ROTHAMSTED RESEARCH

Yields of the Field Experiments 1971

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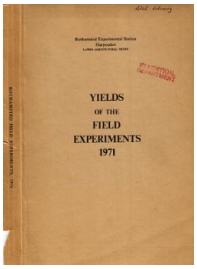

Experiments - Classicals

Rothamsted Research

Rothamsted Research (1972) *Experiments - Classicals ;* Yields Of The Field Experiments 1971, pp 9 - 49 **- DOI: https://doi.org/10.23637/ERADOC-1-97**

71/R/BK/1

BROADBALK

Object: To study the effects of organic and inorganic manures on continuous winter wheat. Since 1968 a rotation of potatoes, beans and wheat has been included.

The 128th year, wheat, potatoes, beans. The fourth year of revised scheme.

For previous years see 'Details' 1967, Station Report for 1966, pp. 229-231, Station Report for 1968, Part 2, 68/A/1(t) and 69 - 70/R/BK/1.

Areas harvested:

Wheat:	Section 0	0.00433
	Section 1	0.00798
	Sections 3, 4 and 5	0.00659
	Sections 8 and 9	0.00694
Potatoes:	Section 7	0.00659
Beans:	Section 2	0.00741

Standard applications:-

Winter wheat: Weedkillers: Paraquat at 0.84 kg ion in 225 l to Section 0 only. Terbutryne and related triazines ('Prebane' at 4.48 kg in 225 l), MCPA, mecoprop and dicamba ('Banlene Plus' at 5.6 l in 225 l) to all sections except 8.

Potatoes: Weedkillers: Paraquat at 0.56 kg ion in 225 l. Linuron at 0.84 kg plus paraquat at 0.42 kg ion in 427 l. Fungicide: Mancozeb at 1.34 kg in 438 l on 2 occasions.

Spring beans: Weedkiller: Paraquat at 0.56 kg ion in 225 l. Insecticide: Demeton-s-methyl at 245 g in 438 l.

Cultivations, etc.:-

ALL SECTIONS: Autumn fertilisers applied: 18 Sept, 1970. FYM applied: 22 Sept. Ploughed: 21 - 23 Sept.

CROPPED SECTIONS:

Winter wheat: Paraquat applied to Section 0: 11 Sept, 1970. Seed drilled at 202 kg: 9 Oct. 'Prebane' applied: 10 Oct. N applied: 8 Apr, 1971. MCPA/mecoprop/dicamba applied: 15 Apr. Plot 19, Section 8 cut green and all produce removed (because of excessive weed infestation) and then deep-tine cultivated twice: 28 July. Combine harvested: 27 Aug. Variety: Cappelle.

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Potatoes: Paraquat applied: 4 Feb, 1971. N applied, plots rotary cultivated: 2 Apr. Potatoes machine planted: 3 Apr. Linuron plus paraquat applied: 8 May. Plots 01, 21 and 22 grubbed: 3 June and rotary ridged: 4 June. Remaining plots grubbed: 5 June and rotary ridged: 10 June. Fungicide applied: 23 June and 16 Aug. Haulm destroyed mechanically: 26 Aug - 8 Sept. Lifted: 14 Sept. Variety: King Edward.

Spring beans: Paraquat applied: 4 Feb, 1971. N applied: 24 Feb. Seed drilled at 224 kg: 25 Feb. Insecticide applied: 1 July. Combine harvested: 2 Sept. Variety: Maris Bead.

FALLOW SECTION: Ploughed second time: 19 Apr, 1971, third time: 8 July.

BROADBALK WILDERNESS:-

Ungrazed meadow (north): Topped with rotary grass cutter: 23 Oct, 1970.

Grazed meadow (centre): Grazed by sheep: 5 - 26 May, 1971, 8 - 16 June, 6 - 16 July, 13 - 19 Aug, 10 - 21 Sept. Grass topped: 27 May, 16 June, 16 July, 22 Sept.

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71/R/BK/1

SUMMARY OF RESULTS

WHEAT

GRAIN: TONNES/HECTARE

Section	3	5	4	1	8	9	0	
Years after fallow	1	2	**	5	8*	13	20	Mean
Plot								
01	6.37	5.76	5.86					
21	6.10	5.30	4.88	5.38	3.91	5.54	4.86	5.14
22	7.31	6.65	6.88	6.68	3.29	6.62	6.54	6.28
03	3.13	2.21	2.53	2.08	1.57	2.05	2.08	2.24
05	3.78	1.95	2.64	2.00	2.10	2.20	2.54	2.46
06	4.66	4.17	4.93	4.29	1.39	4.09	4.52	4.01
07	5.14	6.29	6.37	5.57	2.85	5.94	5.95	5.44
08	5.33	5.97	6.05	5.36	3.65	6.23	5.73	5.48
09	5.45	5.81	5.95	5.37	2.58	5.91	5.27	5.19
10	4.14	5.38	5.44	4.66	3.53	4.06	3.30	4.36
11	2.95	4.98	5.11	3.46	2.45	3.46	4.23	3.81
12	4.40	5.74	5.74	5.55	2.90	5.79	5.31	5.06
13	5.07	6.00	6.35	5.51	2.75	6.29	5.57	5.36
14	4.89	6.13	6.38	6.04	3.66	6.09	5.58	5.54
15	5.44	6.06	6.18	6.00	3.80	6.99	5.82	5.76
16	5.43	5.67	6.14	5.32	2.36	5.49	4.93	5.05
17	5.36	5.81	6.18	5.23	2.22	5.85	5.52	5.17
18	5.40	5.84	6.16	5.42	2.80	6.23	5.17	5.29
19	5.25	5.29	5.70	4.26	+	4.90	4.56	
20				4.64			4.42	

Mean D.M. %: 80.8

* No herbicide
** After beans
\+ Cut green - no yield taken

% Weed seeds + rubbish

Plot	Section	
05	8	46.7
06	8	60.6
10	8	1.9
10	9	0.8
11	3	0.9
11	4	0.4
16	0	0.3

https://doi.org/10.23637/ERADOC-1-97

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WHEAT

STRAW: TONNES/HECTARE

Section	3	5	4	1	8	9	0	
Years after fallow	1	2	**	5	8*	13	20	Mean
Plot								
01	5.25	5.80	6.15					5.73
21	7.29	6.83	9.02	6.04	9.04	7.43	5.96	7.37
22	7.37	6.84	7.72	8.01	10.01	7.23	8.04	7.89
03	1.81	1.61	2.21	2.13	2.51	1.36	1.82	1.92
05	3.05	1.52	2.00	2.09	5.10	1.80	1.95	2.50
06	4.51	3.40	4.68	3.99	5.12	3.79	4.00	4.21
07	4.27	6.35	6.23	4.98	8.25	5.71	5.15	5.85
08	4.67	6.21	7.24	5.83	9.99	5.95	4.51	6.34
09	4.78	5.61	5.85	5.80	9.98	5.48	4.56	6.01
10	2.19	3.88	3.56	3.61	6.77	3.94	3.09	3.86
11	1.78	3.21	3.74	2.79	6.45	3.11	2.88	3.42
12	3.04	4.36	5.15	4.21	7.12	4.81	5.90	4.94
13	4.50	5.48	6.57	5.40	7.73	7.97	4.40	6.01
14	3.88	4.87	6.65	4.99	8.08	6.00	5.22	5.67
15	4.74	6.14	6.14	5.06	8.61	7.15	5.86	6.24
16	4.84	5.36	6.18	4.90	8.30	5.62	4.72	5.70
17	4.47	5.31	6.13	4.69	8.86	6.19	4.79	5.78
18	4.93	5.52	5.68	5.08	10.70	5.54	4.77	6.03
19	3.05	4.61	5.26	4.37	7.28	4.24	4.54	4.77
20				4.17			3.84	4.00

