ROTHAMSTED RESEARCH

Numerical Results of the Field Experiments 1968

Full Table of Content

Classical Experiments

Rothamsted Research

Rothamsted Research (1970) *Classical Experiments ;* Numerical Results Of The Field Experiments 1968, pp 11 - 53 **- DOI: https://doi.org/10.23637/ERADOC-1-58**

68/A/1.1

WHEAT AND THREE-COURSE ROTATION BROADBALK 1968

(BK)

The 125th year, 1st year of revised scheme

For history, treatments etc. see 'Details' 1967, Station Report for 1966, pp. 229-231 and Station Report for 1968, Part II.

Plots and sections:
The five sections created in 1926 are now all subdivided and renumbered (for details see below). Headlands adequate for turning tractors etc. separate all the new sections.

In 1968 a new plot was made, north of plot 2A. This is called plot 1 and runs the length of old sections II, III, IV only.

Cropping:
The cropping for 1968 - 1971 is as follows:-

Old section	IA	IB	II		III		IV		VA	VB
Last fallow	1951	1966	1967		1965		1964		1963	1958
New section	0	1	2	3	4	5	6	7	8	9
Crop in:										
1968	W	W	Be	W	W	W	F	P	W	W
1969	W	W	W	W	P	F	W	Be	W	W
1970	W	W	P	F	Be	W	W	W	W	W
1971	W	W	Be	W	W	W	F	P	W	W

(W = winter wheat, Be = spring beans, F = fallow, P = potatoes)

Sections 0, 1, 8, 9 will carry continuous wheat except when perennial weeds make a fallow necessary, but all four will not be fallowed in the same year. Sections 2, 4, 7 will continue in the 3-course rotation:

potatoes, spring beans, wheat.

Sections 3, 5, 6 will be cropped in a 3-year cycle:

fallow, wheat, wheat.

All sections carrying wheat will be sprayed as necessary to control weeds, except section 8 which (as hitherto) will receive no weedkiller sprays.

Section 00, soil fumigation to continuous winter wheat: In autumn 1967 a 10 ft length at the West end of every plot of section 0 was fumigated with methyl bromide at 870 lb. Resulting yields were compared with those from an adjoining 10 ft length which received normal treatments only. Both series of plots were harvested by small combine harvester.

https://doi.org/10.23637/ERADOC-1-58

In 1968 simazine was applied to beans, no weedkiller was applied to potatoes.

Varieties in 1968:

Wheat: Cappelle Desprez
Beans: Maris Bead (inoculated seed)
Potatoes: Majestic.

Manuring:

(a) Plot 1. The new plot 1, which has received no organic or mineral manures for many years, now receives farmyard manure plus N2PK (see below for details) each year, applied to all crops including fallow (no N to fallow).

(b) Nitrogen fertilisers. Sulphate of ammonia and nitrate of soda are discontinued, 'Nitro-Chalk' 21 being used instead. It is all applied at one time in spring.

For wheat it is applied as a top-dressing, for potatoes before rotary cultivation, for beans to the seedbed. No 'Nitro-Chalk' to fallow.

Rates of N are unchanged except on plots 2A, 9, 15 (for details see below).

The rates and symbols are (lb N), 43 (N1), 86 (N2), 129 (N3) and 172 (N4).

(c) Organic manures. Farmyard manure (FYM) and castor bean meal are applied as hitherto, except that organics are now applied to the fallow section.

Symbol:

D: 14 tons FYM.
R: Castor meal supplying 86 lb N.

(d) Mineral manures. Except on plots 17 and 18 (which now receive PKNaMg at half the standard rates each year) and plot 14 which now receives K in addition to PMg, rates and materials are unchanged:-

Symbol:

P: Superphosphate supplying 30 lb P.
K: Sulphate of potash supplying 80 lb K.
Na: Sulphate of soda supplying 14 lb Na (except plot 12, 51 lb Na).
Mg: Sulphate of magnesia supplying 10 lb Mg (except plot 14, 28 lb Mg).

All these are applied in autumn before ploughing. They are applied for all crops and fallow.

https://doi.org/10.23637/ERADOC-1-58

Plot	Treatment till 1967	Treatment from 1968
1	-	DN2PK
2A	D	DN2
2B	D	D
3	None	None
5	PKNaMg	PKNaMg
6	N1PKNaMg	N1PKNaMg
7	N2PKNaMg	N2PKNaMg
8	N3PKNaMg	N3PKNaMg
9	N*1PKNaMg	N4PKNaMg
10	N2	N2
11	N2P	N2P
12	N2PNa	N2PNa
13	N2PK	N2PK
14	N2PMg	N2PKMg
15	N2**PKNaMg	N3PKNaMg
16	N*2PKNaMg	N2PKNaMg
17	N2	N2+1/2(PKNaMg)
18	PKNaMg alternating	N2+1/2(PKNaMg)
19	R	R
20	N2KNaMg	N2KNaMg

** Formerly N in autumn.

NOTE: Plot 20 does not run the full length and is not included in the rotation scheme.

Liming:
Ground chalk was applied under the old scheme in autumn 1967, the following additional applications were made: (cwt chalk)

Plot / Section	7	8	11	13	14	15
1	-	23	-	-	-	-
6,7	-	69	23	23	-	-
8	23	23	-	23	23	23
9	23	23	-	-	-	-

(remainder : none).

New scheme: Ground chalk will be applied in every third year, starting autumn 1970.

Drilling and planting:
Wheat: Because of the use of a new 15 row drill the plot widths for wheat have been reduced from 36 rows (21 ft) to 30 rows (17 ft 6 ins). Plot 1 has 30 rows. Plots 2A and 2B, originally 20 rows (11 ft 8 ins) each, now have 22 rows (12 ft 10 ins) each.

https://doi.org/10.23637/ERADOC-1-58

Beans: 12 rows drilled (plot width 21 ft). Plot 1 has 12 rows. Plots 2A and 2B each have 7 rows (12 ft 3 ins).
Potatoes: 8 rows are planted (plot width 18 ft 8 ins). Plot 1 has 8 rows. Plots 2A and 2B each have 5 rows (11 ft 8 ins).
The manures (with the exception of 'Nitro-Chalk') continue to be applied to the full 21 ft width for all crops. This applies also to plot 1. Dung is applied to plots 2A and 2B as though they were one plot, width 26 ft 3 ins. 'Nitro-Chalk' is applied to the drilled area for wheat, and to the full 21 ft width (13 ft on plot 2A) for beans and potatoes.

		Area of each plot:		Area harvested:
		2A and 2B	Remainder	All plots
Wheat: Section:	0	0.0147	0.0201	0.0107
	1	0.0271	0.0370	0.0197
	3, 4 and 5	0.0224	0.0305	0.0163
	8 and 9	0.0236	0.0321	0.0171
Potatoes: Section:	7	0.0204	0.0326	0.0163
Beans: Section:	2	0.0214	0.0367	0.0153

Cultivations, etc.:
ALL SECTIONS: Ground chalk applied (including extra chalking): 11 Sept, 1967. FYM applied: 18 Sept. Plots 1 - 3 ploughed, all autumn fertiliser applied: 19 Sept. Remaining plots ploughed: 20 Sept.
CROPPED SECTIONS:
Winter wheat: Seed drilled at 180 lb: 7 Dec, 1967. 'Nitro-Chalk' applied (plot 20 omitted in error): 10 Apr, 1968. All sections except 8 and 9 sprayed with ioxynil at 9 oz and mecoprop at 27 oz in 20 gals: 4 May. Section 9 sprayed with ioxynil at 9 oz and mecoprop at 27 oz in 20 gals, section 5 resprayed with ioxynil at 7.5 oz and mecoprop at 22.5 oz in 20 gals and sections 0, 1, 3 and 4 resprayed with ioxynil at 6 oz and mecoprop at 18 oz in 20 gals: 6 May. The second spray was applied because of rain during spraying on 4th May. 'Nitro-Chalk' applied to plot 20: 17 June. Combine harvested: 26 Aug.
Potatoes: 'Nitro-Chalk' applied: 26 Mar, 1968. All plots rotary cultivated - first time: 28 Apr, second time: 29 Apr. Potatoes machine planted: 29 Apr. Grubbed: 20 May. Rotary ridged: 28 May. Grubbed and then rotary ridged: 19 June. Sprayed with mancozeb at 1.2 lb in 37 gals: 4 July. Sprayed with mancozeb at 1.2 lb and demeton-s-methyl at 3.5 oz in 37 gals: 19 July. Sprayed with mancozeb

https://doi.org/10.23637/ERADOC-1-58

at 1.2 lb in 37 gals: 5 Aug. Sprayed with undiluted BOV at 20 gals: 31 Aug. Haulm destroyed mechanically: 13 Sept. Lifted: 19 Sept.

