autumn fertilisers applied: Nov 2. Rotary cultivated, seed drilled at 185 lb: Nov 3. Spring fertilisers applied: Apr 19, 1967. Second dressing of nitrate of soda applied to plot 16: Apr 27. All sections except Va sprayed with ioxynil/mecoprop (Actril C at 6 pints in 20 gals): May 1. Combine harvested: Aug 31. Variety: Squarehead's Master 13/4 (Rothamsted seed from Broadbalk field).
Fallow section II: Ploughed: Oct 12, 1966. Rotary cultivated: Nov 3. Ploughed: Mar 29 and July 5, 1967.

Broadbalk Wilderness: Cultivations, etc.:

Ungrazed meadow (north): Shrubs grubbed out: Oct 22 - Dec 5, 1966.
Grazed meadow (centre): Grazed by sheep: Apr 10 - 18, 1967, May 15 - 24, June 19 - July 3, July 24 - Aug 4, Aug 30 - Sept 11, Oct 3 - Oct 10, Nov 4 - Nov 8. Grass topped: Apr 19, May 24, July 3, Aug 4, Sept 11.

67/A/1.2

SUMMARY OF RESULTS

GRAIN

Section Years after fallow	IB	III	IV	VA	VB	IA	Mean
	1	2	3	4	9	16	
2A	29.8	17.2	20.6	17.6	15.1	18.8	19.8
2B	33.6	19.6	21.0	17.8	18.0	16.4	21.3
3	20.7	9.8	7.4	10.3	7.9	7.5	10.4
5	20.4	9.0	9.3	12.1	9.2	7.5	11.0
6	20.8	13.2	7.6	12.2	11.0	14.1	12.4
7	22.4	21.6	16.2	12.2	14.9	20.2	18.2
8	27.4	31.6	26.6	15.8	24.3	26.4	26.5
9	21.3	16.3	13.7	14.7	13.0	13.9	15.5
10	18.0	21.7	17.4	14.7	18.0	7.6	17.7
11	23.7	19.1	15.8	10.1	17.5	19.0	17.6
12	23.9	19.8	14.0	10.5	17.3	20.4	17.4
13	26.2	16.2	11.3	9.1	14.4	16.0	15.2
14	30.1	19.3	11.1	15.4	17.9	21.0	18.1
15	20.2	12.0	3.8	9.0	11.2	9.4	10.3
16	31.7	28.9	21.5	24.0	27.1	20.1	25.9
17	16.4	7.5	4.4	9.4	6.3	4.9	7.8
18	19.2	16.2	15.1	10.5	19.9	13.5	15.9
19	21.9	12.1	7.8	12.1	12.6	13.4	12.5
20	16.8					10.7	14.8

Mean D.M. %: 83.7

NOTE: The yields above are calculated (as in all experiments in the 'Results') from the weight of 'first' grain delivered by the combine harvester, adjusted only for moisture content. On certain sub plots in 1967, samples were separated into wheat, weed seeds and rubbish. Results:-

% WEED SEEDS PLUS RUBBISH

Section	Plot no.				
	2	5	7	9	18
IA	0.9	1.0	0.3	0.2	0.7
IB	0.5	0.7	0.5	0.2	0.4
VA	3.7	18.2	3.4	5.2	12.3
VB	1.7	2.3	1.8	0.3	2.5

67/A/1.3

Section Years after fallow	STRAW						Mean
	IB	III	IV	VA	VB	IA	
	1	2	3	4	9	16	
2A	55.2	29.2	34.5	40.0	41.0	32.5	37.3
2B	60.7	34.9	35.7	42.9	40.5	34.3	40.4
3	24.2	11.1	7.6	12.4	9.7	11.1	12.0
5	29.0	9.8	9.5	16.6	11.4	11.0	13.6
6	32.9	17.3	10.8	25.2	17.1	22.0	19.0
7	38.7	37.1	29.1	37.6	35.0	35.8	34.9
8	44.7	48.5	38.3	40.1	44.1	42.0	43.2
9	34.1	26.8	21.5	31.8	25.1	27.0	26.8
10	19.6	27.9	22.4	23.7	27.4	14.9	23.8
11	31.7	27.9	20.3	21.0	28.8	28.9	25.7
12	33.8	28.4	18.7	22.8	27.9	28.3	25.8
13	45.2	30.3	18.1	28.5	33.4	26.7	29.0
14	42.5	29.0	18.2	23.9	25.5	30.0	27.0
15	31.6	16.8	9.3	23.8	18.1	24.9	18.4
16	49.7	44.4	32.9	42.1	47.8	33.2	41.4
17	22.0	9.3	4.9	18.0	11.3	6.3	11.0
18	33.1	23.8	28.3	31.5	35.4	23.6	28.7
19	31.7	17.1	13.1	27.1	17.7	20.0	19.6
20	21.8					19.2	21.0