Mean D.M. %: 90.2

* No herbicide
** After beans

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Section	2		2	
	SPRING BEANS		POTATOES	
Plot	GRAIN: TONNES/ HECTARE	STRAW: TONNES/ HECTARE	TOTAL TUBERS: TONNES/ HECTARE	% WARE 3.81 CM (1.5 INCH) RIDDLE
01	1.94	2.20	36.2	84.9
21	2.60	4.15	49.4	87.6
22	2.59	3.54	36.2	85.9
03	2.02	1.41	7.8	59.7
05	2.69	2.11	9.6	52.3
06	2.53	3.04	20.2	67.2
07	2.56	3.37	35.4	80.2
08	2.41	3.01	42.4	84.3
09	2.52	3.07	45.6	86.5
10	1.53	0.68	9.2	69.0
11	0.49	1.84	6.2	26.0
12	1.06	1.75	12.0	38.8
13	2.19	2.78	25.8	71.0
14	2.07	2.22	22.8	66.0
15	2.14	2.52	36.5	80.4
16	2.32	2.87	35.8	83.6
17	2.46	2.29	35.7	85.4
18	2.63	2.63	35.6	85.7
19	2.05	2.18	23.3	80.0
Mean D.M. %:	79.5	49.5		

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71/R/HB/2

HOOSFIELD

Object: To study the effects of organic and inorganic manures on continuous spring barley. Since 1968 a rotation of potatoes, beans and barley has been included.

The 120th year, potatoes, beans, barley. The 4th year of revised scheme.

For previous years see 'Details' 1967, Station Report for 1966, 68/A/2(t), 69/R/HB/2(t) and 70/R/HB/2.

Standard applications:
Potatoes: Weedkillers: Paraquat at 0.28 kg ion in 225 l. Linuron at 1.68 kg in 427 l. Fungicide: Mancozeb at 1.34 kg in 438 l.
Spring beans: Weedkiller: Paraquat at 0.28 kg ion in 225 l. Insecticide: Demeton-s-methyl at 245 g in 427 l.
Barley: Weedkillers: Paraquat at 0.28 kg ion in 225 l. Ioxynil octanoate, bromoxynil octanoate and the iso-octyl ester of dichlorprop ('Oxytril P' at 1.4 l in 225 l).

Cultivations, etc.: Fertilisers, except N, applied: 16 Oct, 1970. FYM applied: 21 Oct. Ploughed: 22 Oct.
Potatoes: Paraquat applied: 19 Sept, 1970. N applied, plots rotary cultivated, potatoes machine planted: 2 Apr, 1971. Linuron applied: 15 Apr. Grubbed: 3 June. Rotary ridged: 4 June. Fungicide applied: 13 Aug. Haulm destroyed mechanically: 8 Sept. Lifted: 15 Sept. Variety: King Edward.
Spring beans: Paraquat applied: 19 Sept, 1970. Seed drilled at 224 kg: 24 Feb, 1971. Insecticide applied: 1 July. Combine harvested: 2 Sept. Variety: Maris Bead.
Barley: Paraquat applied: 19 Sept, 1970. Seed drilled at 157 kg: 24 Feb, 1971. N applied: 23 Mar. 'Oxytril P' applied: 10 May. Combine harvested, large combine plots: 11 Aug, small combine plots: 18 Aug. Variety: Julia.

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NOTES: (1) Strip 3 (K Na Mg) received an overdose of 72.8 kg of total mineral fertiliser to the strip.

(2) Equisetum infestation was greatest on certain plots without N. In places the edge of a patch of Equisetum coincided with the boundary of a plot receiving N.

(3) After barley harvest, shed grain sprouted in patches, apparently where the combine stopped at the end of each yield strip. The patches were larger at the South than the North ends, and were absent or very slight on the small combine plots. A rough calculation from one plot indicated a loss of about 100 kg per ha from the area taken for yield.

https://doi.org/10.23637/ERADOC-1-97

71/R/HB/2

SUMMARY OF RESULTS

BARLEY

N: KG/HA

Treatment**		0	48	96	144	Mean
1852-1971	1852-1966	GRAIN: TONNES/HECTARE				
-	-	1.36	2.63	3.15	2.91	2.51
-	N	1.74	1.94	2.17	1.96	1.95
P	-	1.66	3.11	3.35	3.46	2.89
P	N	1.96	2.69	2.36	1.41	2.10
K Na Mg	-	0.98	3.23	3.86	4.59	3.17
K Na Mg	N	1.75	2.64	2.38	2.82	2.40
P K Na Mg	-	1.48	3.94	5.45	6.08	4.24
P K Na Mg	N	2.53	3.74	6.30	5.79	4.59
	D	5.02	5.55	4.76	4.67	5.00
	(D)	1.04	2.76	4.20	4.19	3.05
	(Ashes)	1.98	3.87	4.11	4.73	3.67
	-	1.22	2.80	2.47	3.90	2.60
		STRAW: TONNES/HECTARE				
-	-	0.57	1.42	1.84	1.85	1.42
-	N	0.58	1.13	1.28	1.14	1.03
P	-	0.84	1.84	2.28	2.42	1.84
P	N	0.73	1.72	1.88	1.43	1.44
K Na Mg	-	0.41	1.96	3.13	3.45	2.24
K Na Mg	N	0.71	1.73	1.84	2.12	1.60
P K Na Mg	-	0.55	2.34	3.95	5.39	3.06
P K Na Mg	N	1.16	2.46	3.59	1.90	2.28
	D	4.18	5.18	5.50	5.47	5.08
	(D)	1.06	2.42	4.22	4.51	3.05
	(Ashes)	0.72	2.25	2.99	3.21	2.29
	-	0.55	1.52	2.06	2.63	1.69

** For explanation of symbols see 'Details' 1967

Mean D.M. % (all plots): Grain: 81.4
Straw: 89.8

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71/R/HB/2

BARLEY

N: KG/HA

Treatment**		0	48	96	144	Mean
		GRAIN: TONNES/HECTARE				
1852-1971	1852-1966					
-	N*	2.17	2.36	2.55	2.56	2.41
Si	N*	2.31	4.62	5.34	4.34	4.15
P	N*	2.12	3.74	3.93	3.54	3.33
P Si	N*	2.59	4.83	5.14	6.03	4.65
K Na Mg	N*	1.28	3.18	3.59	3.41	2.86
K Na Mg Si	N*	2.33	4.43	5.28	5.99	4.51
P K Na Mg	N*	1.90	4.47	5.56	5.84	4.44
P K Na Mg Si	N*	2.11	4.90	6.70	6.04	4.94
-	R(c)	2.42	4.58	5.64	6.12	4.69
-	R(r)	3.92	5.06	5.82	5.86	5.17
P	R(c)	2.85	4.66	5.19	4.39	4.28
P	R(r)	3.85	5.21	5.40	5.01	4.87
K Na Mg	R(c)	2.67	4.29	5.19	6.23	4.60
K Na Mg	R(r)	3.44	4.46	5.43	5.72	4.76
P K Na Mg	R(c)	2.76	4.41	6.22	5.96	4.84
P K Na Mg	R(r)	4.19	5.61	5.92	6.30	5.50
		STRAW: TONNES/HECTARE				
-	N*	0.99	0.98	0.99	1.45	1.10
Si	N*	0.95	2.99	3.47	2.94	2.59
P	N*	1.02	2.49	2.45	2.52	2.12
P Si	N*	1.00	3.60	3.89	4.48	3.24
K Na Mg	N*	0.96	1.91	2.37	2.24	1.87
K Na Mg Si	N*	0.97	2.96	3.77	4.80	3.12
P K Na Mg	N*	0.90	3.04	4.11	4.57	3.16
P K Na Mg Si	N*	0.92	3.40	5.02	5.10	3.61
-	R(c)	1.01	3.08	4.12	4.53	3.19
-	R(r)	1.96	3.02	4.03	4.04	3.26
P	R(c)	1.50	3.07	3.59	3.61	2.94
P	R(r)	2.01	3.57	3.60	3.08	3.06
K Na Mg	R(c)	0.99	2.92	4.08	5.09	3.27
K Na Mg	R(r)	1.49	3.03	4.05	4.97	3.39
P K Na Mg	R(c)	1.48	3.02	4.07	4.56	3.28
P K Na Mg	R(r)	2.49	3.52	4.53	4.85	3.85

