

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



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

(IM 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_{205} as triple superphosphate applied in seedbed 1962, None in 1963.

Stackyard Series C (W): 1.0 cwt P_{205} 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.

63/C/1.2

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

Calcium carbonate cwt per acre	1st cut						
	(± 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

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

	<u>2nd cut</u>						
Calcium carbonate cwt per acre	$(\pm 0.55)^*$			$(\pm 0.55)^*$			
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	-0.8	-1.6	-0.1	-0.9	-0.8
		$(\pm 0.78)^{**}$			$(\pm 0.78)^{**}$		

	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

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

Calcium carbonate cwt per acre	<u>3rd cut</u>						
	$(\pm 0.40)^*$			$(\pm 0.40)^*$			
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 $(\pm 0.56)^{**}$	+0.3	-1.1	-0.8 $(\pm 0.56)^{**}$	+0.2	-0.5
	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

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

Calcium carbonate cwt per acre	<u>Total of 3 cuts</u>						
	(± 1.30)*			(± 1.30)*			
38	51.1	64.7	69.0	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	+0.5	-4.5	-1.1	-0.8	-2.1
		(± 1.84)**			(± 1.84)**		
		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

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			Mean	Mg: lb per acre			Mean
	None	29	58		None	29	58	
	<u>1st cut</u>				<u>2nd cut</u>			
	(± 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
	<u>3rd cut</u>				<u>Total of 3 cuts</u>			
	(± 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

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 BOV 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.)

63/c/2.2

Summary of Results

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

Winter wheat 9

Crop in 1961 Crop in 1962	Spring wheat Winter wheat				Mean
	None	0.3	0.6	0.9	
N: cwt per acre	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	Mean
	None	0.3	0.6	0.9	0.6	
N: cwt per acre	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 1962	N: cwt per acre				Mean
	None	0.3	0.6	0.9	
	(±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

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 (O, 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 (O 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.

63/C/3.2

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				Mean
	None	2	4	8	
Mean (± 1.21)	10.7	20.7	23.0	22.5	19.2
P ₂₀ : 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 ₂₀ : 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 ₂₀ : cwt per acre				
	None	0.5			
	(± 1.21)				
K ₂₀ cwt per acre					
None	18.4	17.7			
1.0	19.8	20.9			

Mean dry matter % as harvested: 68.7

63/C/3.3

Sawyers I (R)

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

	Ground chalk: tons per acre				Mean
	None	2	4	8	
Mean	7.6	14.1	17.3	14.8	13.5
<u>P205</u> : cwt per acre					
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
<u>K20</u> : 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
	<u>P205</u> : cwt per acre	None	0.5		
<u>K20</u> : cwt per acre					
None	12.0	11.8			
1.0	14.4	15.6			

Mean dry matter % as harvested: 46.2

63/c/3.4

Stackyard Series C (W)

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

	Ground chalk: tons per acre				Mean
	None	2.00	4.75	7.50	
Mean (± 0.84)	12.4	17.5	16.5	16.5	15.7
P ₂₀₅ : 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 ₂₀ : 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 ₂₀₅ : cwt per acre				
	None	0.5			
K ₂₀ : cwt per acre	(± 0.84)				
None	13.4	14.5			
1.0	16.4	18.7			

Mean dry matter % as harvested: 76.5

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 P₂O₅, 20 K₂O.

To potatoes 1962:

Levels of compound fertiliser (13% N, 13% P₂O₅, 20% K₂O) to supply (cwt per acre):

N	<u>P₂O₅</u>	<u>K₂O</u>	
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.)

63/C/4.2

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)
FO	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
		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

FO	NPK 1963		Mean
	F1	F2	
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	
FO	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