Spring beans: Seed drilled at 200 lb: 4 Mar, 1968. Sprayed with simazine at 1 lb in 33 gals: 5 Mar. 'Nitro-Chalk' applied: 26 Mar. 1.04 lb phorate applied in granules: 22 June. Combine harvested: 6 Sept.

FALLOW SECTION: Ploughed second time: 28 May, 1968, third time: 5 Aug.

Area of each sub plot: Area harvested: 0.0018
(Plots 2A and 2B): 0.0031
(Remainder): 0.0046

Cultivations to section OO: As section O except:- Rotary cultivated: 21 Sept, 1967. Methyl bromide applied: 27 Sept. Combine harvested: 25 Aug, 1968.

BROADBALK WILDERNESS: Cultivations, etc.:-
Ungrazed meadow (north): Topped with rotary grass cutter: 23 Jan, 1968.
Grazed meadow (centre): Grazed by sheep: 2 - 10 May, 1968, 27 - 31 May, 10 - 17 June, 8 - 17 July, 16 - 23 Aug, 18 - 24 Sept, 10 - 16 Oct. Grass topped: 10 May, 18 June, 18 July, 24 Aug, 18 Oct.

https://doi.org/10.23637/ERADOC-1-58

68/A/1.6

SUMMARY OF RESULTS

WHEAT

GRAIN

Section	3	4	5	1	8	9	0	
Years after fallow	1	3	3	2	5*	10	17	Mean
Plot								
1	37.8	30.5	29.7					
2A	34.3	38.1	35.3	33.0	35.2	36.4	37.8	35.3
2B	38.8	29.0	30.1	25.2	32.8	34.9	31.3	32.2
3	15.0	10.2	10.4	8.3	17.0	11.6	11.5	12.3
5	22.9	12.8	13.8	8.5	17.5	13.9	14.4	15.2
6	28.6	22.8	21.3	15.9	31.7	24.9	21.0	23.9
7	31.3	29.2	29.6	24.3	27.3	31.1	29.5	28.8
8	22.8	31.5	28.8	27.9	30.4	31.7	29.4	28.5
9	27.2	33.2	31.9	30.4	33.1	30.6	30.1	30.6
10	8.3	18.7	17.6	16.1	21.2	16.2	9.4	14.8
11	6.1	19.6	15.4	21.3	13.8	14.9	16.8	14.7
12	4.4	20.0	19.1	23.5	12.6	13.0	22.4	15.8
13	13.7	27.1	26.2	26.4	16.1	27.7	26.1	22.7
14	15.2	27.9	24.0	26.7	24.9	30.1	25.4	24.4
15	20.7	30.3	31.4	28.1	31.4	32.3	25.3	28.2
16	21.3	25.8	24.5	23.7	29.6	30.4	20.2	24.9
17	27.4	29.9	20.3	22.2	37.9	32.7	27.1	29.6
18	25.9	25.9	23.1	23.2	39.8	32.4	23.5	28.0
19	22.7	20.0	19.0	15.3	24.6	15.9	18.3	19.3
20				8.1			9.6	8.8

Mean D.M. %: 83.6

* No herbicide

% weed seeds plus rubbish
- Plot 5, section 1: 8
- Plot 8, section 0: 1
- Plot 14, section 8: 3
- Plot 16, section 0: 1

68/A/1.7

WHEAT

STRAW

Section	3	4	5	1	8	9	0	
Years after fallow	1	3	3	2	5*	10	17	Mean
Plot								
1	52.3	22.0	33.9					
2A	50.8	50.2	42.8	48.0	60.9	39.0	42.1	47.3
2B	38.5	30.1	31.1	24.1	43.0	34.2	27.8	33.1
3	9.3	7.0	10.3	5.1	10.9	7.3	7.0	8.3
5	18.3	11.5	9.3	6.8	23.0	11.2	11.2	13.3
6	21.4	19.4	18.1	16.2	35.1	23.8	18.5	22.2
7	30.8	31.0	33.0	27.3	45.1	36.4	33.4	34.3
8	31.4	36.0	29.0	34.0	48.1	39.5	31.1	35.5
9	32.7	34.2	28.2	31.7	44.2	35.8	28.8	33.6
10	6.4	14.9	17.2	11.2	17.9	12.4	8.3	12.2
11	12.9	13.9	11.4	19.6	24.3	16.9	14.8	16.6
12	24.5	15.4	15.3	21.1	25.0	14.8	20.7	20.2
13	24.5	26.6	25.3	30.5	42.3	31.2	27.5	30.2
14	16.9	22.3	20.0	24.9	35.7	27.3	22.9	24.6
15	28.8	27.7	25.4	29.1	46.6	32.6	27.2	31.6
16	19.1	20.6	27.2	21.5	39.0	36.2	26.9	28.3
17	25.1	29.2	28.4	22.5	42.1	30.9	25.9	29.1
18	26.6	24.6	25.9	22.1	50.3	38.3	26.2	31.6
19	18.8	17.4	14.3	11.6	31.4	18.5	15.4	18.3
20				5.9			6.7	6.3

Mean D.M. %: 69.5

* No herbicide

68/A/1.8

WHEAT

GRAIN

SECTION 00. FUMIGATED STRIPS

Plots	O	MB	Mean
2A	17.7	17.9	17.8
2B	23.8	18.6	21.2
3	11.8	16.4	14.1
5	12.1	16.2	14.1
6	21.1	24.2	22.6
7	28.0	27.9	27.9
8	23.9	20.8	22.3
9	22.3	21.9	22.1
10	12.7	9.9	11.3
11	19.3	20.7	20.0
12	22.9	20.6	21.7
13	21.3	20.6	20.9
14	21.0	23.0	22.0
15	23.5	22.4	22.9
16	13.9	19.3	16.6
17	23.1	23.5	23.3
18	20.3	25.5	22.9
19	14.2	19.1	16.7
Mean	19.6	20.5	20.0