** For explanation of symbols see 'Details' 1967

NOTE: (c) = continuous (i.e. barley after barley)
(r) = rotational (i.e. barley after beans)

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71/R/HB/2

BARLEY

Plots	Treatment**			GRAIN: TONNES/ HECTARE	STRAW: TONNES/ HECTARE
	1852-1971		1852-1966		
551	N2	PK	N	4.30	3.20
561	-	PK	-	1.19	0.58
571	N2	-	N*	3.89	2.41
581	N2	-	N*	2.87	1.77

** For explanation of symbols see 'Details' 1967

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71/R/HB/2

BEANS

1969

N: KG/HA

Treatment**		0	48	96	144	Mean
		GRAIN: TONNES/HECTARE				
1852-1971 1852-1966						
-	R	1.79	1.28	2.37	1.62	1.77
P	R	1.08	1.39	1.64	1.69	1.45
K Na Mg	R	1.71	1.67	1.66	1.60	1.66
P K Na Mg	R	2.04	2.47	2.39	2.54	2.36
Mean		1.66	1.70	2.01	1.86	1.81
		STRAW: TONNES/HECTARE				
-	R	1.37	0.72	1.30	0.99	1.10
P	R	0.69	1.23	0.90	1.08	0.98
K Na Mg	R	2.16	1.13	1.56	1.39	1.56
P K Na Mg	R	2.06	2.28	2.67	3.27	2.57
Mean		1.57	1.34	1.61	1.69	1.55

Mean D.M. %: Grain: 81.5
Straw: 52.7

** For explanation of symbols see 'Details' 1967

https://doi.org/10.23637/ERADOC-1-97

71/R/HB/2

POTATOES

Treatments**		N: KG/HA 1970	0	48	96	144	Mean
TOTAL TUBERS: TONNES/HECTARE							
1852-1970	1852-1966						
-		N*	8.3	9.0	7.4	8.1	8.2
	Si	N*	7.4	7.5	8.1	8.3	7.8
P		N*	7.8	7.2	6.6	8.1	7.4
P	Si	N*	7.2	7.1	7.2	8.2	7.4
K Na Mg		N*	23.1	23.8	21.0	22.1	22.5
K Na Mg Si		N*	27.7	25.9	26.5	26.3	26.6
P K Na Mg		N*	35.5	34.8	38.4	35.0	35.9
P K Na Mg Si		N*	38.7	37.0	32.0	36.0	35.9
-		R	18.3	20.1	18.4	18.4	18.8
P		R	13.4	11.6	10.2	16.6	13.0
K Na Mg		R	26.6	26.2	25.9	30.0	27.2
P K Na Mg		R	38.1	34.1	35.8	38.3	36.6
% WARE: 3.81 (1.5 INCH) RIDDLE							
-		N*	67.3	69.6	62.0	77.9	69.2
	Si	N*	63.4	66.4	68.8	67.1	66.4
P		N*	45.3	34.3	28.8	36.1	36.1
P	Si	N*	39.4	35.3	44.2	44.6	40.9
K Na Mg		N*	89.1	89.6	87.0	87.9	88.4
K Na Mg Si		N*	91.1	89.9	90.1	90.2	90.3
P K Na Mg		N*	79.3	77.7	75.4	82.9	78.8
P K Na Mg Si		N*	79.3	78.5	76.8	80.1	78.7
-		R	79.1	79.9	80.9	81.5	80.4
P		R	53.1	46.6	36.9	59.0	48.9
K Na Mg		R	82.1	80.2	84.2	82.5	82.3
P K Na Mg		R	80.4	76.6	75.7	77.2	77.5

** For explanation of symbols see 'Details 1967'

https://doi.org/10.23637/ERADOC-1-97

71/R/WF/3

WHEAT AND FALLOW

Object: To study the effects of fallowing for one or three years on unmanured winter wheat - Hoosfield.

The 116th year, winter wheat.

For previous years see 'Details' 1967, 68/A/3(t) and 69-70/R/WF/3.

Whole plot dimensions: 9.6 x 52.1. Area harvested: 0.01483.

Cultivations, etc.:
Cropped plots: Ploughed: 4 Sept, 1970. Seed drilled at 202 kg: 9 Oct. Sprayed with ioxynil at 0.63 kg and mecoprop at 1.9 kg in 225 l: 15 Apr, 1971. Combine harvested: 27 Aug. Variety: Cappelle.
Fallow plots: Ploughed 3 times: 4 Sept, 1970, 19 Apr, 1971, 8 July.

SUMMARY OF RESULTS

Plot No.	6	8	2
No. of years of fallow	1	1	3
	GRAIN: TONNES/HECTARE		
	1.82	1.22	1.81
	STRAW: TONNES/HECTARE		
	1.20	0.92	1.01

Mean D.M. %: Grain: 79.6
Straw: 85.0

https://doi.org/10.23637/ERADOC-1-97

71/R/EX/4

EXHAUSTION LAND

Object: To study the residual effects of manures, applied 1856-1901, on the yield of continuous barley - Hoosfield.

The 116th year, barley.

For previous years see 'Details' 1967, 68/A/7 and 69-70/R/EX/4.

Area harvested: 0.03000.

Cultivations, etc.: Ploughed: 9 Sept, 1970. Seed combine drilled at 157 kg: 25 Feb, 1971. Sprayed with ioxynil octanoate, bromoxynil octanoate and the iso-octyl ester of dichlorprop ('Oxytril P' at 1.4 l in 225 l): 11 May. Combine harvested: 17 Aug. Variety: Julia.

SUMMARY OF RESULTS

Plot	1876 - 1901	TONNES/HECTARE GRAIN	STRAW
1	-	1.72	0.69
2	-	1.84	1.14
3	D	4.69	2.97
4	D	4.69	2.98
5	N	1.89	0.99
6	N*	1.87	1.34
7	N PKNa Mg	4.05	2.60
8	N* PKNa Mg	4.18	2.62
9	P	3.56	2.58
10	PKNa Mg	4.45	2.83
Mean		3.29	2.07
Mean D.M. %:		83.8	87.7

https://doi.org/10.23637/ERADOC-1-97

71/R/PG/5

PARK GRASS

Object: To study the effects of organic and inorganic manures on permanent grass (for hay). The effects of liming are also studied.

The 116th year, hay.

For previous years see 'Details' 1967, 68/A/6(t) and 69-70/R/PG/5.

