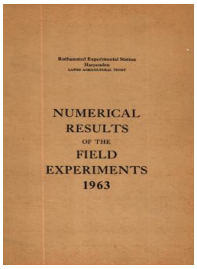
ROTHAMSTED RESEARCH

Yields of the Field Experiments 1963

Full Table of Content



Crop Sequence Experiments - Crops in 1963

Rothamsted Research

Rothamsted Research (1964) *Crop Sequence Experiments - Crops in 1963 ;* Yields Of The Field Experiments 1963, pp 127 - 154 **- DOI: https://doi.org/10.23637/ERADOC-1-183**

63/C/1.1

EFFECT OF K AND Mg

(LM and WAC)

K and Mg - Rothamsted (R) Sawyers I 1963 the fifth year and Woburn (W) Stackyard Series C 1963 the fourth year, - clover (sown in 1962 on both experiments).

Design: Sawyers I (R): 8 randomised blocks of 9 plots each.
Stackyard Series C (W): 4 randomised blocks of 9 plots each.

	Area of each plot (acres):	Area harvested (acres):
Sawyers I (R):	0.0209	0.0045
Stackyard Series C (W):	0.0011	0.0003 - 0.0005

Treatments. All combinations of-:
Mg: None, 29, 58 lb Mg per acre applied as magnesium sulphate on Sawyers I (R) and as kieserite on Stackyard Series C (W).
K: Sawyers I (R): 24, 95, 165 lb K per acre in 1962.
None, 71, 142 lb K per acre in 1963.
Stackyard Series C (W): None, 95, 190 lb K per acre.
All K as sulphate of potash, applied in 1962 and 1963.
In addition in 1962 magnesium-free calcium carbonate was applied to blocks on Sawyers I (R) as in 1959, at 38, 76 cwt per acre.

Basal dressings per acre:
Sawyers I (R): 1.0 cwt P_2O_5 as triple superphosphate applied in seedbed 1962, None in 1963.
Stackyard Series C (W): 1.0 cwt P_2O_5 as triple superphosphate in spring 1963.

Cultivations, etc.:
Sawyers I (R): Magnesium-free calcium carbonate applied: At 30, 60 cwt per acre - Nov 21, 1961, at 8, 16 cwt per acre - Feb 19, 1962. Magnesium sulphate and sulphate of potash applied: Mar 13, 1963. Cut 3 times: June 11, July 29, Sept 26. Variety: Dorset Marl Red Clover.
Stackyard Series C (W): Treatments and basal dressing applied: Mar 21, 1963. Cut 3 times: June 13, July 25, Oct 11. Variety: Dorset Marl Red Clover.

Note: For details of the previous years' results see 'Results of the Field Experiments' 60/C1/3, 61/C/7 and 62/C/6.

Standard errors per plot. Clover, dry matter:

Sawyers I (R)

1st cut:	2.73 cwt per acre	or 8.5% (48 d.f.)
2nd cut:	1.90 cwt per acre	or 9.0% (48 d.f.)
3rd cut:	1.38 cwt per acre	or 18.9% (48 d.f.)
Total of 3 cuts:	4.51 cwt per acre	or 7.4% (48 d.f.)

Stackyard Series C (W)

1st cut:	2.98 cwt per acre	or 10.8% (24 d.f.)
2nd cut:	1.33 cwt per acre	or 9.1% (24 d.f.)
3rd cut:	0.91 cwt per acre	or 9.1% (24 d.f.)
Total of 3 cuts:	3.98 cwt per acre	or 7.6% (24 d.f.)

Summary of Results

Sawyers I (R)

Clover, Dry matter: cwt per acre

K: lb per acre 1962	24	95	165	Mg: lb per acre			
K: lb per acre 1963	None	71	142	None	29	58	Mean
1st cut							
Calcium carbonate cwt per acre		(±0.79)*			(±0.79)*		
38	27.4	34.2	36.3	32.8	33.1	32.0	32.6
76	24.5	34.0	37.3	31.0	32.9	31.9	31.9
Diff.	-2.9	-0.2	+1.0	-1.8	-0.2	-0.1	-0.7
		(±1.12)**			(±1.12)**		
		K: lb per acre			(±0.97)		(±0.56)
		1962	1963				
		24	None	25.1	27.7	25.0	26.0
		95	71	33.8	34.5	34.0	34.1
		165	142	36.8	36.9	36.7	36.8
		Mean (±0.56)		31.9	33.0	31.9	32.3

*For use in horizontal and interaction comparisons only.
** For use only in testing the differences of 2 differences.

Mean dry matter % as cut: 1st cut 19.4

https://doi.org/10.23637/ERADOC-1-183

63/C/1.3

Sawyers I (R)

Clover, Dry matter: cwt per acre

K: lb per acre 1962	24	95	165	Mg: lb per acre			
K: lb per acre 1963	None	71	142	None	29	58	Mean
		2nd cut					
Calcium carbonate cwt per acre		(±0.55)*			(±0.55)*		
38	17.2	22.6	24.7	21.6	21.5	21.4	21.5
76	16.1	21.9	23.9	20.0	21.4	20.5	20.7
Diff.	-1.1	-0.7 (±0.78)**	-0.8	-1.6	-0.1 (±0.78)**	-0.9	-0.8
		K: lb per acre			(±0.67)		(±0.39)
		1962	1963				
		24	None	16.2	17.2	16.5	16.6
		95	71	22.8	21.9	22.2	22.3
		165	142	23.6	25.4	24.1	24.3
		Mean (±0.39)		20.8	21.5	20.9	21.1

* For use in horizontal and interaction comparisons only.
** For use only in testing the difference of 2 differences.