Mean D.M. %: 86.5

TABLE

No.	NAME						No. of days spent in field
	AT	AV	AV	VI	III	BT	
	1	2	4	5	6	7	
1	1.00	1.00	1.00	1.00	1.00	1.00	1.00
2	1.00	1.00	1.00	1.00	1.00	1.00	1.00
3	1.00	1.00	1.00	1.00	1.00	1.00	1.00
4	1.00	1.00	1.00	1.00	1.00	1.00	1.00
5	1.00	1.00	1.00	1.00	1.00	1.00	1.00
6	1.00	1.00	1.00	1.00	1.00	1.00	1.00
7	1.00	1.00	1.00	1.00	1.00	1.00	1.00
8	1.00	1.00	1.00	1.00	1.00	1.00	1.00
9	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10	1.00	1.00	1.00	1.00	1.00	1.00	1.00
11	1.00	1.00	1.00	1.00	1.00	1.00	1.00
12	1.00	1.00	1.00	1.00	1.00	1.00	1.00
13	1.00	1.00	1.00	1.00	1.00	1.00	1.00
14	1.00	1.00	1.00	1.00	1.00	1.00	1.00
15	1.00	1.00	1.00	1.00	1.00	1.00	1.00
16	1.00	1.00	1.00	1.00	1.00	1.00	1.00
17	1.00	1.00	1.00	1.00	1.00	1.00	1.00
18	1.00	1.00	1.00	1.00	1.00	1.00	1.00
19	1.00	1.00	1.00	1.00	1.00	1.00	1.00
20	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Total 20.00

67/A/2

PERMANENT BARLEY EXPERIMENT HOOSFIELD, FALLOW 1967 (the 116th year)

(HB)

For history, treatments, etc., see 'Details' 1962 and 'Results' 64/A/2.

No mineral fertilisers or nitrogen were applied. Castor meal was applied at 129 lb N (3 times the normal rate) to the x sub-plots only of series C in order to balance the heavier dressings applied to the y sub-plots in 1964, 1965 and 1966. Dung was applied as usual.

Liming: The quinquennial chalk dressing is to be discontinued. Chalk was therefore applied this year, as follows:-

Plot No.	Ground chalk
1Ax, 2Ax, 3Ax, 4Ax, 5Ax	651 lb
1Ay, 2Ay, 3Ay, 4Ay, 5Ay	1952 lb
1C, 2C, 3C, 4C	813 lb

Corrective liming was also carried out, as follows:-

Plot No.	Ground chalk
1N, 1C, 4C, 4A	23 cwt
7-1 , 6-1, 6-2, 5A, 2C	46 cwt

Cultivations, etc.: Sprayed with aminotriazole at 4 lb and ammonium thiocyanate at 3.7 lb in 40 gals: Sept 16, 1966. Dung applied, all plots ploughed: Oct 19. Rotary cultivated twice: Mar 31, 1967 and May 19 - June 2. Castor meal applied: June 9. Ground chalk applied: June 23. Deep-tine cultivated: July 3. Rotary cultivated: July 26.

*amendment
1969*

1914

MEMORANDUM FOR THE RECORD

(S)

For the purpose of the experiment, the following treatments were applied to the plots:

No chemical fertilizers or manures were applied. The only fertilizer applied was the phosphate fertilizer (P) in the form of superphosphate. The amount of phosphate fertilizer applied to the plots was 100 lbs per acre.

The experimental design was a randomized block design. The plots were arranged in a 4 x 4 grid.

Block 1	Plot 1	Plot 2	Plot 3	Plot 4
Block 2	Plot 5	Plot 6	Plot 7	Plot 8
Block 3	Plot 9	Plot 10	Plot 11	Plot 12
Block 4	Plot 13	Plot 14	Plot 15	Plot 16

Concomitant with the above treatments, the following irrigation treatments were applied:

Irrigation 1	Irrigation 2	Irrigation 3	Irrigation 4
Irrigation 5	Irrigation 6	Irrigation 7	Irrigation 8
Irrigation 9	Irrigation 10	Irrigation 11	Irrigation 12
Irrigation 13	Irrigation 14	Irrigation 15	Irrigation 16

Observations were made at intervals of 15 days. The following observations were made: (1) Plant height, (2) Number of leaves per plant, (3) Number of flowers per plant, (4) Number of fruits per plant, (5) Weight of fruits per plant, (6) Yield per acre.