Cultivations, etc.: Mineral fertilisers applied, fish meal applied: 10 Nov, 1970. N applied: 1st dressing - 30 Mar, 1971, 2nd dressing - 19 Apr. Cut twice: 24 June, 15 Sept.

https://doi.org/10.23637/ERADOC-1-97

SUMMARY OF RESULTS

DRY MATTER: TONNES/HECTARE

Plot	1st cut a	b	c	d	Mean	2nd cut a	b	c	d	Mean	Total of 2 cuts a	b	c	d	Mean
1	2.49	2.26	1.66	0.52	1.73	1.43	1.32	0.50	0.48	0.93	3.92	3.57	2.16	1.00	2.66
2	1.78	1.71	1.74	1.73	1.74	1.17	1.00	0.83	1.02	1.01	2.95	2.72	2.56	2.75	2.75
3	1.61	1.80	1.59	1.50	1.62	0.84	0.86	0.82	0.83	0.83	2.44	2.66	2.40	2.33	2.46
4-1	2.26	2.25	2.09	2.15	2.19	1.19	1.18	1.14	1.12	1.16	3.45	3.43	3.24	3.27	3.35
4-2	3.41	3.41	3.99	3.21	3.50	1.19	1.18	0.88	1.19	1.11	4.60	4.59	4.88	4.40	4.62
7	5.57	5.38	2.97	3.49	4.35	3.66	3.58	2.00	1.81	2.76	9.23	8.97	4.97	5.30	7.12
8	2.52	2.34	2.80	2.71	2.59	1.53	1.30	1.47	1.47	1.44	4.05	3.64	4.27	4.18	4.04
9	6.94	7.03	7.66	5.93	6.89	2.93	2.79	1.62	1.03	2.09	9.87	9.82	9.28	6.96	8.98
10	4.54	4.74	5.09	3.99	4.59	1.55	1.50	1.34	1.17	1.39	6.09	6.24	6.43	5.16	5.98
11-1	7.52	7.68	9.10	7.57	7.97	2.97	2.32	2.52	3.01	2.70	10.49	10.00	11.62	10.58	10.67
11-2	7.45	7.99	7.17	7.90	7.63	3.88	3.56	2.35	2.48	3.07	11.32	11.56	9.53	10.38	10.70
12	2.35		2.94		2.64	1.52		1.18		1.35	3.87		4.12		4.00
13	5.37	5.50	5.00	4.46	5.08	3.24	2.99	2.31	1.96	2.62	8.61	8.49	7.30	6.42	7.71
14	6.37	5.07	6.16	6.45	6.01	1.10	2.53	3.17	3.38	2.54	7.47	7.60	9.33	9.83	8.56
15	4.80		2.57		3.68	2.85		1.44		2.14	7.65		4.00		5.83
16	5.36	5.48	4.42	4.26	4.88	2.59	2.73	2.22	1.88	2.36	7.95	8.21	6.64	6.14	7.24
17	2.52	2.46	3.01	3.05	2.76	1.34	1.26	1.34	1.56	1.38	3.85	3.72	4.36	4.61	4.14
18-1			3.92	1.69	2.80			1.40	0.93	1.17			5.32	2.62	3.97
18-2					3.02					1.98					5.00
18-3	3.58	3.61			3.60	1.89	1.98			1.94	5.48	5.60			5.54
19-1					4.54					2.58					7.12
19-2					5.45					3.16					8.61
19-3					5.07					2.78					7.85
20-1					5.98					2.87					8.85
20-2					5.62					2.32					7.94
20-3					5.52					2.46					7.98

Mean D.M. %: 1st cut: 24.4 2nd cut: 26.2 Total of 2 cuts: 25.3

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71/R/AG/6

AGDELL

Object: To study, by crop yields and soil analysis, the residual value of phosphate applied in the period 1848 - 1951 and further dressings in 1964.

The second year of revised scheme. Rotation: Sugar beet, barley, potatoes. Crops in 1971: Barley and potatoes.

For previous years see 'Details' 1967, 68/A/4, 69/R/AG/6 and 70/R/AG/6(t).

Sub plot dimensions:
Fallow: Plots 1, 2, 3, 4 - 12.1 x 6.04. Plots 5, 6 - 10.9 x 6.04.
Barley and potatoes: Plots 1, 2, 3, 4 - 6.04 x 3.02. Plots 5, 6 - 5.43 x 3.02.

Area harvested: Barley: 0.00066, potatoes: 0.00069.

The remaining grass sub plots were rotary cultivated in autumn 1970 and bare-fallowed in 1971.

New superphosphate treatments:
Barley: As 1970.
Potatoes: None (0), 188 kg (3) P_2O_5 as single superphosphate.

Standard applications:
Barley: Manures as 1970.
Potatoes: Manures: 251 kg N, 251 kg K_2O, 100 kg MgO as 'Nitro-Chalk' 21, muriate of potash and kieserite. Weedkillers: Linuron at 0.84 kg plus paraquat at 0.84 kg ion in 449 l. Couch was spot-sprayed with paraquat. Fungicide: Mancozeb at 1.34 kg in 449 l on 3 occasions, followed by captafol at 1.68 kg in 449 l on one occasion. Insecticide: Menazon ('Saphicol' at 0.7 l) applied with each application of fungicide.

Cultivations, etc.:
Grass and fallow: Grass plots rotary cultivated: 21 Oct, 1970. All fallows sprayed with paraquat at 1.12 kg ion in 225 l: 6 Nov. All fallows rotary cultivated: 21 Apr, 1971, 11 May, 2 June.
Barley: Ploughed: 29 Oct, 1970. Test P applied, seed drilled at 168 kg, basal NK applied: 10 Mar, 1971. Combine harvested: 9 Aug. Variety: Julia.
Potatoes: Ploughed: 29 Oct, 1970. Test P, basal NK and Mg applied, plots rotary cultivated, potatoes planted: 5 Apr, 1971. Linuron and paraquat applied: 10 May. Couch spot sprayed with paraquat: 2 June. Insecticide and fungicide applied: 16 June, 6 and 28 July, 18 Aug. Lifted 28 Sept. Variety: King Edward.

https://doi.org/10.23637/ERADOC-1-97

71/R/AG/6

SUMMARY OF RESULTS

BARLEY

GRAIN: TONNES/HECTARE

Treatment 1848-1951		Plot 5 None	6 None	3 PK	4 PK	1 NPK	2 NPK	Mean
P		Previous cropping 1958-69, Arable or fallow						
1964	1970-71							
0	0	3.06	4.06	5.43	4.09	3.30	4.08	4.01
1	0	4.10	3.03	5.33	4.42	3.44	4.41	4.12
2	0	4.79	4.79	5.37	4.86	3.87	4.84	4.75
4	0	4.60	5.55	5.74	5.58	3.69	5.31	5.08
0	1	4.38	4.95	5.09	4.31	2.73	5.00	4.41
1	1	4.72	4.76	5.44	4.39	4.34	5.13	4.80
2	1	5.49	4.91	5.56	5.37	3.73	4.53	4.93
4	1	5.87	5.51	5.91	5.54	4.65	5.04	5.42
Mean		4.63	4.70	5.48	4.82	3.72	4.79	4.69
P		Previous cropping 1958-69, Grass						
1964-69	1970							
0	0	2.99	3.25	3.35	4.00	5.39	4.85	3.97
1	0	5.30	6.34	6.35	5.46	6.05	6.20	5.95
2	0	6.17	6.15	6.16	6.16	5.72	6.04	6.07
4	0	5.86	6.52	6.48	6.72	6.17	5.80	6.26
0	1	4.96	5.88	5.61	5.34	5.64	5.67	5.52
1	1	6.13	6.25	6.58	6.53	6.27	6.21	6.33
2	1	6.22	6.44	6.19	6.16	6.21	6.38	6.27
4	1	6.12	6.73	6.20	5.96	5.98	5.97	6.16
Mean		5.47	5.95	5.87	5.79	5.93	5.89	5.81

Mean D.M. %: 78.0

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71/R/AG/6

BARLEY

STRAW: TONNES/HECTARE

Treatment 1848-1951		Plot 5 None	6 None	3 PK	4 PK	1 NPK	2 NPK	Mean
P		Previous cropping 1958-69, Arable or fallow						
1964	1970-71							
0	0	2.14	2.72	4.00	2.72	2.35	2.85	2.80
1	0	3.16	2.20	3.59	2.85	2.55	2.77	2.85
2	0	3.60	3.27	3.62	3.28	2.69	3.18	3.27
4	0	3.37	4.25	3.80	3.67	2.58	3.26	3.49
0	1	3.16	4.05	3.73	2.85	2.23	3.58	3.27
1	1	3.59	3.39	3.81	3.00	3.11	3.27	3.36
2	1	3.89	3.55	3.72	3.92	2.67	3.06	3.47
4	1	4.22	4.38	4.04	3.99	3.17	3.02	3.80
Mean		3.39	3.48	3.79	3.28	2.67	3.12	3.29
P		Previous cropping 1958-69, Grass						
1964-69	1970							
0	0	1.85	2.30	2.29	2.64	4.04	3.36	2.75
1	0	3.83	4.76	4.90	3.95	4.16	4.12	4.29
2	0	4.62	4.71	4.35	4.84	4.45	4.62	4.60
4	0	4.90	5.27	5.36	5.58	4.43	4.34	4.98
0	1	3.60	4.23	4.22	4.30	4.32	4.33	4.17
1	1	4.70	4.88	5.02	5.35	4.32	4.76	4.84
2	1	4.91	5.14	4.49	5.31	4.68	4.42	4.83
4	1	4.69	5.23	5.01	5.12	4.65	4.55	4.87
Mean		4.14	4.56	4.46	4.64	4.38	4.31	4.41