Mean dry matter % as cut: 2nd cut 21.6

https://doi.org/10.23637/ERADOC-1-183

63/C/1.4

Sawyers I (R)

Clover, Dry matter: cwt per acre

K: lb per acre 1962	24	95	165	Mg: lb per acre			
K: lb per acre 1963	None	71	142	None	29	58	Mean
		3rd cut					
Calcium carbonate cwt per acre		(±0.40)*			(±0.40)*		
38	6.6	7.9	8.2	7.8	7.7	7.2	7.5
76	5.0	7.4	8.5	6.7	6.9	7.4	7.0
Diff.	-1.6	-0.5	+0.3	-1.1	-0.8	+0.2	-0.5
		(±0.56)**			(±0.56)**		
	K: lb per acre				(±0.49)		(±0.28)
	1962	1963					
	24	None		5.8	6.1	5.5	5.8
	95	71		7.6	7.6	7.8	7.7
	165	142		8.4	8.1	8.6	8.4
	Mean (±0.28)			7.2	7.3	7.3	7.3

* For use in horizontal and interaction comparisons only.
** For use only in testing the difference of 2 differences.

Mean dry matter % as cut: 3rd cut 16.9

https://doi.org/10.23637/ERADOC-1-183

63/C/1.5

Sawyers I (R)

Clover, Dry matter: cwt per acre

K: lb per acre 1962	24	95	165	Mg: lb per acre			
K: lb per acre 1963	None	71	142	None	29	58	Mean
		Total of 3 cuts					
Calcium carbonate cwt per acre		(±1.30)*			(±1.30)*		
38	51.1	64.7	69.[illegible]	62.2	62.3	60.6	61.7
76	45.7	63.3	69.7	57.7	61.2	59.8	59.6
Diff.	-5.4	-1.4 (±1.84)**	+0.5	-4.5	-1.1 (±1.84)**	-0.8	-2.1
		K: lb per acre			(±1.59)		(±0.92)
		1962	1963				
		24	None	47.1	51.1	47.1	48.4
		95	71	64.1	63.9	64.0	64.0
		165	142	68.7	70.3	69.5	69.5
		Mean (±0.92)		60.0	61.8	60.2	60.6

* For use in horizontal and interaction comparisons only.
** For use only in testing the difference of 2 differences.

Mean dry matter % as cut: Total of 3 cuts 19.3

https://doi.org/10.23637/ERADOC-1-183

63/C/1.6

Stackyard Series C (W)

Clover, Dry matter: cwt per acre

K: lb per acre in 1962 and 1963	Mg: lb per acre None	29	58	Mean	Mg: lb per acre None	29	58	Mean
	1st cut				2nd cut			
		(±1.49)		(±0.85)		(±0.66)		(±0.38)
None	15.6	17.5	17.7	16.9	8.1	8.4	7.8	8.1
95	32.5	32.3	33.4	32.7	17.6	16.6	17.1	17.1
190	31.5	33.3	33.5	32.7	17.4	18.8	19.5	18.6
Mean	26.5	27.7 (±0.85)	28.2	27.5	14.4	14.6 (±0.38)	14.8	14.6
	3rd cut				Total of 3 cuts			
		(±0.45)		(±0.26)		(±1.99)		(±1.15)
None	4.9	3.7	3.9	4.2	28.6	29.5	29.4	29.2
95	10.4	11.6	11.6	11.2	60.5	60.6	62.1	61.0
190	14.6	15.0	14.4	14.7	63.5	67.1	67.4	66.0
Mean	10.0	10.1 (±0.26)	10.0	10.0	50.8	52.4 (±1.15)	53.0	52.1

Mean dry matter % as cut:

1st cut	16.2
2nd cut	16.8
3rd cut	17.8
Total of 3 cuts	16.9

https://doi.org/10.23637/ERADOC-1-183

63/C/2.1

INTENSIVE BARLEY GROWING EXPERIMENT

(IB)

Little Knott I - 1963, the third year

For treatments etc., see 'Numerical Results of the Field Experiments' 61/C/8.

Area of each plot (acres): 0.0212. Area harvested: 0.0139.

Cultivations, etc.: Ploughed: Sept 26, 1962.
Spring beans: Seed placement drilled at 200 lb per acre: Apr 9, 1963. Sprayed with demeton methyl at 6 fluid oz in 40 gallons per acre: June 14. Combine harvested: Oct 3. Variety: Tick 30B.
Oats: Seed combine drilled at 4 bushels per acre: Apr 9, 1963. 'Nitro-Chalk' applied: Apr 18. Sprayed with TBA/MCPA at 4 pints in 40 gallons per acre: May 22. Combine harvested: Sept 9. Variety: Condor.
Spring wheat: Seed combine drilled at 3 bushels per acre: Apr 11, 1963. 'Nitro-Chalk' applied: Apr 18. Sprayed with TBA/MCPA at 4 pints in 40 gallons per acre: May 22. Combine harvested: Sept 12. Variety: Jufy I.
Barley: Seed combine drilled at 2.5 bushels per acre: Apr 9, 1963. 'Nitro-Chalk' applied: Apr 18. Sprayed with TBA/MCPA at 4 pints in 40 gallons per acre: May 22. Combine harvested: Sept 9. Variety: Proctor.
Winter wheat: Seed combine drilled at 2.5 bushels per acre: Oct 31, 1962. 'Nitro-Chalk' applied: Mar 13, 1963. Sprayed with TBA/MCPA at 4 pints in 40 gallons per acre: May 22. Combine harvested: Sept 10. Variety: Cappelle.
Potatoes: Basal compound fertiliser applied: Apr 30, 1963. Potatoes machine planted: May 6. Earthed up: June 26. Sprayed with undiluted BCV at 16 gallons per acre: Sept 14. Lifted: Sept 23. Variety: Majestic.