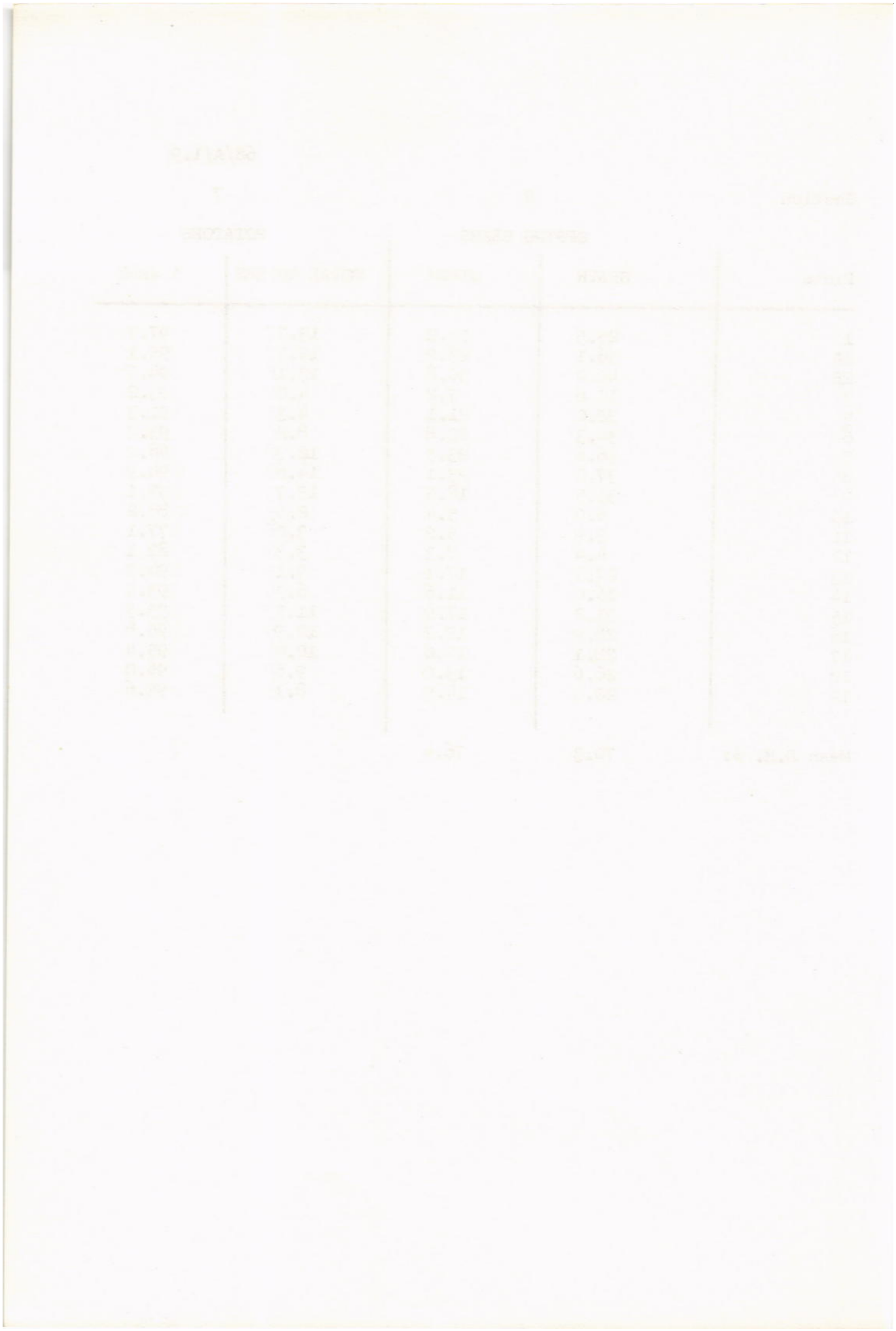
Mean D.M. %: 81.6

https://doi.org/10.23637/ERADOC-1-58

68/A/1.9

Section	2		7	
	SPRING BEANS		POTATOES	
Plots	GRAIN	STRAW	TOTAL TUBERS	% WARE
1	25.5	11.2	13.77	97.7
2A	36.1	23.2	15.73	95.1
2B	42.0	30.8	13.16	94.7
3	10.6	7.2	4.05	93.2
5	32.0	21.1	4.35	91.3
6	34.3	22.8	8.26	93.7
7	36.8	23.5	12.38	96.2
8	37.0	23.1	14.68	94.9
9	35.5	18.5	13.75	97.1
10	6.0	5.4	2.95	88.2
11	3.9	5.2	3.06	77.1
12	4.4	7.3	3.33	82.1
13	27.7	17.1	9.15	94.2
14	16.0	11.6	6.38	93.5
15	31.2	17.9	11.53	93.5
16	28.9	19.7	10.99	95.8
17	28.1	14.6	10.05	95.4
18	26.6	13.0	9.67	96.0
19	20.0	14.5	8.19	95.6
Mean D.M. %:	70.3	76.4		

https://doi.org/10.23637/ERADOC-1-58



HOOSFIELD: BARLEY AND THREE-COURSE ROTATION 1968

(HB)

The 117th year, 1st year of revised scheme

For history, treatments, etc., see 'Details 1967' and Station Report for 1966.

Cropping and treatments:
A three-course rotation (potatoes, spring beans, spring barley) is now followed on parts of the old series AA, AAS and C. The remainder of these series, the old series O and A and old plots 1N, 2N, 5-O, 5A, 6-1, 6-2, 7-1, 7-2, carry continuous barley.

The arrangement is indicated below:-

Old Series	O	A	AA		AAS		C				1N,2N 5-O,5-A	
(East): 1968	B	B	B	P	P	B	B	B	P	Be	B	(West)
1969	B	B	B	Be	Be	B	B	P	Be	B	B	
1970	B	B	B	B	B	B	B	Be	B	P	B	
1971	B	B	B	P	P	B	B	B	P	Be	B	

(B = Barley, Be = Beans, P = Potatoes)

Varieties in 1968:
Barley - Maris Badger, Beans - Maris Bead (seed inoculated with Rhizobium), Potatoes - Majestic.

The strip manures:

Strip 1 - None
2 - P
3 - KNaMg
4 - PKNaMg

continue to be applied at the same rates, but are now applied in autumn before ploughing. Farmyard manure (D) at 14 tons is applied to plot 7-2 as hitherto and silicate of soda is applied as hitherto (old series AAS). The rate is unchanged but it too is applied before ploughing. Castor meal is no longer applied. All plots (except 1N, 2N, 5-O, 5A) are split into 4 sub plots and (except on plot 7-2) a test is made of none (N0), 43(N1), 86(N2), 129 (N3) lb N as 'Nitro-Chalk 21' applied to the barley seed bed. Potatoes receive basal 'Nitro-Chalk' at 129 lb N before rotary cultivation in spring, beans receive no N. The levels of N to barley are cumulative and are randomized. Plot 7-2 in 1968 had a test on duplicate sub plots of N0 and N1**. Plots

https://doi.org/10.23637/ERADOC-1-58

1N (now numbered 581), 2N (571), 5A (551), receive N2, plot 5-0 (561) NO. Plots 5-0, and 5A receive PK, at rates as before but applied before ploughing in autumn.

* NOTE: In 1968 sub plots on the old plots 6-1, 6-2, 7-1 and 7-2 received nitrogen at rates 57 (N1) 115 (N2) and 172 (N3) lb N in error.

Symbols:

D - 14 tons farmyard manure
P - Superphosphate supplying 30 lb P
K - Sulphate of potash supplying 80 lb K
Na - Sulphate of soda supplying 14 lb Na
Mg - Sulphate of magnesia supplying 10 lb Mg
Si - 400 lb silicate of soda.

Standard applications 1968:

To Barley: (weedkiller) dicamba/mecoprop/MCPA ('Banlene Plus' at 4 pints in 33 gals).
To Beans: (weedkiller) simazine at 1 lb in 33 gals, (insecticide) phorate at 1.04 lb (in granules).
To Potatoes: (no weedkiller) (fungicide) mancozeb at 1.2 lb in 37 gals, on 3 occasions, (insecticide) demeton-s-methyl at 3.5 oz applied with fungicide on 2nd occasion, (haulm killer) undiluted BCV at 20 gals.

Liming:

Under the new scheme ground chalk will be applied every third year, starting Autumn 1970.

Area of each sub plot:-

		Area	Area harvested
Old series O and A		0.0317	0.0086
Old plots 6-1, 6-2, 7-1 and 7-2		0.0238	0.0064
Old series AA, AAS and C			
	Barley	0.0087	0.0024
	Potatoes	0.0087	0.0047
	Beans	0.0087	0.0044**
Old plots 1N, 2N, 5-0, 5A (whole plots)		0.0661	0.0101

Barley is harvested by small combine harvester on the old series AA, AAS and C, by large combine on the remainder.

** Plots harvested in pairs.

All crop-rows now run north-south, not east-west as previously.

https://doi.org/10.23637/ERADOC-1-58

Cultivations, etc.:-

P, K, Na, Mg applied : 5 Oct, 1967. Silicate of soda and FYM applied, all plots ploughed: 6 Oct.

Barley: Seed drilled at 140 lb: 4 Mar, 1968. 'Nitro-Chalk' applied: 25 Mar. Weedkiller applied: 14 May. Combine harvested: 22 Aug.

Potatoes: 'Nitro-Chalk' applied: 26 Mar, 1968. Plots rotary cultivated, potatoes machine planted: 1 Apr. Grubbed: 20 May. Rotary ridged: 28 May. Fungicide applied, the second time including insecticide: 3 July, 19 July, 5 Aug. BOV applied: 30 Aug. Haulm destroyed mechanically: 13 Sept. Lifted: 23 Sept.