Mean D.M. %: 61.2

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71/R/AG/6

POTATOES

TOTAL TUBERS: TONNES/HECTARE

Treatment 1848-1951		Plot 5 None	6 None	3 PK	4 PK	1 NPK	2 NPK	Mean
P		Previous cropping 1958-69, Arable or fallow						
1964	1970-71							
0	0	26.6	28.4	31.8	28.8	30.6	24.9	28.5
1	0	29.0	27.7	38.1	33.1	37.9	26.8	32.1
2	0	31.8	33.1	36.2	31.4	34.3	28.6	32.6
4	0	31.8	30.6	38.7	34.7	38.1	34.2	34.7
0	1	37.7	37.4	29.9	28.3	38.1	19.6	31.8
1	1	29.8	31.8	42.7	36.1	40.4	25.0	34.3
2	1	39.6	34.4	47.1	40.5	41.7	36.8	40.0
4	1	41.2	35.7	44.6	38.8	43.6	41.2	40.8
Mean		33.4	32.4	38.6	34.0	38.1	29.6	34.4
P		Previous cropping 1958-69, Grass						
1964-69	1970							
0	0	22.6	16.9	27.9	24.8	46.9	30.5	28.3
1	0	32.5	40.0	33.9	32.2	44.7	40.9	37.4
2	0	40.6	42.5	38.2	40.7	42.4	44.6	41.5
4	0	37.5	35.2	46.2	38.4	39.9	39.4	39.4
0	1	34.6	37.2	43.2	42.4	47.4	45.9	41.8
1	1	39.7	46.2	45.9	36.9	45.9	43.2	43.0
2	1	39.7	42.7	44.1	41.3	48.6	49.8	44.4
4	1	45.9	42.6	49.4	35.4	52.8	47.7	45.6
Mean		36.7	37.9	41.1	36.5	46.1	42.7	40.2

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71/R/AG/6

POTATOES

% WARE: 4.44 CM (1.75 INCH) RIDDLE

Treatment 1848-1951		Plot 5	6	3	4	1	2	Mean
		None		PK		NPK		
P		Previous cropping 1958-69, Arable or fallow						
1964	1970-71							
0	0	57.9	63.6	57.9	67.3	56.6	47.0	58.4
1	0	59.7	59.5	67.2	61.6	62.6	55.7	61.1
2	0	65.7	56.4	49.7	62.0	62.4	58.9	59.2
4	0	53.7	58.1	63.6	70.6	58.9	40.0	57.5
0	1	62.0	68.7	47.1	59.4	61.7	43.1	57.0
1	1	72.2	59.2	66.0	65.7	57.6	41.1	60.3
2	1	62.5	61.6	56.4	72.0	56.9	51.4	60.1
4	1	55.2	76.6	59.1	67.3	52.9	42.0	58.8
Mean		61.1	63.0	58.4	65.7	58.7	47.4	59.0
P		Previous cropping 1958-69, Grass						
1964-69	1970							
0	0	52.3	54.8	63.9	58.9	67.3	59.3	59.4
1	0	61.7	67.5	68.3	59.4	65.7	62.8	64.3
2	0	68.9	70.5	56.4	62.5	61.5	66.1	64.3
4	0	59.6	61.5	72.3	65.2	61.5	61.7	63.6
0	1	59.0	70.1	63.9	76.9	67.9	63.4	66.9
1	1	67.0	63.6	65.0	64.3	64.4	52.5	62.8
2	1	68.9	71.0	58.5	57.3	63.7	55.7	62.5
4	1	65.3	63.5	65.0	49.2	54.9	60.2	59.7
Mean		62.8	65.3	64.2	61.7	63.4	60.2	62.9

https://doi.org/10.23637/ERADOC-1-97

71/R/BN/7

BARNFIELD

Object: Originally studied the effects of organic and inorganic manures on continuous roots. The experiment has been modified to study effects on a four-course rotation and on continuous beans.

The fourth year of new scheme, beans, sugar beet, potatoes.

For previous years see 'Details' 1967, 68/A/5(t), 69/R/BN/7 and 70/R/BN/7(t).

Plot dimensions and areas harvested:
Potatoes and sugar beet (quarter plot): 4.27 x 28.5.
(Strip 1: 2.74 x 28.5). Area harvested: Potatoes - 0.00390, sugar beet, roots - 0.00130, tops - 0.00065.
Beans, Section 1 (half plot): 10.7 x 27.4.
(Strips 1 and 8: 7.01 x 27.4). Area harvested: 0.00878.
Section 2 (half plot): 10.7 x 19.5.
(Strips 1 and 8: 7.01 x 19.5). Area harvested: 0.00624.

Continuous spring beans: Fresh simazine was applied only to the quarter plots which tested simazine residues (1967 - 69) in 1970. There were thus three combinations:-

	1967	1968	1969	1970	1971
(1)	+	-	-	-	-
(2)	+	+	+	-	+
(3)	+	+	+	+	-

+ = simazine, - = no simazine (mechanical cultivation as needed).
On Section 1 treatment (1) was duplicated, Section 2 had only treatments (1) and (3).

Standard applications:
Spring beans: Weedkiller: Paraquat at 0.84 kg ion in 225 l.
Insecticide: Demeton-s-methyl at 245 g in 438 l.
Potatoes: Weedkillers: Paraquat at 0.28 kg ion in 225 l. Linuron at 1.68 kg in 427 l. Fungicide: Mancozeb at 1.35 kg in 438 l.
Sugar beet: Weedkiller: Paraquat at 0.28 kg ion in 225 l.
Insecticide: Demeton-s-methyl at 245 g in 438 l.

Cultivations, etc.: P,K, Na and Mg applied*: 15 Oct, 1970. FYM applied, all plots ploughed: 19 Oct.
Spring beans: Paraquat applied: 11 Sept, 1970. Seed drilled at 224 kg: 4 Mar, 1971. Simazine applied to appropriate quarter plots at 1.12 kg in 225 l: 10 Mar. Insecticide applied: 1 July. Combine harvested: 2 Sept. Variety: Maris Bead.

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Potatoes: Paraquat applied: 19 Sept, 1970. N applied: 31 Mar, 1971. All plots rotary cultivated, strips 1 and 2 twice, potatoes machine planted: 2 Apr. Linuron applied: 15 Apr. Grubbed: 4 June. Rotary ridged: 5 June. Fungicide applied: 23 June, 13 Aug. Haulm destroyed mechanically: 8 Sept. Sprayed with undiluted BOV at 169 l: 17 Sept. Lifted: 23 Sept. Variety: King Edward.

Sugar beet: Paraquat applied: 19 Sept, 1970. N applied: 31 Mar, 1971. Seed drilled at 5.6 kg: 2 Apr. Singled: 1 June. Insecticide applied: 25 June. Lifted: 3 Nov. Variety: Klein E.

* All plots of Strip 5 received extra fertiliser in error - 5.6 kg P.

