

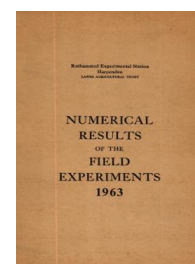
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63/R/LM/C/1 and 63/W/WAC/C/1 Effect of K and Mg - Clover

Rothamsted Research

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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_{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

	<u>1st cut</u>						
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 (± 1.12)**	+1.0	-1.8	-0.2 (± 1.12)**	-0.1	-0.7

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

Sawyers I (R)

63/c/1.3

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 $(\pm 0.78)^{**}$	-0.8	-1.6	-0.1 $(\pm 0.78)^{**}$	-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

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

Total of 3 cuts

Calcium carbonate cwt per acre	(±1.30)*			(±1.30)*			
38	51.1	64.7	69.2	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

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