Notes: (1) Yields were only taken for sequences 1, 4, 7, 8 and 9.
(2) For details of the previous years' results see 'Numerical Results of the Field Experiments' 61/C/8 and 62/C/7.

Standard errors per plot. Grain (at 85% dry matter)
Spring wheat (4 and 8): 1.37 cwt per acre or 4.2% (9 d.f.)
Barley (1 and 7): 2.05 cwt per acre or 5.8% (6 d.f.)

https://doi.org/10.23637/ERADOC-1-183

Summary of Results

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

Winter wheat 9

Crop in 1961 Crop in 1962	Spring wheat Winter wheat				
N: cwt per acre	None	0.3	0.6	0.9	Mean
	19.5	23.8	28.0	30.6	25.5

Mean dry matter % as harvested: 77.2

Spring wheat 4 and 8

Crop in 1961 Crop in 1962	Spring wheat Spring wheat				Beans Oats	
N: cwt per acre	None	0.3	0.6	0.9	0.6	Mean
	22.1	27.4	32.9	30.7	37.6	32.9

Mean dry matter % as harvested: 73.0

Barley 1 and 7

Crop in 1961	Crop in 1962	N: cwt per acre				
		None	0.3	0.6	0.9	Mean
			(±1.45)			(±0.73)
Barley	Barley	26.2	33.3	35.9	39.7	33.7
Oats	Beans	35.0	41.8	40.5	33.1	37.6
Mean (±1.03)		30.6	37.5	38.2	36.4	35.6

Mean dry matter % as harvested: 73.2

https://doi.org/10.23637/ERADOC-1-183

63/C/3.1

LONG TERM LIMING EXPERIMENT - SPRING BEANS 1963

(LL and WLL)

Effect of lime on the yield and composition of crops and on the status of P and K in soils - Rothamsted (R) Sawyers I and Woburn (W) Stackyard Series C 1963, the second year.

Design (each field): 2 randomised blocks of 16 plots each.

Area of each plot (acres): 0.0289. Area harvested: 0.0121.

Treatments. All combinations of:-

Ground chalk (tons per acre): Sawyers I (R): None, 2, 4 applied in March 1962 (0, A and B), 8 (6 in March 1962, 2 in winter 1962 - 63 in divided dressings) (C). Stackyard Series C (W): None, 2 applied in Spring 1962 (0 and A), 4.75 (4 in spring, 0.75 in October 1962) (B), 7.5 (6 in spring, 1.5 in October 1962) (C).

P: None, 0.5 cwt P_2O_5 per acre as superphosphate (cumulative).

K: None, 1.0 cwt K_2O per acre as muriate of potash (cumulative).

The pH ranges between plots after harvest 1962 were as follows:-

Field	Chalk per acre (Spring 1962)	pH range
Sawyers I (R)	None	4.8 - 5.2
	2 tons	6.0 - 6.4
	4 tons	6.8 - 7.2
	6 tons	7.1 - 7.4
Stackyard Series C (W)	None	5.7 - 6.2
	2 tons	6.7 - 7.1
	4 tons	7.1 - 7.4
	6 tons	7.2 - 7.4

Cultivations, etc.

Sawyers I (R): Ground chalk applied at 1 ton per acre to 'C' plots: Dec 4, 1962. Ploughed: Mar 27, 1963. Ground chalk applied at 1 ton per acre to 'C' plots: Apr 1. Superphosphate and muriate of potash applied: Apr 3. Seed drilled at 200 lb per acre: Apr 8. Sprayed with simazine at 1 lb in 40 gallons per acre: Apr 18. Sprayed with demeton-methyl at 6 fluid oz in 40 gallons per acre: June 14. Combine harvested: Oct 18. Variety: Tick 30B. Previous crops: Potatoes and fallow 1960, potatoes and fallow 1961.

Stackyard Series C (W): Ploughed: Oct 12, 1962. Ground chalk applied at 0.75 tons per acre to 'B' plots and at 1.5 tons per acre to 'C' plots: Oct 19. Superphosphate and muriate of potash applied: Mar 13, 1963. Seed drilled at 200 lb per acre: Mar 27. Sprayed with simazine at 1 lb in 40 gallons per acre: Apr 8. Sprayed with demeton-methyl at 6 fluid oz in 40 gallons per acre: June 13. Combine harvested: Sept 21. Variety: Tick 30B. Previous crops: Barley 1960, sugar beet 1961.

Notes: (1) Samples were taken for counts of pods and beans.
(2) For details of the previous year's results see 'Numerical Results of the Field Experiments' 62/C/8.