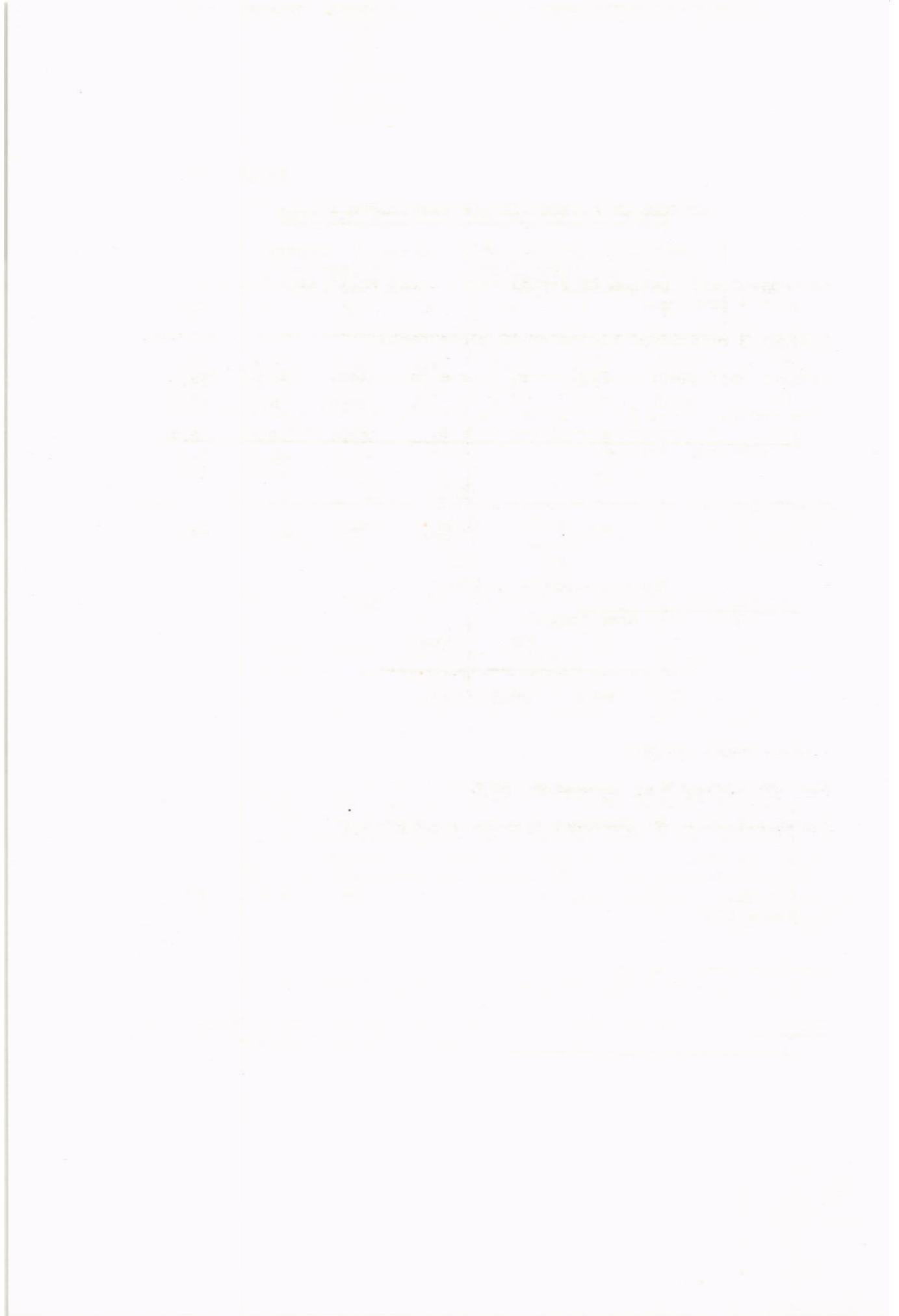
Plots untreated in 1962

FO	NPK 1963		Mean
	F1	F2	
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



63/c/5.1

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% P₂O₅, 20% K₂O) to supply (cwt per acre):-

N	P ₂ O ₅	K ₂ O	
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, P₂O₅ and K₂O 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.

63/C/5.2

Summary of Results

Method of application of fertiliser	Level of compound fertiliser				Mean
	0	1	2	3	
<u>Total tubers: tons per acre</u>					
		(±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 ₂ O ₅	K ₂ O
(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

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.

63/c/6.2

Summary of Results

Treatment		
None	Subsoiled	Mean
<u>Roadpiece</u>		
<u>Early Potatoes, total tubers: tons per acre</u>		
8.76	9.19	8.98
<u>Great Hill</u>		
<u>Barley, Grain (at 85% dry matter): cwt per acre</u>		
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 K₂O per acre as muriate of potash.

All the above in the presence of 0.6 cwt P₂O₅ per acre as super-phosphate.

In addition 2 plots per block, receiving 0.9 cwt N and 0.6 cwt K₂O per acre, also received phosphate at either None or 1.2 cwt P₂O₅ 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	0.0	0.3	0.3	0.3	0.3	0.6	0.6	0.6	0.6	0.6	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	Mean
N*	14.0	37.0	39.1	36.9	43.4	51.3	53.8	44.9	52.0	55.1	53.1	55.1	55.1	55.1	55.1	55.1	55.1	55.1	44.6
P205	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	31.3
K20*	0.0	0.0	0.3	0.6	0.0	0.3	0.6	0.0	0.3	0.6	0.0	0.3	0.6	0.0	0.3	0.6	0.0	0.3	14.1
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	55.1	55.1	55.1	55.1	55.1	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	40.1	40.1	40.1	40.1	40.1	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	15.0	15.0	15.0	15.0	15.0	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	22.8	22.8	22.8	22.8	22.8	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	133.0	133.0	133.0	133.0	133.0	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

63/c/8.1

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' 61/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% P₂O₅, 20% K₂O) 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.)