Spring beans: Seed drilled at 200 lb: 4 Mar, 1968. Weedkiller applied: 5 Mar. Insecticide applied: 21 June. Combine harvested: 13 Sept.

https://doi.org/10.23637/ERADOC-1-58

68/A/2.4

SUMMARY OF RESULTS

BARLEY

N 1968

Treatment**		0	1	2	3	Mean
		GRAIN				
1852-1968	1852-1966					
-	-	12.5	12.0	13.3	14.7	13.1
-	N	10.5	11.9	9.9	12.5	11.2
P	-	18.9	26.7	32.3	33.6	27.9
P	N	21.0	28.1	30.2	27.3	26.6
K Na Mg	-	8.6	15.4	22.3	23.8	17.5
K Na Mg	N	12.1	12.4	12.8	11.8	12.3
PK Na Mg	-	13.1	28.3	38.6	38.1	29.5
PK Na Mg	N	16.1	31.3	37.3	34.2	29.7
D	-	19.4	37.7	-	-	28.6
-	(D)	10.5	28.6	39.1	36.9	28.8
-	(Ashes)	15.8	29.3	27.3	26.9	24.9
-	-	11.9	18.1	19.5	24.1	18.4
		STRAW				
-	-	0.8	10.4	13.9	17.0	10.5
-	N	4.1	9.0	6.4	10.1	7.4
P	-	10.7	19.0	25.6	24.0	19.8
P	N	12.9	21.2	23.2	23.5	20.2
K Na Mg	-	5.9	10.9	17.9	25.2	15.0
K Na Mg	N	10.7	11.8	16.4	16.2	13.8
PK Na Mg	-	10.9	27.9	34.0	38.3	27.8
PK Na Mg	N	8.5	25.1	34.7	27.8	24.0
D	-	28.4	40.3	-	-	34.3
-	(D)	7.9	21.7	36.6	31.2	24.4
-	(Ashes)	11.0	18.5	19.2	18.8	16.9
-	-	5.4	12.9	13.0	18.9	12.6

** For explanation of symbols see 'Details 1967'

https://doi.org/10.23637/ERADOC-1-58

68/A/2.5

BARLEY

N 1968

Treatment**		0	1	2	3	Mean
			GRAIN			
1852-1968	1852-1966					
-	N*	10.1	10.0	11.9	10.6	10.6
Si	N*	19.0	24.4	28.9	24.0	24.1
P	N*	23.7	32.8	33.3	30.0	29.9
P Si	N*	20.9	31.7	35.5	34.3	30.6
K Na Mg	N*	10.7	11.7	14.4	12.8	12.4
K Na Mg Si	N*	22.2	26.8	28.5	33.5	27.7
PK Na Mg	N*	12.7	28.8	33.0	36.6	27.8
PK Na Mg Si	N*	18.8	34.2	40.0	34.6	31.9
-	R(c)	21.9	38.4	33.1	36.1	32.4
-	R(r)	32.0	36.0	34.5	32.5	33.7
P	R(c)	21.3	32.8	35.9	33.3	30.8
P	R(r)	17.6	29.9	36.1	33.1	29.2
K Na Mg	R(c)	26.2	36.0	33.3	35.0	32.6
K Na Mg	R(r)	23.2	33.7	34.4	36.0	31.8
PK Na Mg	R(c)	28.2	34.3	37.4	35.0	33.7
PK Na Mg	R(r)	30.9	33.7	38.1	29.7	33.1
			STRAW			
-	N*	13.8	11.1	13.7	13.7	13.1
Si	N*	20.2	21.6	28.9	27.9	24.7
P	N*	23.1	29.6	35.7	30.3	29.7
P Si	N*	16.0	30.5	37.6	36.1	30.1
K Na Mg	N*	18.1	15.0	22.2	21.3	19.1
K Na Mg Si	N*	17.6	26.3	31.8	36.0	27.9
PK Na Mg	N*	10.2	27.1	34.7	43.0	28.7
PK Na Mg Si	N*	14.8	34.9	41.3	40.1	32.8
-	R(c)	13.8	34.7	28.8	34.4	27.9
-	R(r)	24.5	28.2	26.4	28.9	27.0
P	R(c)	16.3	25.9	32.5	29.6	26.1
P	R(r)	14.5	27.4	29.8	26.3	24.5
K Na Mg	R(c)	19.2	33.7	32.8	32.9	29.7
K Na Mg	R(r)	19.7	30.7	29.4	34.7	28.7
PK Na Mg	R(c)	24.3	30.4	38.0	36.4	32.3
PK Na Mg	R(r)	23.4	29.3	38.8	38.5	32.5

NOTE: (c) = continuous, (r) = rotation. (These treatments were identical in 1968.)

** For explanation of symbols see 'Details 1967'

https://doi.org/10.23637/ERADOC-1-58

68/A/2.6

BARLEY

Plots	Treatment**		GRAIN	STRAW
	1852-1968	1852-1966		
551	N2PK	N	32.5	30.6
561	PK	-	11.0	10.1
571	N2	N*	26.1	18.0
581	N2	N*	14.8	11.1

** For explanation of symbols see 'Details 1967'

Mean D.M. %: Grain: 80.9
Straw: 82.3

POTATOES

Treatments**		TOTAL TUBERS	% WARE
1852-1968	1852-1966		
-	N*	2.20	80.7
Si	N*	2.66	86.8
P	N*	3.67	79.6
P Si	N*	3.30	77.9
K Na Mg	N*	5.78	94.6
K Na Mg Si	N*	6.84	95.6
PK Na Mg	N*	14.66	95.2
PK Na Mg Si	N*	15.04	95.9
-	R	8.98	94.8
P	R	8.41	92.8
K Na Mg	R	12.03	97.5
PK Na Mg	R	14.95	95.3

** For explanation of symbols see 'Details 1967'

BEANS

Treatment**		GRAIN	STRAW
1852-1968	1852-1966		
-	R	24.8	16.9
P	R	22.5	15.5
K Na Mg	R	30.2	21.4
PK Na Mg	R	36.3	28.8

** For explanation of symbols see 'Details 1967'

Mean D.M. %: Grain: 75.9
Straw: 57.2

https://doi.org/10.23637/ERADOC-1-58

68/A/3

WHEAT AFTER FALLOW - HOOSFIELD 1968

(HWF)

For history, treatments, etc. see 'Details' 1967.

Area of each plot: 0.1237. Area harvested: 0.0366.

The seed is now treated with a seed-dressing (dieldrin 1967 and 1968) to control wheat bulb fly (Leptohylemyia coarctata).

Cultivations, etc.:
Cropped plots: Ploughed: 5 Sept, 1967. Seed drilled at 180 lb: 19 Oct. Sprayed with ioxynil at 9 oz and mecoprop at 27 oz in 20 gals: 14 May, 1968. Combine harvested: 26 Aug.
Fallow plots: Ploughed 3 times: 5 Sept, 1967, 27 May and 5 Aug, 1968.

SUMMARY OF RESULTS

Plot No.	A1	A4	A2
No. of years of fallow	1	1	3
		GRAIN	
	14.7	13.4	17.4
		STRAW	
	14.4	12.0	13.8

Mean D.M. %: Grain: 84.1
Straw: 70.5

GRASS - AGDELL 1968

(AG)

For history, treatments, etc. see 'Details' 1962 and 'Results' 63/A/4, 64/A/4, 65/A/4, 66/A/4 and 67/A/4.

Area of each microplot: Plots 1 - 4 - 0.0180. Plots 5 - 6 - 0.0162. Area harvested: 1st cut: Plots 1 - 4 - 0.0046. Plots 5 - 6 - 0.0040. 2nd cut: Plots 1 - 4 - 0.0023. Plots 5 - 6 - 0.0020.

P (as triple superphosphate) and K (as muriate of potash) were applied in March 1968 to balance removals by grass in 1967 to all sub plots except P0, which continues to receive no P, and K0, which continues to receive no K.

Rates in cwt P_2O_5

	Sub plots testing P:-				Sub plots testing K:-			
Plot no.	P0	P1	P2	P4	K0	K1	K2	K4
1	0	0.36	0.32	0.35	0.23	0.36	0.40	0.35
2	0	0.36	0.40	0.31	0.22	0.38	0.39	0.40
3	0	0.39	0.32	0.42	0.18	0.32	0.31	0.32
4	0	0.28	0.27	0.33	0.31	0.36	0.34	0.31
5	0	0.30	0.31	0.30	0.33	0.38	0.38	0.35
6	0	0.30	0.31	0.33	0.22	0.33	0.34	0.33

Rates in cwt K_2O

	Sub plots testing P:-				Sub plots testing K:-			
Plot no.	P0	P1	P2	P4	K0	K1	K2	K4
1	1.33	1.80	1.56	1.65	0	1.48	1.80	1.66
2	0.86	1.63	1.99	1.48	0	1.62	1.68	1.84
3	0.99	2.00	1.57	1.99	0	1.38	1.35	1.52
4	0.48	1.68	1.67	1.75	0	1.50	1.67	1.54
5	0.38	1.84	2.04	1.86	0	1.96	1.94	2.00
6	0.18	1.68	1.57	1.72	0	1.53	1.54	1.64

Basal dressing: 'Nitro-Chalk' applied at 0.8 cwt N on 8 Sept, 1967 and 15 Mar, 1968, 30 May, 15 July.