Standard errors per plot. Grain (at 85% dry matter):
Sawyers I (R) 3.42 cwt per acre or 17.8% (15 d.f.)
Stackyard Series C(W) 2.37 cwt per acre or 15.1% (15 d.f.)

Summary of Results

Sawyers I (R)

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

	Ground chalk: tons per acre				
	None	2	4	8	Mean
Mean (±1.21)	10.7	20.7	23.0	22.5	19.2
P_2O_5: cwt per acre		(±1.71)			
None	10.3	22.5	22.5	21.1	19.1
0.5	11.1	18.8	23.5	23.9	19.3
Diff. (±2.42)	+0.8	-3.7	+1.0	+2.8	+0.2 (±1.21)
K_2O: cwt per acre					
None	10.5	19.1	21.9	20.8	18.0
1.0	11.0	22.3	24.1	24.2	20.4
Diff. (±2.42)	+0.5	+3.2	+2.2	+3.4	+2.4 (±1.21)

	P_2O_5: cwt per acre	
	None	0.5
K_2O cwt per acre	(±1.21)	
None	18.4	17.7
1.0	19.8	20.9

Mean dry matter % as harvested: 68.7

https://doi.org/10.23637/ERADOC-1-183

63/C/3.3

Sawyers I (R)

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

	Ground chalk: tons per acre				
	None	2	4	8	Mean
Mean	7.6	14.1	17.3	14.8	13.5
P_2O_5: cwt per are					
None	7.3	14.4	17.0	14.2	13.2
0.5	7.9	13.8	17.6	15.4	13.7
Diff.	+0.6	-0.6	+0.6	+1.2	+0.5
K_2O: cwt per acre					
None	7.4	13.1	15.4	11.8	11.9
1.0	7.8	15.1	19.2	17.9	15.0
Diff.	+0.4	+2.0	+3.8	+6.1	+3.1

	P_2O_5: cwt per acre	
	None	0.5
K_2O: cwt per acre		
None	12.0	11.8
1.0	14.4	15.6

Mean dry matter % as harvested: 46.2

https://doi.org/10.23637/ERADOC-1-183

63/C/3.4

Stackyard Series C (W)

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

	Ground chalk: tons per acre				
	None	2.00	4.75	7.50	Mean
Mean (±0.84)	12.4	17.5	16.5	16.5	15.7
P_2O_5: cwt per acre		(±1.18)			
None	11.2	15.8	17.0	15.4	14.9
0.5	13.7	19.2	16.0	17.7	16.6
Diff. (±1.68)	+2.5	+3.4	-1.0	+2.3	+1.7 (±0.84)
K_2O: cwt per acre					
None	11.6	14.3	14.7	15.2	13.9
1.0	13.3	20.7	18.3	17.9	17.5
Diff. (±1.68)	+1.7	+6.4	+3.6	+2.7	+3.6 (±0.84)

	P_2O_5: cwt per acre	
	None	0.5
K_2O: cwt per acre	(±0.84)	
None	13.4	14.5
1.0	16.4	18.7

Mean dry matter % as harvested: 76.5

https://doi.org/10.23637/ERADOC-1-183

63/C/4.1

METHODS OF APPLICATION OF FERTILISER 1962 - 63

(AN)

Methods of application of fertiliser - Great Knott I 1963, the second year - Winter wheat.

Design: 3 x 3 x 3 in 3 blocks of 9 plots each together with 3 additional plots per block.

Area of each plot: 0.0199 acres. Area harvested: 0.0129 acres.

Treatments:

3 x 3 x 3: All combinations of:

To wheat 1963. NPK: None (F0), 0.66 (F1), 1.32 (F2) cwt N per acre as spring top dressings of 'Nitro-Chalk', each with superphosphate and muriate of potash applied in autumn in the seedbed in the proportion 13 N, 13 P_2O_5, 20 K_2O.

To potatoes 1962:

Levels of compound fertiliser (13% N, 13% P_2O_5, 20% K_2O) to supply (cwt per acre):

N	P_2O_5	K_2O	
0.66	0.66	1.02	(1)
1.32	1.32	2.03	(2)
2.00	2.00	3.07	(3)

Methods of application: Broadcast (B), placed (P), broadcast and rotary cultivated in (BR).

Additional plots:

To wheat 1963. NPK: F0, F1, F2 as above to plots receiving no treatment in 1962.

Basal dressing: None.

Cultivations, etc.: Chisel ploughed: Oct 29, 1962. PK applied, seed drilled at 3 bushels per acre: Nov 14. 'Nitro-Chalk' applied - 1st half dressing: Apr 24, 1963, 2nd half dressing: May 9. Sprayed with mecoprop/2,4-D at 7 pints in 40 gallons per acre: May 17. Combine harvested: Sept 10. Variety: Cappelle. Previous crops: Barley 1961, potatoes 1962.

Note: For details of the previous year's results see 'The Numerical Results of the Field Experiments' 62/C/9.