Erratum to 70/R/BN/7, p.35. Cultivations to spring beans: 'Simazine applied to half plots .....' should be 'Simazine applied to appropriate sub plots.....', simazine was applied to one quarter plot per strip on Section 1 and one half plot on Section 2.

https://doi.org/10.23637/ERADOC-1-97

71/R/BN/7

SUMMARY OF RESULTS

POTATOES

TOTAL TUBERS: TONNES/HECTARE

Strip	N	N	A	AC	C
1	0	22.8	-	-	19.4
	1	-	34.4	22.0	-
	2	45.5	-	-	31.0
	3	-	31.6	31.9	-
2	0	-	15.8	18.4	-
	1	34.0	-	-	33.0
	2	-	30.5	37.3	-
	3	44.1	-	-	48.7
4	0	11.9	-	-	15.4
	1	-	22.8	24.0	-
	2	27.6	-	-	33.2
	3	-	32.7	37.0	-
5	0	10.2	-	-	9.3
	1	-	8.9	8.8	-
	2	16.0	-	-	15.4
	3	-	8.6	9.3	-
6	0	-	11.0	12.8	-
	1	18.4	-	-	19.7
	2	-	23.1	30.6	-
	3	29.6	-	-	29.8
7	0	-	9.1	9.7	-
	1	11.3	-	-	12.7
	2	-	7.9	8.5	-
	3	18.7	-	-	15.8
8	0	-	5.8	6.3	-
	1	9.3	-	-	9.8
	2	-	6.4	6.8	-
	3	17.7	-	-	7.3
9	0			8.4	
	1			17.8	
	2			24.3	
	3			29.7	

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71/R/BN/7

POTATOES

% WARE: 3.81 CM (1.5 INCH) RIDDLE

Strip	N	N	A	AC	C
1	0	65.5	-	-	68.4
	1	-	78.5	64.7	-
	2	80.3	-	-	68.5
	3	-	67.5	61.9	-
2	0	-	62.0	61.9	-
	1	77.3	-	-	67.6
	2	-	71.7	65.7	-
	3	73.7	-	-	70.9
4	0	74.3	-	-	57.4
	1	-	70.3	64.4	-
	2	77.2	-	-	73.5
	3	-	72.5	70.1	-
5	0	73.3	-	-	60.2
	1	-	42.0	45.8	-
	2	73.2	-	-	65.4
	3	-	43.2	46.1	-
6	0	-	63.3	61.3	-
	1	76.6	-	-	70.1
	2	-	68.4	74.1	-
	3	87.3	-	-	81.6
7	0	-	61.0	64.5	-
	1	50.0	-	-	60.9
	2	-	37.9	53.2	-
	3	77.0	-	-	65.6
8	0	-	56.6	59.4	-
	1	78.0	-	-	64.0
	2	-	71.7	45.1	-
	3	85.1	-	-	60.0
9	0			71.3	
	1			82.1	
	2			85.0	
	3			77.0	

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71/R/BN/7

SUGAR BEET

CLEAN BEET: TONNES/HECTARE

Strip	N	N	A	AC	C
1	0	-	34.2	30.9	-
	1	35.4	-	-	48.3
	2	-	49.7	49.1	-
	3	51.8	-	-	44.9
2	0	32.2	-	-	27.4
	1	-	43.7	41.7	-
	2	48.8	-	-	50.0
	3	-	50.9	54.1	-
4	0	-	26.1	25.7	-
	1	32.3	-	-	31.1
	2	-	38.8	35.9	-
	3	49.5	-	-	47.9
5	0	-	28.8	32.8	-
	1	25.4	-	-	29.3
	2	-	36.5	35.4	-
	3	34.2	-	-	43.0
6	0	22.4	-	-	26.8
	1	-	26.8	30.1	-
	2	34.4	-	-	41.4
	3	-	43.4	46.9	-
7	0	11.1	-	-	16.6
	1	-	28.9	32.8	-
	2	36.6	-	-	39.3
	3	-	41.9	42.2	-
8	0	21.5	-	-	18.8
	1	-	21.1	25.4	-
	2	28.5	-	-	33.3
	3	-	30.4	27.2	-

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SUGAR BEET

SUGAR %

Strip	N	N	A	AC	C
1	0	-	18.3	18.0	-
	1	18.2	-	-	17.5
	2	-	17.4	18.4	-
	3	17.4	-	-	17.2
2	0	18.3	-	-	18.2
	1	-	18.1	18.5	-
	2	18.2	-	-	18.6
	3	-	18.4	18.1	-
4	0	-	18.7	18.4	-
	1	19.1	-	-	18.9
	2	-	19.2	19.0	-
	3	18.4	-	-	18.5
5	0	-	18.9	18.5	-
	1	18.3	-	-	18.7
	2	-	18.8	18.5	-
	3	17.5	-	-	18.1
6	0	18.3	-	-	18.3
	1	-	19.4	18.8	-
	2	18.6	-	-	19.0
	3	-	18.7	18.5	-
7	0	18.7	-	-	18.2
	1	-	18.0	19.1	-
	2	18.2	-	-	19.1
	3	-	18.6	18.6	-
8	0	18.6	-	-	18.2
	1	-	19.2	19.0	-
	2	18.3	-	-	17.9
	3	-	17.4	16.8	-

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SUGAR BEET

TOTAL SUGAR: TONNES/HECTARE

Strip	N	N	A	AC	C
1	0	-	6.26	5.55	-
	1	6.47	-	-	8.42
	2	-	8.65	9.03	-
	3	9.02	-	-	7.72
2	0	5.90	-	-	4.98
	1	-	7.92	7.72	-
	2	8.90	-	-	9.27
	3	-	9.35	9.79	-
4	0	-	4.90	4.73	-
	1	6.15	-	-	5.89
	2	-	7.46	6.81	-
	3	9.11	-	-	8.86
5	0	-	5.45	6.07	-
	1	4.66	-	-	5.48
	2	-	6.85	6.55	-
	3	6.00	-	-	7.76
6	0	4.09	-	-	4.90
	1	-	5.19	5.65	-
	2	6.40	-	-	7.87
	3	-	8.11	8.69	-
7	0	2.09	-	-	3.03
	1	-	5.19	6.26	-
	2	6.65	-	-	7.50
	3	-	7.80	7.83	-
8	0	4.00	-	-	3.43
	1	-	4.04	4.84	-
	2	5.21	-	-	5.97
	3	-	5.29	4.57	-

https://doi.org/10.23637/ERADOC-1-97

71/R/BN/7

SUGAR BEET

TOPS: TONNES/HECTARE

Strip	N	N	A	AC	C
1	0	-	14.0	13.3	-
	1	16.7	-	-	24.4
	2	-	32.1	25.8	-
	3	32.8	-	-	32.1
2	0	18.8	-	-	11.9
	1	-	18.1	15.3	-
	2	27.2	-	-	22.3
	3	-	27.2	30.7	-
4	0	-	4.2	4.9	-
	1	7.0	-	-	7.0
	2	-	10.5	16.7	-
	3	18.8	-	-	24.4
5	0	-	4.9	5.6	-
	1	7.7	-	-	10.5
	2	-	16.0	18.8	-
	3	23.0	-	-	20.2
6	0	3.5	-	-	2.8
	1	-	6.3	8.4	-
	2	12.6	-	-	16.0
	3	-	14.0	17.4	-
7	0	3.5	-	-	5.6
	1	-	8.4	9.1	-
	2	15.3	-	-	13.3
	3	-	15.3	18.1	-
8	0	4.9	-	-	4.9
	1	-	9.1	10.5	-
	2	15.3	-	-	18.1
	3	-	22.3	22.3	-

https://doi.org/10.23637/ERADOC-1-97

71/R/BN/7

BEANS

SIMAZINE

Strip	1967*	1967-70	1967-69 & 1971	Mean
	GRAIN: TONNES/HECTARE			
1	1.25	1.40	1.65	1.39
2	1.41	0.99	0.68	1.13
4	1.52	1.26	0.39	1.17
5	1.86	1.43	0.43	1.40
6	1.73	1.46	0.54	1.37
7	1.69	1.98	0.28	1.41
8	1.34	0.80	0.34	0.95
Mean	1.54	1.33	0.62	1.26
	STRAW: TONNES/HECTARE			
1	0.91	1.59	1.14	1.13
2	1.41	1.52	1.07	1.35
4	1.51	1.27	0.31	1.15
5	1.69	1.05	0.23	1.17
6	1.52	1.18	0.39	1.15
7	0.90	1.66	1.39	1.21
8	0.93	0.41	0.20	0.62
Mean	1.27	1.24	0.67	1.11

Mean D.M. %: Grain: 82.1
Straw: 77.8

* Duplicated treatment

https://doi.org/10.23637/ERADOC-1-97

71/R/GC/8

GARDEN CLOVER

Object: To study the effects of nitrogen and magnesium on continuous red clover - **Manor Garden.**

The 118th year, red clover.