Cultivations, etc.:
Grass: Ground chalk applied at 46 cwt to plots 1 and 2 and to the southern half of plots 3 and 4: 6 June, 1967. Ploughed: 14 June. Rotary cultivated 4 times: 5 July, 21 July, 8 Aug, 24 Aug. Seed

https://doi.org/10.23637/ERADOC-1-58

drilled at 30 lb: 7 Sept. P and K applied: 15 Mar, 1968.
PO sub plots on plots 4, 5 and 6 resown at 30 lb: 10 Apr.
Sprayed with ioxynil at 7.5 oz and mecoprop at 22.5 oz in
32 gals: 11 Apr. Cut 3 times for silage: 27 May, 10 July,
22 Oct. Variety: Timothy S51.
Fallow: Ploughed: 14 June, 1967.

https://doi.org/10.23637/ERADOC-1-58

68/A/4.3

SUMMARY OF RESULTS

DRY MATTER

1ST CUT

P K	Plot 5	6	3	4	1	2	Mean
0 4	0.0	0.0	3.0	0.0	17.9	5.9	4.5
1 4	20.8	27.6	37.9	31.3	38.1	34.6	31.7
2 4	28.8	27.5	33.0	30.7	33.6	38.6	32.0
4 4	29.8	29.4	36.5	30.7	35.8	40.5	33.8
4 0	17.1	26.0	29.1	29.3	26.5	22.8	25.1
4 1	26.7	31.5	40.3	33.5	35.6	35.7	33.9
4 2	30.5	34.8	31.2	35.6	39.4	35.0	34.4
4 4	31.1	30.8	37.1	39.4	37.7	38.5	35.8
Mean	23.1	25.9	31.0	28.8	33.1	31.5	28.9

Mean D.M. %: 15.0

2ND CUT

P K	5	6	3	4	1	2	Mean
0 4	3.7	4.8	15.5	8.0	23.7	18.7	12.4
1 4	17.7	16.8	16.2	17.0	22.6	20.3	18.4
2 4	17.9	16.9	19.5	13.1	21.1	22.1	18.4
4 4	17.4	16.8	16.0	20.1	22.0	19.7	18.7
4 0	21.1	15.8	17.8	21.4	17.1	17.1	18.4
4 1	19.0	17.1	13.5	25.8	21.2	23.9	20.1
4 2	20.6	18.2	14.7	15.2	18.6	22.8	18.4
4 4	23.2	15.0	16.0	17.3	20.3	20.1	18.6
Mean	17.6	15.2	16.2	17.2	20.8	20.6	17.9

Mean D.M. %: 15.6

https://doi.org/10.23637/ERADOC-1-58

68/A/4.4

DRY MATTER

P K	Plot 5	6	3	4	1	2	Mean
	3RD CUT						
0 4	19.6	21.3	26.2	24.8	23.1	21.4	22.7
1 4	30.7	28.5	24.4	35.2	26.1	27.8	28.8
2 4	25.3	37.0	28.2	31.8	20.5	27.8	28.4
4 4	25.8	27.0	25.6	24.6	26.2	25.4	25.8
4 0	18.2	23.4	20.2	21.0	14.2	13.1	18.3
4 1	25.8	26.1	22.4	28.2	23.7	24.6	25.1
4 2	24.5	29.5	25.4	27.8	27.9	28.8	27.3
4 4	26.1	26.7	23.2	29.3	24.3	25.7	25.9
Mean	24.5	27.4	24.4	27.8	23.2	24.3	25.3

Mean D.M. %: 20.7

	TOTAL OF 3 CUTS						
0 4	23.3	26.2	44.6	32.8	64.7	46.0	39.6
1 4	69.3	72.9	78.5	83.4	86.8	82.7	78.9
2 4	72.0	81.4	80.7	75.6	75.2	88.4	78.9
4 4	73.0	73.2	78.1	75.3	84.0	85.6	78.2
4 0	56.4	65.3	67.1	71.6	57.8	53.0	61.9
4 1	71.5	74.6	76.2	87.5	80.5	84.2	79.1
4 2	75.7	82.5	71.3	78.6	85.9	86.7	80.1
4 4	80.3	72.4	76.3	86.1	82.4	84.3	80.3
Mean	65.2	68.6	71.6	73.9	77.1	76.4	72.1

Mean D.M. %: 17.1

https://doi.org/10.23637/ERADOC-1-58

BARNFIELD: FOUR-COURSE ROTATION AND SPRING BEANS AFTER LONG TERM EXPERIMENTS ON ROOT CROPS

(BN)

First year of new scheme, 1968

For history, treatments, etc., see 'Details 1967' and 'Results' 62/A/5.

Cropping and design:

Series O (now Section 1): Continuous spring beans started 1967. Plots are split lengthways into two for a test (unrandomised) of inter-row cultivation none (O) v.1 (H) 1b simazine 1b simazine for weed control.

The valley (now Section 2), excluding a 30 ft headland between the valley and section 3: As section 1. The remainder of each strip (1, 2, 4, 5, 6, 7, 8,) is split lengthways into two to carry two crops of a four course rotation of potatoes, spring barley, sugar beet and spring wheat, with two crops present each year (barley and wheat in 1968, with barley on the east side, both following beans 1967). Each half is further split breadthways into two for the 4 N rates, which are applied cumulatively (for rates of N see below). Each whole plot has the four rates, N0 and N2 on one crop, N1 and N3 on the other.

In each crop on any one strip Series N and C have the same two rates of N, Series A and AC the other two. In each crop, too, on any one series, strips 1, 4, and 5 have the same two rates of N and strips 2, 6, 7, and 8, the other two. Series N, A, AC, and C are now called Sections 3, 4, 5 and 6 respectively.

Plot 9: Carries a four course rotation as above with one crop present each year (barley in 1968). It is similarly divided into quarter plots to which the 4 rates of N are applied for each crop.

Manuring:

Nitrogen is now applied as 'Nitro-Chalk' only. The rates in lb N are none (N0), 43 (N1), 86 (N2), 129 (N3) to barley and wheat and none (N0), 64 (N1), 129 (N2) and 193 (N3) to potatoes and sugar beet. No N is applied to beans. The mineral fertilisers and FYM to strips continue to be applied. Section 2 (the valley) now receives the strip manures. Application of castor bean meal is discontinued.

https://doi.org/10.23637/ERADOC-1-58

Varieties in 1968: Barley: Maris Badger, spring wheat: Kolibri, spring beans: Maris Bead (uninoculated).

Plot areas:
Wheat and barley (quarter plot):
0.0362 (Strip 1: 0.0238). Area harvested: 0.0193.
Beans Section 1 (half plot): 0.0723
(Strips 1 and 8: 0.0475). Area harvested: 0.0362.
Section 2 (half plot): 0.0241.
(Strips 1 and 8: 0.0158). Area harvested: 0.0129.

Cultivations, etc.:- P, K, Na and Mg applied: 22 Sept, 1967. Sub-soiled: 10 Oct. FYM applied, all plots ploughed: 9 Nov.
Spring wheat: Seed drilled at 160 lb: 4 Mar, 1968. 'Nitro-Chalk' applied: 18 Mar. Combine harvested: 7 Sept.
Barley: Seed drilled at 140 lb: 4 Mar, 1968. 'Nitro-Chalk' applied: 18 Mar. Combine harvested: 22 Aug.
Spring beans: Seed drilled at 200 lb: 4 Mar, 1968. Half plots sprayed with simazine at 1 lb in 33 gals: 5 Mar. 1.04 lb phorate applied in granules: 21 June. Combine harvested: 9 Sept.