Standard error per plot. Winter wheat:

Grain (at 85% dry matter): 3.97 cwt per acre or 10.6% (18 d.f.)

https://doi.org/10.23637/ERADOC-1-183

Summary of Results

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

NPK 1963	Method of application of compound fertiliser to potatoes 1962			Levels of compound fertiliser to potatoes 1962			Mean
	B	P	BR	1	2	3	
	(±2.29)			(±2.29)			(±1.32)
F0	33.1	34.1	32.5	28.4	32.2	39.1	33.2
F1	38.4	38.7	40.9	38.9	39.4	39.8	39.3
F2	45.7	45.3	40.1	40.5	45.2	45.5	43.7
					(±2.29)		
		B		37.4	40.0	39.8	39.1
		P		34.6	37.7	45.7	39.4
		BR		35.7	39.0	38.8	37.8
		Mean (±1.32)		35.9	38.9	41.5	38.8 (±0.76)

Plots untreated in 1962

NPK 1963 F0	NPK 1963 F1	NPK 1963 F2	Mean
26.1	34.3 (±2.29)	39.9	33.4 (±1.32)

General mean: 37.5

Mean dry matter % as harvested: 78.5

For explanation of treatment symbols see 63/C/4.1

63/C/4.3

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

NPK 1963	Method of application of compound fertiliser to potatoes 1962			Levels of compound fertiliser to potatoes 1962			Mean
	B	P	BR	1	2	3	
F0	15.2	17.3	15.6	14.1	15.4	18.6	16.0
F1	28.2	23.2	23.1	24.8	28.4	21.2	24.8
F2	24.7	29.2	26.0	27.1	28.4	24.4	26.6
		B		25.2	23.5	19.3	22.7
		P		22.0	25.8	21.9	23.2
		BR		18.7	23.0	23.0	21.6
		Mean		22.0	24.1	21.4	22.5

Plots untreated in 1962

NPK 1963 F0	NPK 1963 F1	NPK 1963 F2	Mean
13.2	22.6	26.3	20.7

General mean: 22.0

Mean dry matter % as harvested: 63.8

For explanation of treatment symbols see 63/C/4.1

METHODS OF APPLICATION OF FERTILISER 1963 - 64.

(AR)

Methods of application of fertiliser - Great Knott II 1963, the first year - potatoes.

Design: 3 randomised blocks of 12 plots each.

Area of each plot: 0.0212 acres. Area harvested: 0.0133 acres.

Treatments. None (0) (3 plots per block), and all combinations of:-
Levels of compound fertiliser (13% N, 13% P_2O_5, 20% K_2O) to supply (cwt per acre):-

N	P_2O_5	K_2O	
0.66	0.66	1.02	(1)
1.32	1.32	2.03	(2)
2.00	2.00	3.07	(3)

Methods of application: Broadcast (B), placed (P), broadcast and rotary cultivated in (BR).

Note: The experiment is designed to include an additional factor applied to the 1964 wheat crop, viz. PK broadcast on seedbed and 'Nitro-Chalk' as spring top dressing to supply:-
N, P_2O_5 and K_2O at levels as (0), (1), (2) above.

Basal dressing: None.

Cultivations, etc.: Ploughed: Mar 28 - Apr 10, 1963. Rotary cultivated, potatoes planted: May 7. Earthed up: June 27. Sprayed with maneb at 1.2 lb in 20 gallons per acre: July 10. Sprayed with copper fungicide at 2.3 lb copper in 20 gallons per acre: July 29, and again at the same rate plus 0.35 pint menazon per acre: Aug 15. Sprayed with undiluted BOV at 16 gallons per acre: Sept 23. Lifted: Oct 21. Variety: King Edward. Previous crops: Barley 1961, spring beans 1962.

Standard error per plot.
Total tubers: 0.786 tons per acre or 7.3% (24 d.f.)

Erratum to 'Numerical Results of the Field Experiments' 1962 page 62/C/9.1, 'Total tubers: tons per acre'. Delete the standard error '(±0.181)' under the general mean.

https://doi.org/10.23637/ERADOC-1-183

63/C/5.2

Summary of Results

Method of application of fertiliser	Level of compound fertiliser 0	1	2	3	Mean
Total tubers: tons per acre					
		(±0.454)			(±0.262)
Broadcast		10.86	12.40	13.10	12.12
Placed		10.08	11.93	13.83	11.95
Broadcast and rotovated in		9.51	12.42	13.98	11.97
Mean (±0.262)	7.23	10.15	12.25	13.64	10.81*
Percentage ware (1.5 inch riddle)					
Broadcast		96.3	94.8	95.3	95.5
Placed		93.4	94.1	93.7	93.7
Broadcast and rotovated in		95.4	95.8	95.6	95.6
Mean	93.8	95.1	94.9	94.9	94.6*

Level of compound fertiliser

	cwt per acre N	P_2O_5	K_2O
(0)		None	
(1)	0.66	0.66	1.02
(2)	1.32	1.32	2.03
(3)	2.00	2.00	3.07

* General mean

https://doi.org/10.23637/ERADOC-1-183

63/C/6.1

EFFECT OF SUBSOILING

(WAW)

Woburn Roadpiece and Great Hill. Test crops, Roadpiece: early potatoes, Great Hill: barley - the second year 1963.

Design: 3 randomised blocks of 2 plots each.

Area of each plot (acres):		Area harvested (acres):
Roadpiece:	0.0810	0.0180
Great Hill:	0.0762	0.0579

Treatments: None, subsoiled in October 1961, 7 strokes per plot, 3 feet apart, 18 inches deep.

Basal dressings per acre:
Roadpiece: 8 cwt compound fertiliser, 17% N, 11% P_2O_5, 22% K_2O.
Great Hill: 3 cwt compound fertiliser, 21% N, 14% P_2O_5, 14% K_2O combine drilled.