67/A/3

WHEAT AFTER FALLOW - HOOSFIELD 1967

(HWF)

For history, treatments, etc. see 'Details' 1962.

The comparison of two varieties is now discontinued, Cappelle only being sown.

Area of each plot: 0.1238. Area harvested: 0.0368.

Cultivations, etc.:

Cropped plots: Ploughed: Sept 13, 1966. Seed drilled at 180 lb: Oct 28. Sprayed with ioxynil/mecoprop (Actril C at 6 pints in 20 gals): May 9, 1967. Combine harvested: Aug 30.

Fallow plots: Ploughed 3 times: Sept 13, 1966, Apr 3 and July 5, 1967.

SUMMARY OF RESULTS

Plot	B1	B2	B3
No of years of fallow	1	1	3
	GRAIN		
	15.9	18.1	22.2
	STRAW		
	11.9	12.1	13.4

Mean D.M. %: Grain: 85.2
Straw: 88.6

1913

WATER RESOURCES - WILSON AREA

(1913)

The quantity of water available in the Wilson area is estimated to be about 100,000 acre feet per year. This is based on the average annual precipitation of 10.5 inches in the area. The water is available in the form of surface water and groundwater. The surface water is contained in the Wilson Reservoir and the groundwater is contained in the Wilson Aquifer. The Wilson Reservoir is a natural reservoir and the Wilson Aquifer is a natural aquifer. The water in the Wilson Reservoir is used for irrigation and the water in the Wilson Aquifer is used for domestic and industrial purposes.

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WATER RESOURCES - WILSON AREA

Year	Surface Water	Groundwater	Total
1913	10.5	10.5	21.0
1914	10.5	10.5	21.0
1915	10.5	10.5	21.0
1916	10.5	10.5	21.0
1917	10.5	10.5	21.0
1918	10.5	10.5	21.0
1919	10.5	10.5	21.0
1920	10.5	10.5	21.0
1921	10.5	10.5	21.0
1922	10.5	10.5	21.0
1923	10.5	10.5	21.0
1924	10.5	10.5	21.0
1925	10.5	10.5	21.0
1926	10.5	10.5	21.0
1927	10.5	10.5	21.0
1928	10.5	10.5	21.0
1929	10.5	10.5	21.0
1930	10.5	10.5	21.0

Source: U.S. Geological Survey, 1913

67/A/4.1

GRASS - AGDELL 1967

(AG)

For history, treatments etc. see 'Details' 1962 and 'Results' 63/A/4, 64/A/4, 65/A/4 and 66/A/4.

Area of each microplot: Plots 1-4 - 0.0180. Plots 5-6 - 0.0162.
Area harvested: Plots 1-4 - 0.0023. Plots 5-6 - 0.0020.

P (as triple superphosphate) was applied in January 1967 to balance withdrawals by grass in 1964 and 1966 to all sub-plots except P0 which continued to receive no P.

K (as muriate of potash) was applied to balance withdrawals by grass in 1964, 1965 and 1966 to all sub-plots except K0 which continued to receive no K. Some of this K was applied in 1966 (see 'Results' 66/A/4). Because the amounts still required were large the 1967 dressings were split to lessen the risk of damaging the grass. Not more than 2.97 cwt K₂O (3.32 cwt on sub-plots 5 and 6) - 10 lb muriate of potash per sub-plot - was applied in January and the balance was applied after the first cut but before ploughing.

Rates in cwt P₂O₅

Plot no.	Sub-plots testing P				Sub-plots testing K			
	P0	P1	P2	P4	K0	K1	K2	K4
1	0	0.75	0.85	0.93	0.80	1.00	0.88	0.91
2	0	0.68	0.75	0.83	0.59	0.86	0.83	0.88
3	0	0.71	0.70	0.89	0.70	0.76	0.84	0.73
4	0	0.57	0.60	0.80	0.73	0.87	0.83	0.86
5	0	0.52	0.60	0.72	0.50	0.72	0.76	0.80
6	0	0.50	0.69	0.76	0.51	0.80	0.70	0.80