NOTE: Birds took much of the grain from the plots of strip 1.

https://doi.org/10.23637/ERADOC-1-58

68/A/5.3

SUMMARY OF RESULTS

SPRING WHEAT

GRAIN

SERIES

Strip	N 1968	N	A	AC	C
1	0	-	18.0	22.3	-
	1	11.1	-	-	27.3
	2	-	20.9	21.5	-
	3	19.7	-	-	17.8
2	0	18.0	-	-	18.5
	1	-	28.7	31.5	-
	2	25.7	-	-	29.3
	3	-	25.0	27.2	-
4	0	-	16.2	18.3	-
	1	22.3	-	-	28.8
	2	-	34.5	33.7	-
	3	28.3	-	-	23.1
5	0	-	18.1	21.0	-
	1	22.0	-	-	27.6
	2	-	36.4	37.3	-
	3	33.1	-	-	35.8
6	0	11.2	-	-	17.4
	1	-	25.0	31.5	-
	2	24.0	-	-	33.4
	3	-	38.0	40.8	-
7	0	9.5	-	-	19.1
	1	-	30.9	33.0	-
	2	21.9	-	-	34.9
	3	-	33.7	41.9	-
8	0	7.6	-	-	20.0
	1	-	21.4	32.7	-
	2	23.5	-	-	38.4
	3	-	39.9	43.2	-

Mean D.M. %: 77.0

https://doi.org/10.23637/ERADOC-1-58

68/A/5.4

SPRING WHEAT

STRAW

SERIES

Strip	N 1968	N	A	AC	C
1	0	-	55.2	28.0	-
	1	40.3	-	-	44.1
	2	-	40.9	54.2	-
	3	60.4	-	-	63.4
2	0	40.0	-	-	31.8
	1	-	56.9	52.8	-
	2	58.1	-	-	57.6
	3	-	69.3	68.5	-
4	0	-	14.8	20.0	-
	1	28.2	-	-	30.8
	2	-	44.2	45.4	-
	3	55.1	-	-	51.9
5	0	-	19.2	22.7	-
	1	35.8	-	-	37.3
	2	-	44.5	48.9	-
	3	51.0	-	-	50.2
6	0	14.0	-	-	19.2
	1	-	33.7	37.9	-
	2	41.4	-	-	46.7
	3	-	56.7	51.6	-
7	0	10.6	-	-	18.5
	1	-	34.1	37.0	-
	2	36.2	-	-	39.9
	3	-	58.7	56.9	-
8	0	12.2	-	-	18.1
	1	-	26.8	35.1	-
	2	36.7	-	-	41.1
	3	-	45.8	48.2	-

Mean D.M. %: 80.4

https://doi.org/10.23637/ERADOC-1-58

68/A/5.5

BARLEY

GRAIN

SERIES

Strip	N 1968	N	A	AC	C
1	0	34.5	-	-	32.7
	1	-	30.0	40.6	-
	2	30.1	-	-	28.4
	3	-	26.2	27.3	-
2	0	-	33.3	31.0	-
	1	37.2	-	-	34.2
	2	-	28.4	30.6	-
	3	24.7	-	-	28.2
4	0	16.8	-	-	20.7
	1	-	23.3	35.5	-
	2	33.9	-	-	34.3
	3	-	29.6	26.6	-
5	0	13.5	-	-	21.7
	1	-	36.1	38.4	-
	2	36.6	-	-	35.9
	3	-	36.5	33.7	-
6	0	-	19.0	22.5	-
	1	25.6	-	-	30.1
	2	-	35.9	33.1	-
	3	31.8	-	-	28.3
7	0	-	14.3	20.7	-
	1	25.2	-	-	30.3
	2	-	39.4	36.7	-
	3	30.3	-	-	22.4
8	0	-	19.7	22.8	-
	1	24.9	-	-	33.3
	2	-	36.8	36.1	-
	3	30.4	-	-	24.4
9	0	13.2			
	1	31.4			
	2	29.8			
	3	33.4			

Mean D.M. %: 82.8

https://doi.org/10.23637/ERADOC-1-58

68/A/5.6

BARLEY

STRAW

SERIES

Strip	N 1968	N	A	AC	C
1	0	38.3	-	-	38.7
	1	-	60.0	59.5	-
	2	66.8	-	-	70.5
	3	-	57.1	52.4	-
2	0	-	35.1	35.2	-
	1	55.9	-	-	55.9
	2	-	58.5	59.6	-
	3	59.5	-	-	60.1
4	0	15.8	-	-	16.7
	1	-	26.7	36.7	-
	2	48.2	-	-	42.4
	3	-	48.9	51.6	-
5	0	12.0	-	-	19.9
	1	-	32.4	35.5	-
	2	46.3	-	-	44.7
	3	-	42.6	45.6	-
6	0	-	16.8	22.3	-
	1	26.4	-	-	27.5
	2	-	43.4	44.8	-
	3	42.5	-	-	45.0
7	0	-	11.8	19.2	-
	1	25.5	-	-	29.9
	2	-	44.2	47.3	-
	3	41.8	-	-	47.9
8	0	-	29.0	19.1	-
	1	28.9	-	-	29.7
	2	-	36.0	25.2	-
	3	34.9	-	-	40.2
9	0	11.8			
	1	29.4			
	2	38.1			
	3	46.2			

Mean D.M. %: 79.7

https://doi.org/10.23637/ERADOC-1-58

68/A/5.7

SPRING BEANS

SERIES

Strip	O	H	Mean
	GRAIN		
1	19.2	26.7	23.0
2	31.9	29.6	30.7
4	30.8	16.7	23.7
5	32.7	11.8	22.2
6	32.1	15.8	23.9
7	32.5	11.9	22.2
8	25.7	7.6	16.7
Mean	29.3	17.2	23.2
	STRAW		
1	5.1	17.8	11.5
2	26.8	16.0	21.4
4	15.2	8.1	11.6
5	17.3	4.0	10.7
6	16.8	5.4	11.1
7	13.7	5.3	9.5
8	10.9	1.7	6.3
Mean	15.1	8.3	11.7

Mean D.M. %: Grain: 79.2
Straw: 82.2

https://doi.org/10.23637/ERADOC-1-58

HAY - THE PARK GRASS PLOTS

(PG)

For history, treatments etc. see 'Details' 1967 and 'Results' 65/A/6.

Ground chalk was applied as follows (lb CaCO3):-

Plot	Sub-plot a	b	c
1	1786	-	2800
2,3,4/1	1786	-	-
4/2	1786	1120	5040
7,8	1786	-	-
9	1786	2240	3920
10	1786	1120	4480
11/1	3572	5600	4480
11/2	3572	3360	4480
13	1786	-	1120
14,16,17	1786	-	-
18	1020	-	2240

Whole plots:-

5/1*	5490
5/2*	4930
6*	6720
18/2,19,20	1020
12	-
15	-

* Plots at present used for microplot experiments.

Cultivations, etc.: Mineral fertilisers applied: 21 Nov, 1967. Ground chalk applied to sub-plots: 13 Dec. Ground chalk applied to whole plots: 28 Dec. Nitrogenous fertilisers applied: 1st dressing - 27 Mar, 1968, 2nd dressing - 22 Apr. Cut twice: 11 June, 5 Nov.

https://doi.org/10.23637/ERADOC-1-58

SUMMARY OF RESULTS

DRY MATTER

Plot No	1st cut a	b	c	d	Mean	2nd cut a	b	c	d	Mean	Total of 2 cuts a	b	c	d	Total
1	14.3	10.8	9.8	6.2	10.3	15.5	13.6	6.6	6.4	10.5	29.8	24.4	16.4	12.6	20.8
2	11.0	14.9	10.6	10.2	11.7	16.5	15.8	16.5	17.4	16.5	27.5	30.6	27.1	27.6	28.2
3	13.8	15.4	11.1	12.1	13.1	14.1	14.9	16.6	18.7	16.1	27.9	30.4	27.7	30.8	29.2
4-1	14.6	16.9	16.1	16.1	15.9	18.9	17.6	22.2	23.3	20.5	33.5	34.5	38.3	39.4	36.4
4-2	27.9	28.0	26.0	18.4	25.1	14.0	12.1	12.1	10.9	12.3	41.9	40.1	38.0	29.3	37.3
7	47.9	42.9	20.0	21.4	33.1	24.2	22.9	27.7	26.8	25.4	72.1	65.9	47.8	48.2	58.5
8	13.8	14.2	16.1	15.9	15.0	17.5	19.5	24.1	23.6	21.2	31.3	33.7	40.2	39.5	36.2
9	53.1	49.8	38.0	39.6	45.1	25.9	21.6	25.7	12.7	21.5	79.0	71.4	63.7	52.3	66.6
10	33.6	33.6	27.4	22.1	29.1	16.0	14.5	16.8	10.0	14.3	49.6	48.0	44.2	32.1	43.5
11-1	50.3	47.3	60.4	14.9	43.2	25.9	21.5	26.9	25.7	25.0	76.2	68.8	87.3	40.6	68.2
11-2	55.5	57.7	62.8	24.1	50.0	37.2	39.0	38.1	28.0	35.6	92.7	96.8	100.9	52.1	85.6
12	10.7		10.2		10.5	30.0		30.1		30.1	40.7		40.3		40.5
13	34.0	34.2	32.5	25.3	31.5	39.0	33.6	38.9	30.5	35.5	73.0	67.9	71.4	55.8	67.0
14	49.4	43.2	49.3	45.7	46.9	21.6	28.2	24.6	25.7	25.0	71.0	71.4	73.9	71.4	71.9
15	37.7		16.8		27.2	21.0		21.2		21.1	58.6		38.0		48.3
16	42.3	48.8	38.3	39.6	42.3	21.8	21.6	27.2	22.4	23.2	64.2	70.4	65.4	62.1	65.5
17	17.9	18.3	22.7	19.7	19.7	14.5	14.9	21.8	18.0	17.3	32.4	33.2	44.5	37.7	37.0
18-1			15.5	11.2	13.4			28.7	23.5	26.1			44.1	34.8	39.5
18-2					20.0					23.3					43.2
18-3	21.9	23.3			22.6	25.4	23.5			24.5	47.3	46.8			47.1
19-1					18.3					46.9					65.2
19-2					30.0					29.0					59.0
19-3					26.6					38.1					64.7
20-1					36.2					38.4					74.6
20-2					37.4					33.6					71.0
20-3					39.4					36.3					75.7