Cultivations, etc.:
Roadpiece: Ploughed: Sept 17 - Oct 17, 1962. Basal dressing applied: Apr 11, 1963. Potatoes machine planted: Apr 19. Earthed up: June 15. Haulm destroyed mechanically: July 23. Lifted: July 24. Variety: Arran Pilot.
Great Hill: Ploughed: Nov 12, 1962. Seed drilled at 2 bushels per acre: Apr 8, 1963. Combine harvested: Sept 9. Variety: Proctor.

Previous crops:-
Roadpiece: Spring wheat 1961, barley, spring wheat and sugar beet 1962.
Great Hill: Spring wheat and barley 1961, spring wheat, barley and sugar beet 1962.

Note: For the previous year's results see 'Numerical Results of the Field Experiments' 62/C/10.

https://doi.org/10.23637/ERADOC-1-183

63/C/6.2

Summary of Results

Treatment: None	Subsoiled	Mean
Roadpiece		
Early Potatoes, total tubers: tons per acre		
8.76	9.19	8.98
Great Hill		
Barley, Grain (at 85% dry matter): cwt per acre		
21.3	22.5	21.9

Mean dry matter % as harvested: 79.2

63/C/7.1

GRASS

(AF)

Levels of N and K - Harwoods Piece 1963, the 6th year.

Design: 4 randomised blocks of 12 plots each.

Area of each plot: 0.0087 acres. Area harvested: 0.0059 acres.

Treatments: None and all combinations of:-
Nitrogen: 0.3, 0.6, 0.9 cwt N per acre as 'Nitro-Chalk'.
Potash: None, 0.3, 0.6 cwt K_2O per acre as muriate of potash.
All the above in the presence of 0.6 cwt P_2O_5 per acre as superphosphate.
In addition 2 plots per block, receiving 0.9 cwt N and 0.6 cwt K_2O per acre, also received phosphate at either None or 1.2 cwt P_2O_5 per acre as superphosphate.

Note: (1) N and K dressings are applied for each cut. All P dressings are applied once annually.
(2) All treatments were applied to the same plots as in the previous seasons.

Basal dressing: None.

Cultivations, etc.: P and first dressings of N and K applied: Apr 4, 1963. Cut four times: May 29, July 16, Aug 22, Oct 29.
Variety: S37 Cocksfoot.

Note: For details of the previous years' results see 'Results of the Field Experiments' 58/Cg/2, 59/Cg/2, 60/C1/1, 61/Dg/1 and 62/C/11.

Standard errors per plot. Dry matter:

1st cut:	2.99 cwt per acre or 6.7%	(33 d.f.)
2nd cut:	2.65 cwt per acre or 8.5%	(33 d.f.)
3rd cut:	1.40 cwt per acre or 10.0%	(33 d.f.)
4th cut:	1.25 cwt per acre or 7.4%	(33 d.f.)
Total of 4 cuts:	5.76 cwt per acre or 5.4%	(33 d.f.)

Summary of Results

Dry matter: cwt per acre

cwt per acre N* P_2O_5 K_2O*	0.0 0.6 0.0	0.3 0.6 0.0	0.3 0.6 0.3	0.3 0.6 0.6	0.6 0.6 0.0	0.6 0.6 0.3	0.6 0.6 0.6	0.9 0.6 0.0	0.9 0.6 0.3	0.9 0.6 0.6	0.9 0.0 0.6	0.9 1.2 0.6	Mean
1st cut (±1.49)	14.0	37.0	39.1	36.9	43.4	51.3	53.8	44.9	52.0	55.1	53.1	55.1	44.6
2nd cut (±1.33)	9.2	25.6	27.0	27.4	29.6	34.0	37.7	30.5	35.8	40.5	38.9	40.1	31.3
3rd cut (±0.70)	3.6	13.4	14.4	14.4	13.8	17.2	17.4	13.7	16.0	14.1	15.9	15.0	14.1
4th cut (±0.63)	1.4	11.1	11.6	11.4	16.7	19.9	19.4	18.8	24.0	22.6	23.1	22.8	16.9
Total of 4 cuts (±2.88)	28.2	87.0	92.0	90.1	103.5	122.4	128.3	107.8	127.7	132.2	130.9	133.0	106.9

*For each cut

Mean dry matter % as harvested:
1st cut: 19.2
2nd cut: 18.4
3rd cut: 16.5
4th cut: 21.3
Total of 4 cuts: 18.8

63/C/7.2

DECLINE OF TAKE-ALL

(AO)

The effect of crop sequences on the decline of take-all (Ophiobolus graminis) - Great Field I 1963, the first year.

Design: 3 randomised blocks of 6 plots each (5 of winter wheat, 1 of oats), using the plots of Series III of the Cereals and Beans Rotations Experiment (see 'Numerical Results of the Field Experiments' 51/C/1).

Area of each plot: 0.0305 acres. Area harvested: 0.0200 acres.

Treatments: Crop sequences:-

	1959	1960	1961	1962	1963	1964	1965	1966
1	W	W	WS	W	W	W	W	W
2	W	O	Be	W	W	W	W	W
3	WS	W	WS	W	O	W	W	W
4	B	W	B	W	W	W	O	W
5	W	O	WS	W	W	W	W	W
6	O	W	WS	W	W	O	W	W

O = Oats, Be = Spring beans, WS = Spring wheat, W = Winter wheat, B = Barley.