Rates in cwt K₂O

Plot no.	Sub-plots testing P				Sub-plots testing K			
	P0	P1	P2	P4	K0	K1	K2	K4
1	5.78	6.66	7.07	6.82	0	4.45	4.62	6.00
2	3.80	5.57	5.80	5.67	0	3.68	4.58	6.16
3	3.57	6.02	5.54	6.24	0	4.32	4.78	5.38
4	2.90	4.46	4.43	5.19	0	4.00	4.64	5.72
5	1.54	4.50	4.83	5.24	0	3.29	3.95	5.40
6	0.25	4.62	5.10	5.02	0	3.72	3.59	5.05

67/A/4.2

Basal dressing: 'Nitro-Chalk' applied at 0.8 cwt N in March.

Cultivations, etc.:-

Grass: P and first dressing of K applied: 18 Jan, 1967. Cut once for silage: 2 June, 1968. Second dressing of K applied: 7 June. Plots ploughed: 14 June. Rotary cultivated: 5 July, 21 July, 8 Aug, 24 Aug. Resown with Timothy: 7 Sept.
Fallow: Ploughed: 31 Oct, 1966.

67/A/4.3

SUMMARY OF RESULTS

DRY MATTER

Plot

P	K	5	6	3	4	1	2	Mean
1ST AND ONLY CUT								
0	4	13.7	7.9	30.2	17.0	37.0	27.1	22.1
1	4	50.4	47.8	48.6	47.0	45.2	46.4	47.6
2	4	55.8	45.4	42.4	39.3	39.0	53.6	45.9
4	4	46.9	44.9	48.8	48.2	42.9	40.4	45.3
4	0	41.7	23.9	24.1	37.8	26.2	25.5	29.9
4	1	57.6	44.3	38.4	47.3	41.7	48.1	46.2
4	2	53.0	43.4	36.8	44.7	45.4	49.0	45.4
4	4	53.6	46.2	38.8	37.3	46.6	48.9	45.2
Mean		46.6	38.0	38.5	39.8	40.5	42.4	41.0

Mean D.M. %: 17.9

SUMMARY OF RESULTS

PERCENTAGE

1917

Year	1	2	3	4	5	6	7	8
1917	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
1918	95.00	95.00	95.00	95.00	95.00	95.00	95.00	95.00
1919	90.00	90.00	90.00	90.00	90.00	90.00	90.00	90.00
1920	85.00	85.00	85.00	85.00	85.00	85.00	85.00	85.00
1921	80.00	80.00	80.00	80.00	80.00	80.00	80.00	80.00
1922	75.00	75.00	75.00	75.00	75.00	75.00	75.00	75.00
1923	70.00	70.00	70.00	70.00	70.00	70.00	70.00	70.00
1924	65.00	65.00	65.00	65.00	65.00	65.00	65.00	65.00
1925	60.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00
1926	55.00	55.00	55.00	55.00	55.00	55.00	55.00	55.00
1927	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00
1928	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00
1929	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00
1930	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
1931	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00
1932	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00
1933	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
1934	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00
1935	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
1936	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00
1937	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1938	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1939	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1940	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Mean Date: 1917

67/A/5.1

BARNFIELD 1967

(BN)

For history, treatments, etc., see 'Details' 1962 and 'Results' 62/A/5.

Spring beans were grown over the whole experiment. The manures were applied as usual to strips, but castor bean meal, sulphate of ammonia and nitrate of soda were not applied.

Cultivations, etc.: Dung and mineral fertilisers applied:
Jan 4, 1967. Ploughed: Feb 8 - 16. Seed drilled at 200 lb: Mar 23. Sprayed with simazine at 1 lb in 32 gals: Mar 23. Sprayed with demeton-s-methyl (Metasystox at 12 fluid oz in 32 gals): June 13. Sides of plots sprayed with demeton-s-methyl (Metasystox at 12 fluid oz in 32 gals): July 7. Combine harvested: Sept 8. Variety: Maris Bead.

NOTE: The crop on the strips without dung was stunted and some leaves were blackened, the crop on the dunged strips grew normally. Samples taken in June showed there were no differences in depth of drilling between the strips. It is thought that there was an interaction between simazine and soil organic matter.