Mean D.M. %: 1st cut: 22.8 2nd cut: 21.5 Total of 2 cuts: 22.2

68/A/6.2

68/A/7

EXHAUSTION LAND, HOOSFIELD 1968

(EX)

For history, treatments, etc. see 'Details' 1967.

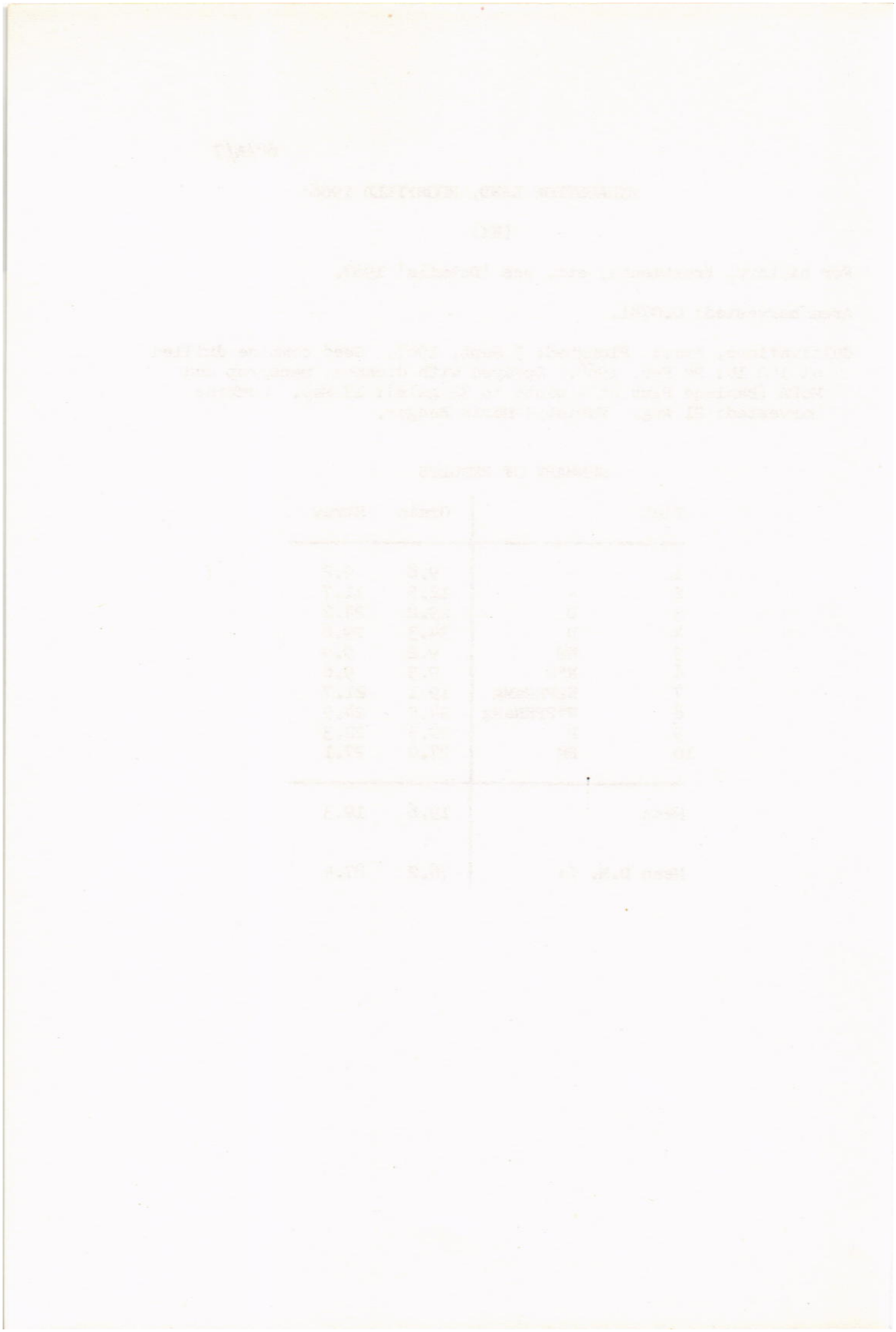
Area harvested: 0.0741.

Cultivations, etc.: Ploughed: 5 Sept, 1967. Seed combine drilled at 140 lb: 28 Feb, 1968. Sprayed with dicamba, mecoprop and MCPA (Banlene Plus at 4 pints in 32 gals): 17 May. Combine harvested: 21 Aug. Variety: Maris Badger.

SUMMARY OF RESULTS

Plot		Grain	Straw
1	-	9.8	9.2
2	-	12.5	11.7
3	D	29.2	27.2
4	D	34.3	29.8
5	N2	9.2	9.9
6	N*2	9.5	9.6
7	N2PKNaMg	19.1	21.7
8	N*2PKNaMg	24.5	24.9
9	P	20.5	22.3
10	PK	27.0	27.1
Mean		19.6	19.3
Mean D.M. %:		76.2	87.4

https://doi.org/10.23637/ERADOC-1-58



68/A/8.1

CLOVER - ROTHAMSTED GARDEN

(EGC)

The 115th year

(Revised 1968)

For history etc., see 'Details' 1967.

Basal applications: 0.6 cwt P_2O_5, 1.2 cwt K_2O applied as (0:14:28) in winter 0.6 cwt K_2O as muriate of potash after each cut except the last.

Test of N x Mg: The test of 0 (N0) v 1.0 (N1) cwt N per cut introduced in 1967 is continued. A further test of 0 (Mg0) v 100 (Mg1) lb Mg as sulphate of magnesia ($MgSO_4.7H_2O$) is applied to quarter plots (50 lb Mg in winter and 50 lb after the 1st cut).

Variety: S123.

Cultivations, etc.: Basal PK and test Mg applied: 24 Jan, 1968. Area hand weeded: 27 Feb. All plants removed and carted, area hand hoed: 12 Mar. Area raked down to seedbed, seed sown at 30 lb, 'Nitro-Chalk' applied: 29 Mar. Cut, basal potash, test Mg and 'Nitro-Chalk' applied: 12 Aug. Cut second time: 17 Oct.

NOTE: Yields were not recorded from N0Mg0 and N1Mg0 plots for the 1st cut because of rabbit damage.

SUMMARY OF RESULTS

DRY MATTER

	N0Mg0	N1Mg0	N0Mg1	N1Mg1
1st cut			17.0	15.8
2nd cut	10.6	13.7	17.7	15.7
Total of 2 cuts			34.7	31.5

Mean D.M. %: 1st cut: 16.1
2nd cut: 15.8
Total of 2 cuts: 16.0

https://doi.org/10.23637/ERADOC-1-58

SAXMUNDHAM

ROTATION I 1968

(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, 67/A/9.

Area harvested:

New treatments,	Sugar beet:	0.0072
	Barley:	0.0257
	Beans and wheat:	0.0230
Old treatments,	Sugar beet:	0.0017
	Barley, beans and wheat:	0.0014

In 1968 nitrogen was applied to sugar beet, barley and wheat at 1.0 cwt N in spring to all fertiliser plots receiving N. On the N2 plots this dressing was followed by a top-dressing of 0.5 cwt N (based on the needs of the crops as indicated by tissue-analysis). Nitrogen applications to beans and to FYM plots were unaltered.