Basal dressings per acre: 2.5 cwt compound fertiliser (20% P_2O_5, 20% K_2O) combine drilled. 1.0 cwt N to wheat and 0.4 cwt N to oats applied in spring as 'Nitro-Chalk'.

Cultivations, etc.: Ploughed: Oct 29, 1962. Winter wheat drilled at 2.5 bushels per acre: Nov 14. 'Nitro-Chalk' applied to winter wheat: Mar 25, 1963. Oats drilled at 4 bushels per acre, 'Nitro-Chalk' applied to oats: Apr 9. Winter wheat sprayed with mecoprop/2,4-D at 7 pints in 40 gallons per acre: May 16. Oats sprayed with MCPA/dichlorprop at 3.2 pints in 40 gallons per acre: May 27. Combine harvested: Sept 10. Varieties: winter wheat - Cappelle, oats - Condor.

Notes: (1) Yields were only taken for winter wheat.
(2) Estimates were made on 5 occasions of the incidence of take-all on wheat.

Standard error per plot. Winter wheat.
Grain (at 85% dry matter): 1.91 cwt per acre or 7.3% (8 d.f.)

https://doi.org/10.23637/ERADOC-1-183

63/C/8.2

Summary of Results

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

Crop in 1959	W	O	W	B	W	
1960	W	W	O	W	O	
1961	WS	WS	WS	B	Be	
1962	W	W	W	W	W	Mean
	28.1	27.0	24.4	25.9	25.5	26.2
			(±1.10)			

Mean dry matter % as harvested: 81.4

63/C/9

CHEMICAL CONTROL OF TAKE-ALL

(AP)

The chemical control of take-all (Ophiobolus graminis) in winter wheat - Highfield Drive 1963, the first year.

Design: 3 randomised blocks of 5 plots each.

Area of each plot: 0.0072 acres.

Treatments: None (3 plots per block*), sprayed with heptachlor at 4 lb in 70 gallons per acre (H4), at 8 lb in 140 gallons per acre (H8).

*2 of these will be treated with heptachlor in 1964.

Basal dressings per acre: 2.5 cwt compound fertiliser (20% P_2O_5, 20% K_2O) combine drilled. 1 cwt N as 'Nitro-Chalk' applied as spring top dressing.

Cultivations, etc.: Ploughed: Sept 4, 1962. Ground chalk applied at 25 cwt per acre: Oct 17. Heptachlor treatments applied, all plots rotary cultivated: Oct 23. Seed drilled at 2.5 bushels per acre: Nov 13. 'Nitro-Chalk' applied: Apr 26, 1963. Sprayed with TBA/MCPA at 4 pints in 40 gallons per acre: May 22. Combine harvested: Sept 10. Variety: Cappelle. Previous crops: Barley 1961, barley 1962.

Note: Estimates were made of the incidence of take-all on 3 occasions.

Standard error per plot.
Grain (at 85% dry matter): 2.40 cwt per acre or 9.4% (10 d.f.)