67/A/5.2

SUMMARY OF RESULTS

GRAIN

Strip

	1	2	4	5	6	7	8	Mean
Series								
O	34.2	36.6	11.9	10.0	8.9	10.8	9.7	17.5
N	35.1	36.9	12.7	10.9	9.9	8.9	6.7	17.3
A	32.5	38.2	7.9	8.5	8.3	12.2	2.3	15.7
AC	35.2	39.4	17.3	11.0	14.0	14.0	6.5	19.6
C	32.8	39.6	18.0	11.5	17.6	17.9	6.5	20.5
Mean	34.0	38.1	13.6	10.4	11.7	12.8	6.3	18.1

Plot 9: 11.9

General mean: 18.1

Mean D.M. %: 78.4

67/A/6.1

HAY - THE PARK GRASS PLOTS 1967

(PG)

For history, treatments etc. see 'Details' 1962 and 'Results' 65/A/6.

Ground chalk was applied to sub-plots as follows (tons CaCO₃):-

Plot	Sub-plot	
	b	c
1	-	1.25
4-2	-	2.25
9	-	1.75
10	-	2.00
11-1	2.5	2.00
11-2	1.5	2.00
18-1	-	2.00

Cultivations, etc.: Mineral fertilisers and fish meal applied: Jan 12, 1967. Ground chalk applied: Jan 24. Nitrogenous fertilisers applied: 1st dressing - Apr 5, 2nd dressing - Apr 18. Cut twice: June 12, Oct 18.

SUMMARY OF RESULTS

DRY MATTER

Plot No	1st cut				2nd cut				Total of 2 cuts				Mean
	a	b	c	d	a	b	c	d	a	b	c	d	
1	15.0	7.2	11.2	8.2	13.3	10.9	2.4	3.2	28.3	18.1	13.6	11.4	17.9
2	12.0	13.9	9.3	7.4	14.3	14.3	14.2	14.5	26.3	28.2	23.6	21.9	25.0
3	13.2	15.2	8.7	10.4	13.8	15.1	14.7	15.5	27.0	30.3	23.3	25.9	25.6
4-1	15.8	14.6	19.0	19.3	14.4	13.8	18.7	19.1	30.2	28.3	37.7	38.4	33.6
4-2	35.0	35.4	33.3	26.0	9.8	8.7	5.4	11.8	44.8	44.1	38.7	37.8	41.4
7	43.5	38.4	25.6	26.0	22.8	21.8	16.7	15.8	66.2	60.1	42.3	41.7	52.6
8	19.6	21.3	24.6	21.5	17.8	15.8	19.1	17.8	37.4	37.1	43.7	39.3	39.4
9	57.0	50.6	39.1	37.7	22.4	20.3	8.8	10.3	79.4	70.9	47.9	48.0	61.6
10	37.9	36.3	27.7	27.2	10.5	8.5	3.5	7.5	48.4	44.8	31.2	34.7	39.8
11-1	53.7	55.4	56.0	44.6	20.3	14.3	8.7	20.5	74.0	69.7	64.8	65.1	68.4
11-2	54.8	55.9	59.5	44.0	25.3	29.3	11.0	17.5	80.2	85.2	70.5	61.5	74.3
12	12.2		11.8		19.9		17.5		32.0		29.4		30.7
13	35.7	37.5	43.6	41.3	35.5	30.5	27.5	23.6	71.2	68.0	71.0	64.9	68.8
14	44.5	40.8	39.0	38.5	19.7	22.8	23.6	22.3	64.3	63.5	62.6	60.8	62.8
15	36.1		20.2		26.7		15.8		62.7		36.0		49.4
16	37.9	43.0	36.9	32.3	22.9	24.6	21.5	21.6	60.8	67.7	58.4	53.9	60.2
17	15.8	21.4	19.8	15.6	14.5	11.4	20.1	16.9	30.3	32.8	39.9	32.5	33.9
18-1			16.8	16.7			7.7	5.7			24.5	22.4	23.4
18-2													37.2
18-3	23.5	19.1			11.8	11.1			35.3	30.2			32.7
19-1													43.4
19-2													48.1
19-3													46.9
20-1													67.8
20-2													62.9
20-3													58.0