Cultivations, etc.:

Sugar beet: FYM applied: 7 Sept, 1967. Ploughed: 7 and 18 Sept. Bonemeal applied: 5 Mar, 1968. P and K applied: 14 Mar. 'Nitro-Chalk' applied: 20 Mar. Seed drilled: 27 Mar. Sprayed with pyramin at 2.2 lb in 33 gals: 2 Apr. Singled: 20 May. Sprayed with DDT at 9 oz in 18 gals: 23 May. Additional 'Nitro-Chalk' applied to N2 plots: 25 July. Lifted: 24 Sept - 1 Oct. Variety: Klein E.

Barley: FYM applied, all plots ploughed: 7 Sept, 1967. Bonemeal applied: 5 Mar, 1968. P and K applied: 6 Mar. Seed drilled: 12 Mar. 'Nitro-Chalk' applied: 20 Mar. Sprayed with mecoprop at 27 oz and 2,4-D at 6.75 oz in 18 gals: 3 May. Additional 'Nitro-Chalk' applied to N2 plots: 28 May. Combine harvested: 22 Aug. Variety: Zephyr.

Spring beans: FYM applied: 7 Sept, 1967. Ploughed: 7 - 11 Sept. Bonemeal applied: 5 Mar, 1968. P and K applied: 6 Mar. Seed drilled: 8 Mar. 'Nitro-Chalk' applied: 20 Mar. Sprayed with simazine at 1 lb in 33 gals: 21 Mar. Combine harvested: 9 Sept. Variety: Maris Bead.

https://doi.org/10.23637/ERADOC-1-58

68/A/9.2

Winter wheat: FYM applied: 7 Sept, 1967. Ploughed: 7 - 9 Sept. Bonemeal applied: 16 Sept. P and K applied: 5 Oct. Seed drilled: 9 Oct. 'Nitro-Chalk' applied: 20 Mar, 1968. Sprayed with mecoprop at 32.5 oz and 2,4-D at 8 oz in 18 gals: 18 Apr. Additional 'Nitro-Chalk' applied to N2 plots: 15 May. Combine harvested: 22 Aug. Variety: Cappelle.

SAXMUNDHAM

ROTATION II 1968

(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, 67/A/10.

Area of each plot: 0.0273. Area harvested: 0.0149.

Barley was grown over the whole area. No treatments (phosphate or FYM) were applied.

Basal manuring: 3 cwt (25:0:16).

Cultivations, etc.:- Ploughed: 16 - 23 Oct, 1967. Basal NK compound applied: 6 Mar, 1968. Seed drilled: 11 Mar. Sprayed with mecoprop at 36 oz and 2,4-D at 9 oz in 32 gals: 3 May. Combine harvested: 14 Aug. Variety: Zephyr.

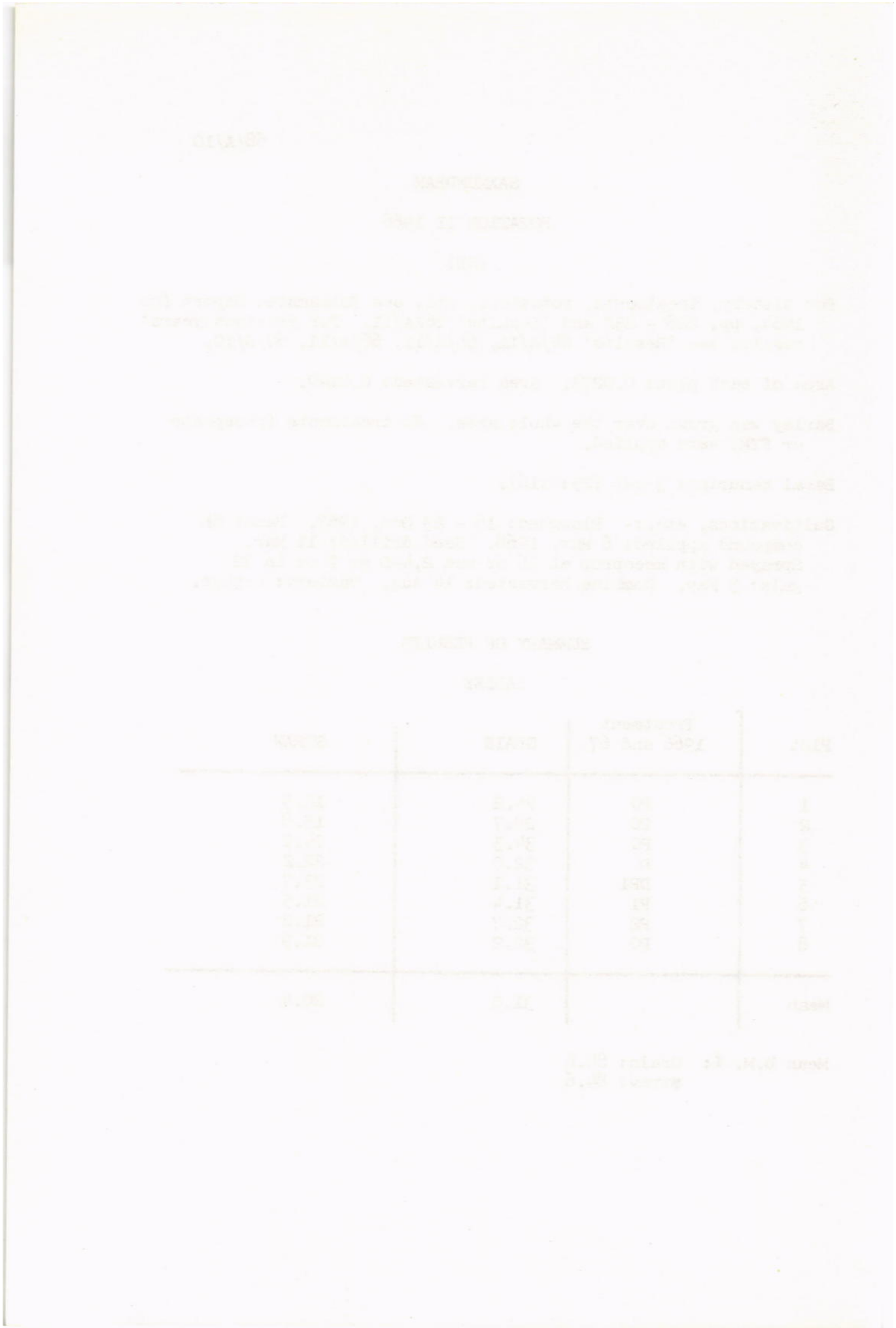
SUMMARY OF RESULTS

BARLEY

Plot	Treatment 1966 and 67	GRAIN	STRAW
1	P0	24.2	12.3
2	P0	29.7	15.8
3	P0	34.3	24.2
4	D	32.0	22.2
5	DP1	31.1	23.7
6	P1	31.4	21.5
7	P2	32.7	21.2
8	P0	32.2	21.9
Mean		31.0	20.4

Mean D.M. %: Grain: 84.6
Straw: 84.6

https://doi.org/10.23637/ERADOC-1-58



SUMMARY OF RESULTS

NEW TREATMENTS

Treatment 1899 -1965	Treatment from 1966	SUGAR BEET Roots	Sugar %	Total sugar	Tops	BARLEY Grain	Straw	SPRING BEANS Grain	WINTER WHEAT Grain	Straw
D	DN1	19.66	16.2	63.7	13.59	30.7	32.2	27.6	48.4	40.0
B	B	7.95	15.8	25.1	3.93	10.5	6.1	23.6	27.8	20.5
N	N2P2	16.95	15.6	52.8	15.71	31.3	19.4	24.5	40.0	28.5
P	N1P1	15.27	16.2	49.5	10.32	34.3	20.0	25.4	41.8	31.0
K	N1P2K	15.36	16.6	51.1	9.32	31.8	18.8	25.6	42.6	38.9
-	N1P2	15.40	16.3	50.0	9.57	28.7	20.0	25.8	45.9	37.5
PK	N1P1K	16.17	16.4	53.2	11.03	27.6	20.6	28.4	42.5	28.7
NK	N2P2K	15.80	15.7	49.6	14.58	26.5	18.6	27.5	47.6	30.9
NP	N2P1	16.74	15.3	51.1	16.21	38.0	23.8	22.0	43.5	26.7
NPK	N2P1K	16.77	15.5	51.9	15.99	33.5	19.7	30.5	42.7	30.6
Mean		15.61	16.0	49.8	12.02	29.3	19.9	26.1	42.3	31.3
Mean D.M. %:						85.0	82.7	80.4	79.7	72.6

68/A/9.3