For previous years see 'Details' 1967, 68/A/8(t) and 69-70/R/GC/8.

Whole plot dimensions: 2.13 x 3.05. Area harvested: 0.00010.

Cultivations, etc.: Area hand dug, all plants removed: 14 Oct, 1970. Basal PK and test Mg applied: 11 Mar, 1971. Area raked down to seedbed, seed sown at 33.6 kg, test N applied: 2 Apr. Cut, basal K, test N and Mg applied: 15 July. Cut second time, basal K and test N applied: 23 Aug. Cut third time: 6 Oct. Variety: Essex Broad Red.

NOTE: Samples of herbage were taken for determinations of N, P, K, Ca, Na and Mg.

SUMMARY OF RESULTS

DRY MATTER: TONNES/HECTARE

	N0Mg0	N1Mg0	N0Mg1	N1Mg1	Mean
1st cut	1.73	2.89	3.09	3.07	2.70
2nd cut	1.87	2.17	2.74	2.37	2.29
3rd cut	1.14	1.30	1.27	1.37	1.27
Total of 3 cuts	4.74	6.36	7.11	6.81	6.25

Mean D.M. %: 1st cut: 26.0
2nd cut: 12.6
3rd cut: 18.3
Total of 3 cuts: 19.0

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71/S/RN/1

ROTATION I

Object: To compare nutrient cycles, uptakes of nutrients and responses to fresh P and K of lucerne and grass leys. To obtain an estimate of the rate of release of nutrients, particularly K, from Saxmundham soil. The effects of lucerne and grass leys will be compared on subsequent arable crops - Saxmundham.

For previous years see 'Details' 1967, 68/A/9(t) and 69-70/S/RN/1(t).

Whole plot dimensions (new plots): 5.49 x 17.1. Area harvested: Grass: 0.00139, lucerne: 0.00111.

Cultivations, etc.:-

Grass: P and K applied: 21 Jan, 1971. Bonemeal applied: 19 Feb. N applied: 1 Apr. Cut: blocks 1 and 2 - 11 May, 1 July, 6 Oct, blocks 3 and 4 - 18 May, 6 July, 6 Oct. N applied after each cut except the last. Varieties: Timothy (S.352) and Meadow Fescue (S.215).

Lucerne: P and K applied: 21 Jan, 1971. Bonemeal applied: 19 Feb. Cut: 25 May, 27 July, 7 Sept. Variety: Europe.

https://doi.org/10.23637/ERADOC-1-97

'71/S/RN/1

SUMMARY OF RESULTS

OLD TREATMENTS

GRASS, DRY MATTER: TONNES/HECTARE

Treatment 1899-1971	1st cut	2nd cut	3rd cut	Total of 3 cuts
D	4.39	1.27	1.18	6.84
B	2.57	0.93	0.41	3.91
N	3.83	1.94	1.60	7.37
P	1.95	0.96	0.36	3.27
K	1.49	0.83	0.24	2.56
-	1.84	0.84	0.44	3.12
PK	2.18	0.85	0.31	3.34
NK	3.50	1.87	1.92	7.29
NP	3.68	2.40	2.08	8.16
NPK	4.01	2.43	2.15	8.58
Mean	2.94	1.43	1.07	5.44

Mean D.M. %: 1st cut: 26.0
2nd cut: 30.4
3rd cut: 40.6
Total of 3 cuts: 32.3

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NEW TREATMENTS

GRASS, DRY MATTER: TONNES/HECTARE

Treatment 1899-1965	Treatment* from 1966	1st cut	2nd cut	3rd cut	Total of 3 cuts
D	DN1	4.95	3.61	4.72	13.28
B	B	3.81	3.30	4.54	11.65
N	N2P2	4.55	3.49	4.22	12.25
P	N1P1	4.10	3.66	4.39	12.16
K	N1P2K	3.62	3.52	4.20	11.34
-	N1P2	4.57	3.49	4.31	12.36
PK	N1P1K	3.82	3.72	4.15	11.70
NK	N2P2K	4.22	3.47	4.41	12.11
NP	N2P1	4.22	3.39	4.31	11.92
NPK	N2P1K	3.97	3.51	4.39	11.86
Mean		4.18	3.52	4.36	12.06

Mean D.M. %: 1st cut: 23.1
2nd cut: 20.7
3rd cut: 40.0
Total of 3 cuts: 27.9

* N not tested since 1970 - all treatments receive basal N at 100 kg for each cut. FYM last applied autumn 1969.

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NEW TREATMENTS

LUCERNE, DRY MATTER: TONNES/HECTARE

Treatment 1899-1965	Treatment* from 1966	1st cut	2nd cut	3rd cut	Total of 3 cuts
D	DN1	5.74	5.34	3.21	14.30
B	B	4.75	4.86	2.75	12.37
N	N2P2	4.83	4.81	2.75	12.39
P	N1P1	4.89	4.92	2.72	12.53
K	N1P2K	4.88	5.36	2.93	13.17
-	N1P2	5.06	5.17	2.82	13.05
PK	N1P1K	5.08	5.32	2.93	13.33
NK	N2P2K	5.22	5.29	2.93	13.44
NP	N2P1	5.08	4.62	2.74	12.43
NPK	N2P1K	5.25	4.85	3.03	13.13
Mean		5.08	5.05	2.88	13.01

Mean D.M. %: 1st cut: 17.1
2nd cut: 24.7
3rd cut: 22.1
Total of 3 cuts: 21.3

* N not applied since 1970. FYM last applied sutumn 1969.

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71/S/RN/2

ROTATION II

Object: To measure, by crop yields and soil analysis, the residual value of P applied as FYM or superphosphate in the periods 1899 - 1964 and 1965 - 1967 - Saxmundham.

The third year of revised scheme, potatoes, barley, sugar beet.

For previous years see 'Details' 1967, 68/A/10(t), 69/S/RN/2(t) and 70/S/RN/2.

Whole plot dimensions: 3.56 x 5.49. Sub plot area harvested: Potatoes - 0.00078, sugar beet: 0.00100, barley: 0.00050.

Basal applications:-

Potatoes: 251 kg N and 160 kg K2O as (25:0:16). Weedkiller: Linuron at 0.84 kg plus paraquat at 0.84 kg ion in 449 l. Fungicide: Mancozeb at 2.69 kg in 449 l on 5 occasions. Insecticide: Menazon ('Saphicol' at 0.70 l in 449 l) applied with the first four applications of fungicide.

Barley: Manures as previously. Weedkiller: Mecoprop at 2.52 kg plus 2,4-D at 0.63 kg in 225 l.

Sugar beet: 188 kg N and 120 kg K2O as (25:0:16). Insecticides: DDT at 0.34 kg in 281 l on 2 occasions. Menazon ('Saphicol' at 0.70 l in 449 l) on 5 occasions.

Cultivations, etc.:-

Potatoes: Ploughed: 20 Oct, 1970. Test P and basal NK applied, plots rotary cultivated, potatoes planted: 14 Apr, 1971. Weedkiller applied: 11 May. Insecticide and fungicide applied: 17 June, 30 June, 14 July, 27 July. Fungicide applied: 10 Aug. Lifted: 21 Sept. Variety: King Edward.