67/A/6.2

Total of 2 cuts: 25.4

2nd cut: 25.7

Mean D.M. %: 1st cut: 25.0

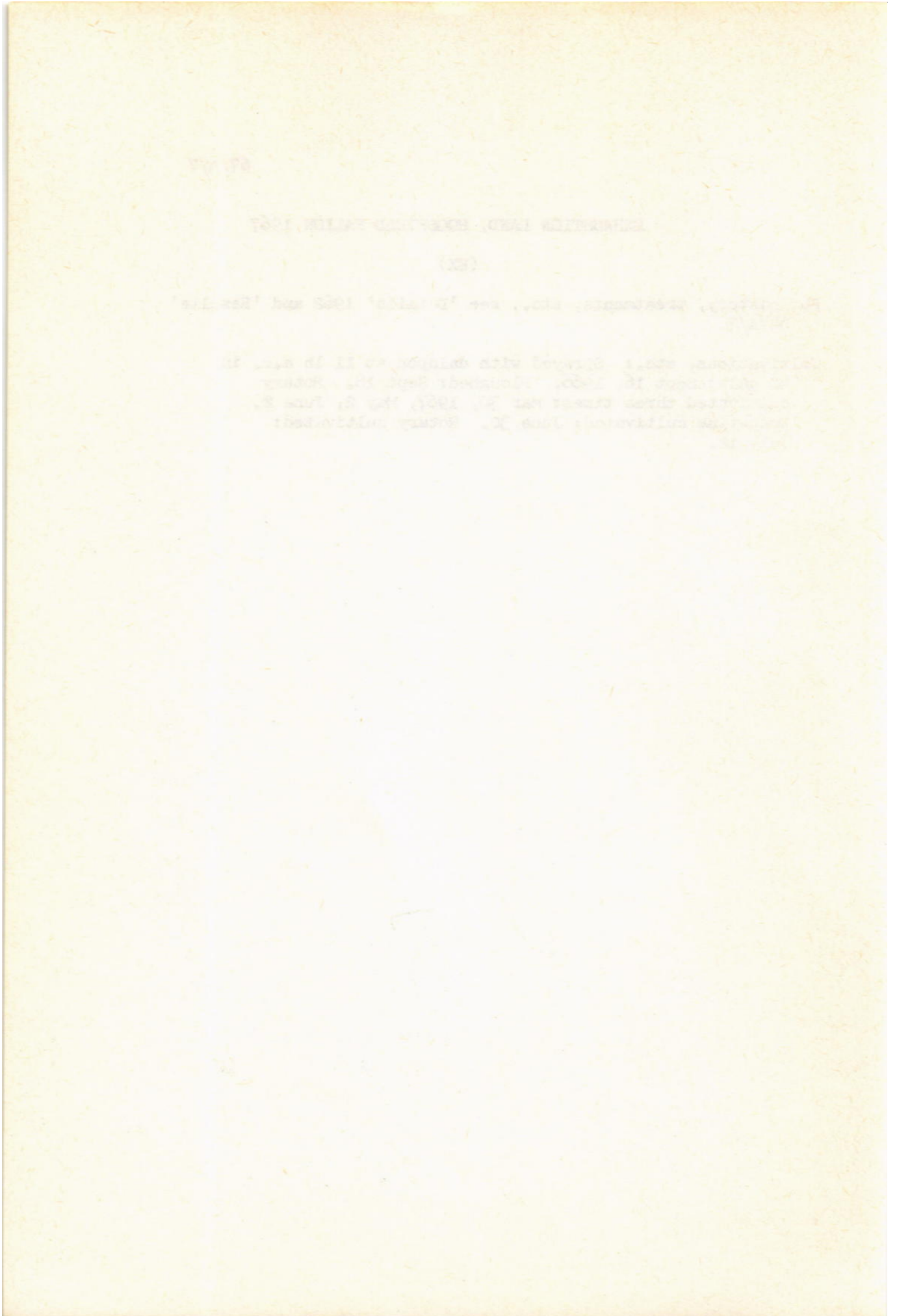
67/A/7

EXHAUSTION LAND, HOSFIELD FALLOW 1967

(EX)

For history, treatments, etc., see 'Details' 1962 and 'Results' 64/A/7.

Cultivations, etc.: Sprayed with dalapon at 11 lb a.e. in 40 gals: Sept 16, 1966. Ploughed: Sept 18. Rotary cultivated three times: Mar 30, 1967, May 2, June 2. Deep-tine cultivated: June 30. Rotary cultivated: July 12.



67/A/8.1

CLOVER - ROTHAMSTED GARDEN

(EGC)

Revised 1967, the 114th year

For history etc., see 'Details' 1962.

Basal applications: 1 ton ground chalk in 2 equal dressings, 1.2 cwt K₂O as muriate of potash.

Corrective potash: 4.2 cwt K₂O as muriate of potash applied in 2 dressings to the half plot which has not previously received K.

Test of nitrogen: The plot was divided at right angles to the earlier O v K split for a test of 0 (NO) v 1.0 (N1) cwt N as 'Nitro-Chalk' in the seedbed and after each cut except the last.