63/c/8.2

Summary of Results

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

Crop in	W	O	W	B	W	Mean
1959	W	W	O	W	O	
1960	WS	WS	WS	B	Be	
1961	W	W	W	W	W	
1962						
	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% P₂O₅, 20% K₂O) 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.

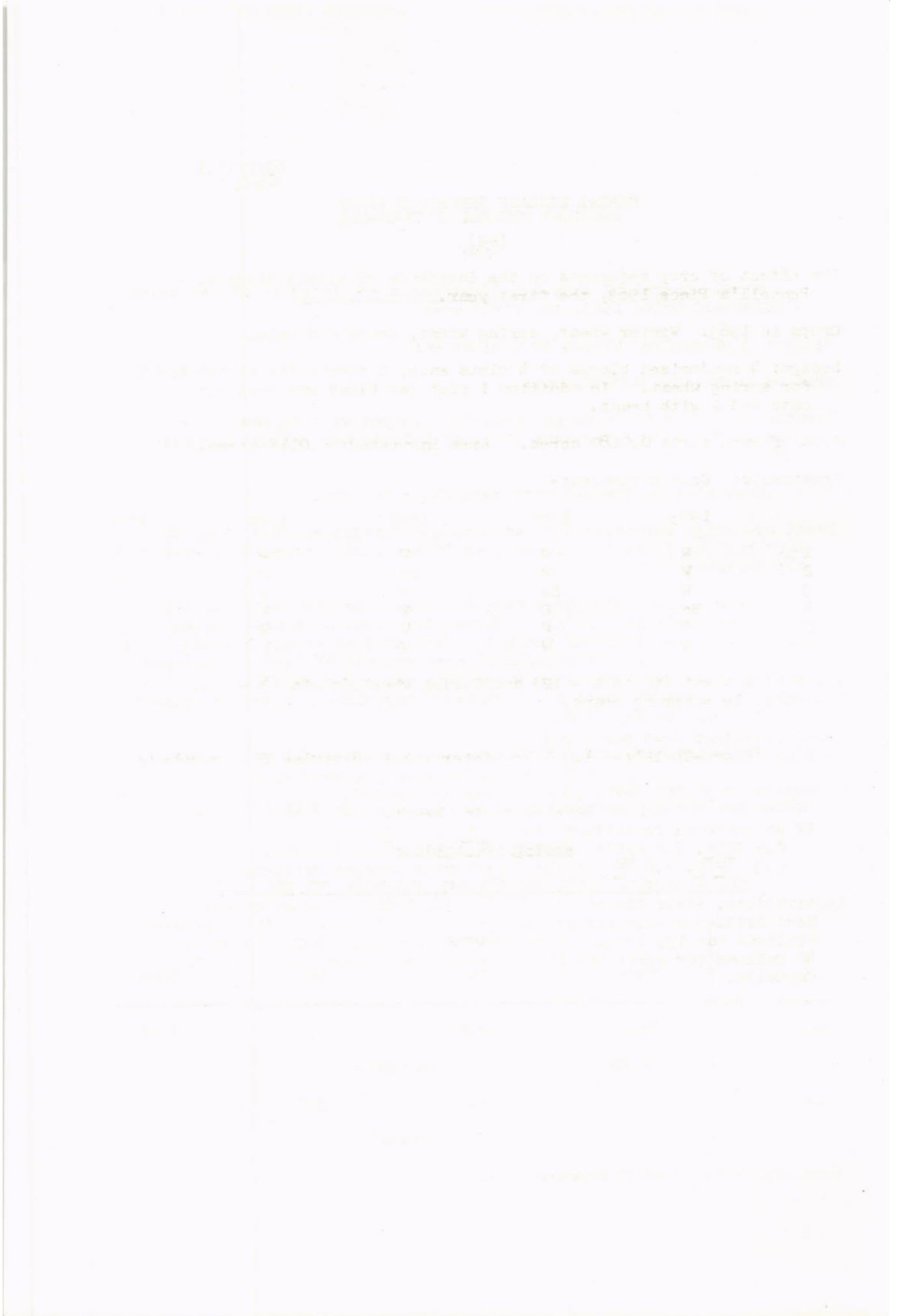
Grain (at 85% dry matter): 2.40 cwt per acre or 9.4% (10 d.f.)

Summary of Results

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

	Spray			Mean
	None	H4	H8	
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



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.

63/c/10.2

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 (Ophiobolus graminis), eyespot (Cercospora 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