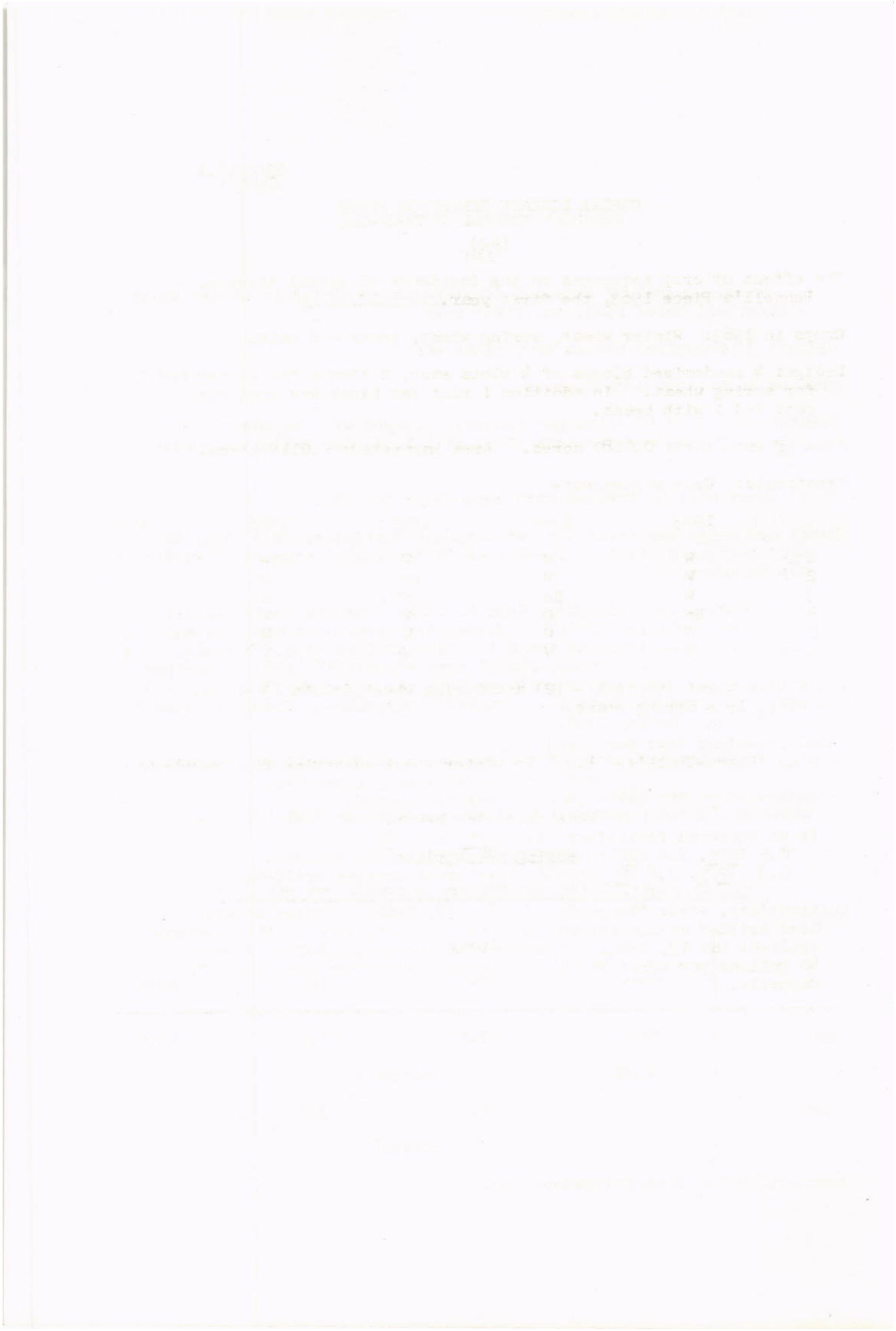
Summary of Results

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

	Spray			
	None	H4	H8	Mean
Mean	24.5	27.2	27.5	25.6
	(±0.80)	(±1.39)		
Increase		2.7	3.0	
		(±1.60)		

Mean dry matter % as harvested: 79.1

https://doi.org/10.23637/ERADOC-1-183



63/C/10.1

CEREAL DISEASE REFERENCE PLOTS

(AQ)

The effect of crop sequences on the incidence of cereal diseases - Pennell's Piece 1963, the first year.

Crops in 1963: Winter wheat, spring wheat, beans and oats.

Design: 4 randomised blocks of 4 plots each, 2 blocks for winter and 2 for spring wheat. In addition 1 plot per block was sown with oats and 1 with beans.

Area of each plot: 0.0180 acres. Area harvested: 0.0119 acres.

Treatments: Crop sequences:-

	1963	1964	1965	1966	1967
1	W	W	W	Be	O
2	W	W	Be	O	W
3	W	Be	O	W	W
4	Be	O	W	W	W
5	O	W	W	W	Be
6	W	W	W	W	W

W = Winter wheat (plots 1 - 12) and Spring wheat (plots 13 - 24),
O = Oats, Be = Spring beans.

Basal dressings (cwt per acre):
N as 'Nitro-Chalk':- 1.0 N to winter wheat as spring top dressing.
0.6 N to spring wheat in seedbed.
0.4 N to oats in seedbed.
None to spring beans.
PK as compound fertiliser (14% P_2O_5, 28% K_2O):-
0.5 P_2O_5, 1.0 K_2O to spring beans placement drilled.
0.3 P_2O_5, 0.6 K_2O to all other crops combine drilled.

Cultivations, etc.: Ploughed: Oct 18 - 26, 1962. Winter wheat:- Seed drilled at 2.5 bushels per acre: Oct 31, 1962. 'Nitro-Chalk' applied: Mar 13, 1963. Sprayed with mecoprop/2,4-D at 7 pints in 40 gallons per acre: May 16. Combine harvested: Sept 10. Variety: Cappelle.

https://doi.org/10.23637/ERADOC-1-183

Spring wheat: Seed drilled at 3 bushels per acre: Apr 11, 1963. 'Nitro-Chalk' applied: Apr 18. Sprayed with methoxychlorobenzoic acid/MCPA (MBA/MCPA) at 4 pints in 40 gallons per acre: June 6. Combine harvested: Sept 12. Variety: Jufy I.

Oats: Seed drilled at 4 bushels per acre: Apr 9, 1963. 'Nitro-Chalk' applied: Apr 18. Sprayed with methoxychlorobenzoic acid/MCPA (MBA/MCPA) at 4 pints in 40 gallons per acre: June 6. Combine harvested: Sept 9. Variety: Condor.

Spring beans: Seed drilled at 200 lb per acre: Apr 9, 1963. Sprayed with demeton-methyl at 6 fluid oz in 40 gallons per acre: June 14. Combine harvested: Oct 3. Variety: Tick 30B.

Previous crops: Sugar beet 1961, spring wheat 1962.

Note: (1) Yields were only taken for winter and spring wheat.
(2) Estimates of the incidence of take-all (*Ophiobulus graminis*), eyespot (*Cercosporella herpotrichoides*) and sharp eyespot (*Corticium solani*) were made on 4 occasions for winter and 2 for spring wheat.

Standard errors per plot. Grain (at 85% dry matter):
Winter wheat: 7.72 cwt per acre or 24.2% (6 d.f.)
Spring wheat: 2.80 cwt per acre or 8.7% (6 d.f.)

Summary of Results

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

Winter wheat	Spring wheat
31.9	32.3
(±2.73)	(±0.99)

Mean dry matter % as harvested: Winter wheat 78.6
Spring wheat 73.1

https://doi.org/10.23637/ERADOC-1-183