Variety: S123.

Cultivations, etc.: Ground chalk applied at 10 cwt, 5/7 of corrective potash applied, plots dug by hand, ground chalk applied at 10 cwt, 2/7 of corrective potash applied: Mar 7, 1967. Seed sown at 35 lb, basal potash and 'Nitro-Chalk' applied: Apr 4. Irrigated 0.5 ins by hand: June 14. Cut three times: July 20, Aug 24, Oct 24. 'Nitro-Chalk' applied after first two cuts.

67/A/8.2

SUMMARY OF RESULTS

DRY MATTER

NO	N1	Mean
	1ST CUT	
11.8	12.5	12.2
	2ND CUT	
16.5	19.5	18.0
	3RD CUT	
9.4	10.2	9.8
	TOTAL OF 3 CUTS	
37.7	42.2	40.0
Mean D.M. %:	1st cut: 22.7	
	2nd cut: 13.7	
	3rd cut: 17.9	
	Total of 3 cuts: 18.1	

67/A/9.1

SAXMUNDHAM

ROTATION I 1967

(SA)

For history, treatments, rotations, etc., see Rothamsted Report for 1964, pp. 228 - 232 and 'Results' 66/A/10. For previous years' results see 'Results' 64/A/10, 65/A/10, 66/A/10.

The plots receiving FYM (excluding beans) received also 'Nitro-Chalk' at 0.5 cwt N (N1).

As large losses of nitrate were measured in the drainage water in early May, a test of extra N was made on the discard areas of the barley plots. There was a marked response, and the barley was therefore top-dressed on June 15 with 'Nitro-Chalk' at 0.25 and 0.5 cwt N to the N1 and N2 plots respectively. Sugar beet plots received similar extra dressings on July 18.

Cultivations, etc.:

- Sugar beet: FYM applied: Sept 7, 1966. Ploughed: Sept 8.
P,K, bonemeal and 'Nitro-Chalk' applied: Mar 8, 1967.
Seed drilled: Mar 30, 1967. Singled: May 15 - 30. Sprayed with demeton-s-methyl: June 12 and July 7. Additional 'Nitro-Chalk' applied: July 18. Lifted: Sept 28.
Variety: Klein E.
- Barley: FYM applied: Oct 27, 1966. Ploughed: Oct - Dec, P,K and bonemeal applied: Mar 8, 1967. 'Nitro-Chalk' applied, seed drilled: Mar 22. Sprayed with mecoprop/2,4-D (Methoxone Extra): May 26. Additional 'Nitro-Chalk' applied: June 15. Combine harvested: Aug 17. Variety: Proctor.
- Spring beans: FYM applied: Nov 4, 1966. Ploughed: Nov - Dec. P,K and bonemeal applied: Oct 13. Seed drilled at 260 lb: Mar 13, 1967. Sprayed with simazine at 1 lb in 32 gals: Mar 25. Sprayed with demeton-s-methyl at 3 oz in 37 gals: June 12. Combine harvested: Aug 24. Variety: Spring Tick.
- Winter wheat: FYM applied: Sept 7. Ploughed: Sept 8. P,K and bonemeal applied: Oct 13. Seed drilled: Oct 14. 'Nitro-Chalk' applied: Mar 15, 1967. Sprayed with mecoprop/2,4-D (Methoxone Extra at 7 pints in 20 gals): Apr 27. Combine harvested: Aug 17. Variety: Cappelle.

67/A/9.2

SUMMARY OF RESULTS

NEW TREATMENTS

Treatment 1899 - 1965	Treatment from 1966	Roots	SUGAR BEET Sugar % Total sugar	Tops	BARLEY Grain Straw	SPRING BEANS Grain	WINTER WHEAT Grain Straw			
D	DN1	19.18	17.4	66.6	5.96	24.0	14.4	23.2	45.3	47.2
B	B	5.24	16.9	17.7	2.13	11.8	6.8	17.5	14.0	13.7
N	N2P2	15.78	16.8	53.0	6.12	25.0	14.3	18.8	34.3	33.6
P	N1P1	10.80	17.0	36.8	4.03	16.5	6.6	18.6	27.7	27.1
K	N1P2K	11.95	18.4	43.9	3.73	16.2	6.0	17.0	25.9	21.7
-	N1P2	10.74	17.3	37.1	3.86	15.0	6.7	18.8	21.0	20.6
PK	N1P1K	11.75	17.5	41.2	3.93	20.8	11.0	22.8	29.2	20.7
NK	N2P2K	17.29	17.3	59.9	6.22	26.4	14.6	22.9	38.8	32.9
NP	N2P1	17.74	16.7	59.3	7.60	24.8	14.2	16.3	36.8	36.8
NPK	N2P1K	16.27	17.6	57.2	6.51	24.9	12.5	21.7	35.3	33.3
Mean		13.67	17.3	47.3	5.01	20.5	10.7	19.7	30.8	28.8
Mean D.M. %:						78.0	76.5	80.3	80.1	80.0