Barley: Ploughed: 20 Oct, 1970. Seed drilled at 168 kg and basal NK applied: 31 Mar, 1971. Weedkiller applied: 18 May. Harvested by hand: 11 Aug. Variety: Julia.

Sugar beet: Ploughed: 20 Oct, 1970. Test P and basal NK applied, seed drilled: 6 Apr, 1971. DDT applied: 19 May, 3 June. Singled: 28 May. Menazon applied: 17 June, 30 June, 14 July, 27 July, 10 Aug. Lifted: 12 Oct. Variety: Klein E.

https://doi.org/10.23637/ERADOC-1-97

71/S/RN/2

SUMMARY OF RESULTS

POTATOES

TOTAL TUBERS: TONNES/HECTARE

Plot	Treatment 1966 and 1967	1971 P0*	P1	P2	P3	Mean
1	P0	26.0	41.0	38.4	48.5	36.0
2	P0	37.2	44.5	54.6	52.9	45.3
3	P0	50.1	50.0	46.2	50.0	49.3
4	D	45.6	43.9	53.2	58.4	49.3
5	DP1	53.3	48.0	58.1	52.3	53.0
6	P1	54.5	54.6	50.9	50.9	53.1
7	P2	53.9	61.9	49.7	60.7	56.0
8	P0	49.3	50.9	54.9	50.0	50.9
Mean		46.2	49.3	50.8	53.0	49.1

SUGAR BEET

ROOTS (WASHED): TONNES/HECTARE

1	P0	20.3	35.7	41.2	37.7	31.0
2	P0	35.0	38.7	41.0	39.4	37.8
3	P0	43.7	51.2	45.8	45.6	46.0
4	D	45.8	44.8	42.4	47.0	45.2
5	DP1	44.3	50.1	42.2	48.4	45.9
6	P1	45.9	43.1	53.1	53.6	48.3
7	P2	45.1	42.8	49.5	45.4	45.6
8	P0	42.0	41.9	42.3	48.9	43.4
Mean		40.3	43.5	44.7	45.8	42.9

* Duplicated treatment

https://doi.org/10.23637/ERADOC-1-97

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SUGAR BEET

Plot	Treatment 1966 and 1967	1971 P0*	P1	P2	P3	Mean
		SUGAR %				
1	P0	16.0	16.7	16.6	16.9	16.5
2	P0	16.6	16.7	16.8	17.0	16.7
3	P0	17.0	16.7	17.1	17.1	17.0
4	D	17.0	17.0	17.1	16.5	16.9
5	DP1	17.0	16.8	16.9	17.0	16.9
6	P1	16.8	16.9	16.8	16.7	16.8
7	P2	17.0	16.9	17.2	16.5	16.9
8	P0	16.9	16.7	17.0	16.7	16.9
Mean		16.8	16.8	16.9	16.8	16.8
		TOTAL SUGAR: TONNES/HECTARE				
1	P0	3.25	5.94	6.85	6.37	5.14
2	P0	5.80	6.46	6.86	6.68	6.32
3	P0	7.44	8.57	7.82	7.82	7.82
4	D	7.79	7.59	7.22	7.77	7.63
5	DP1	7.53	8.40	7.14	8.21	7.76
6	P1	7.72	7.28	8.93	8.96	8.12
7	P2	7.68	7.24	8.50	7.50	7.72
8	P0	7.11	7.00	7.20	8.16	7.32
Mean		6.79	7.31	7.57	7.68	7.23

* Duplicated treatment

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SUGAR BEET

Plot	Treatment 1966 and 1967	1971 P0*	P1	P2	P3	Mean
		TOPS: TONNES/HECTARE				
1	P0	26.2	38.4	51.3	37.5	35.9
2	P0	39.8	40.2	38.4	45.9	40.8
3	P0	41.7	44.1	42.9	43.6	42.8
4	D	43.5	45.9	40.5	40.5	42.8
5	DP1	47.8	51.1	41.4	41.1	45.8
6	P1	46.3	43.2	49.1	50.0	47.0
7	P2	43.1	46.3	45.0	47.9	45.1
8	P0	50.2	41.4	47.7	48.6	47.6
Mean		42.3	43.8	44.5	44.4	43.5
		PLANT NUMBER: THOUSANDS/HECTARE				
1	P0	80.7	98.7	88.7	101.7	90.1
2	P0	92.2	90.7	99.7	91.7	93.3
3	P0	94.7	100.7	97.7	99.7	97.5
4	D	87.7	82.7	86.7	99.7	88.9
5	DP1	95.7	90.7	84.7	92.7	91.9
6	P1	91.7	90.7	95.7	101.7	94.3
7	P2	84.2	87.7	96.7	76.7	85.9
8	P0	97.2	89.7	90.7	91.7	93.3
Mean		90.5	91.4	92.6	94.4	91.9

* Duplicated treatment

https://doi.org/10.23637/ERADOC-1-97

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BARLEY AFTER POTATOES

Plot	Treatment 1966 and 1967	1970 P0*	P1	P2	P3	Mean
		GRAIN: TONNES/HECTARE				
1	P0	2.40	4.13	3.68	4.27	3.37
2	P0	4.00	4.32	5.00	4.83	4.43
3	P0	4.40	4.51	4.52	4.60	4.49
4	D	4.82	4.79	4.62	4.76	4.76
5	DP1	5.02	5.07	4.76	4.01	4.78
6	P1	5.06	4.82	4.58	4.90	4.89
7	P2	5.00	5.07	4.49	5.16	4.94
8	P0	4.87	4.82	4.94	4.71	4.84
Mean		4.44	4.69	4.57	4.65	4.56
		STRAW: TONNES/HECTARE				
1	P0	2.82	4.42	4.97	4.90	3.99
2	P0	4.95	5.01	5.91	5.89	5.34
3	P0	5.28	5.17	5.06	5.71	5.30
4	D	5.93	5.45	5.75	6.00	5.81
5	DP1	5.65	6.04	5.42	5.48	5.65
6	P1	5.89	5.48	5.50	5.77	5.70
7	P2	5.73	5.46	5.32	5.57	5.56
8	P0	5.44	5.34	5.47	5.25	5.39
Mean		5.21	5.29	5.42	5.57	5.34

Mean D.M. %: Grain: 75.4
Straw: 51.4

* Duplicated treatment

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BARLEY AFTER SUGAR BEET

Plot	Treatment 1966 and 1967	1970 P0*	P1	P2	P3	Mean
		GRAIN: TONNES/HECTARE				
1	P0	1.42	2.80	4.02	4.21	2.77
2	P0	3.76	4.35	4.11	4.22	4.04
3	P0	4.58	4.51	3.56	4.09	4.27
4	D	4.60	4.64	4.98	4.55	4.67
5	DP1	4.77	4.20	5.34	4.65	4.74
6	P1	4.79	4.74	4.98	4.57	4.78
7	P2	4.81	4.81	4.38	4.62	4.69
8	P0	4.41	4.10	5.11	4.78	4.56
Mean		4.14	4.27	4.56	4.46	4.32
		STRAW: TONNES/HECTARE				
1	P0	2.18	3.49	3.99	4.91	3.35
2	P0	4.38	5.15	4.22	4.92	4.61
3	P0	4.73	4.69	5.82	4.50	4.89
4	D	5.49	5.07	5.83	5.16	5.41
5	DP1	5.19	5.00	5.69	5.19	5.25
6	P1	5.22	5.09	5.56	4.72	5.16
7	P2	5.02	5.19	5.10	5.08	5.08
8	P0	4.97	4.66	5.32	4.81	4.94
Mean		4.65	4.79	5.19	4.91	4.84

Mean D.M. %: Grain: 74.6
Straw: 53.5

* Duplicated treatment

https://doi.org/10.23637/ERADOC-1-97