67/A/9.3

SUMMARY OF RESULTS

OLD TREATMENTS

Plot No	Treatment 1899-1967	SUGAR BEET		BARLEY		SPRING BEANS		WINTER WHEAT		
		Roots	Sugar %	Total sugar	Tops	Grain	Straw	Grain	Straw	
1	D	12.36	17.3	42.7	3.60	16.6	14.1	17.2	35.1	54.3
2	B	5.76	17.7	20.4	2.64	14.2	12.6	21.0	15.9	23.8
3	N	9.12	18.5	33.7	2.52	12.7	11.5	11.5	19.5	34.8
4	P	5.76	17.1	19.7	2.40	11.7	11.0	16.4	15.8	27.0
5	K	4.20	18.3	15.4	1.92	7.7	7.6	8.2	12.9	24.3
6	-	4.68	17.5	16.4	2.04	6.3	6.6	8.0	9.1	19.1
7	PK	6.96	18.1	25.3	2.76	8.1	7.5	15.6	15.3	26.9
8	NK	9.60	18.5	35.4	4.32	12.6	10.9	12.0	22.2	39.1
9	NP	9.36	18.1	33.9	3.36	15.8	14.3	19.2	29.1	44.7
10	NPK	8.52	18.4	31.4	4.32	17.5	15.3	19.3	32.4	54.9
Mean		7.63	17.9	27.4	2.99	12.3	11.2	14.8	20.7	34.9

Mean D.M. %:

69.0 57.9 78.4 77.5 65.9

Year	1900	1910	1920	1930	1940	1950	1960	1970	1980	1990	2000
1900	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1910	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1920	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1930	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1940	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1950	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1960	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1970	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1980	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
1990	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

UNITED STATES
DEPARTMENT OF AGRICULTURE
BUREAU OF PLANT INDUSTRY

67/A/10.1

SAXMUNDHAM

ROTATION II 1967

(SB)

For history, treatments, rotations, etc. see Rothamsted Report for 1964, pp. 228 - 232 and 'Results' 66/A/11. For previous years' results see 'Results' 64/A/11, 65/A/11, 66/A/11.

Four strips, alternately of sugar beet and white turnips, were cross-drilled on each of the two blocks of the experiment. The plots were manured as in 1966.

Basal manuring: 1.2 cwt N, 2.0 cwt K₂O as 'Nitro-Chalk' and muriate of potash.

Area of each sub-plot: 0.0136. Area harvested: Sugar beet and turnips - 0.0045.

Cultivations, etc.: FYM applied: Sept 27, 1966. First half dressings of triple superphosphate applied: Sept 21. Ploughed: Sept 29 - Oct 27. Second half dressing of triple superphosphate and basal NK applied: Mar 8, 1967. Seed drilled (both crops): Mar 30. Sugar beet: Dusted against flea-beetle: May 13. Singled: May 15 - 30. Sprayed with demeton-s-methyl: June 12 and July 7. Lifted: Sept 28. Variety: Klein E. Turnips: Singled: May 1 - 10. Harvested: July 11. Variety: Green.

67/A/10.2

SUMMARY OF RESULTS

Plot	Treatment 1966 and 67	Roots (washed)	Sugar beet		Tops	Turnips Roots
			Sugar %	Total sugar		
1	PO	8.30	15.7	26.2	5.32	2.22
2	PO	13.50	17.6	47.5	4.73	5.00
3	PO	16.88	17.6	59.4	4.95	6.84
4	D	19.55	17.2	67.2	6.48	7.71
5	DP1	19.51	17.3	67.3	6.56	8.13
6	P1	18.35	17.3	63.4	6.51	7.92
7	P2	18.61	17.3	64.4	5.83	7.88
8	PO	17.44	17.3	60.1	5.90	7.25
Mean		16.52	17.2	56.9	5.79	6.62