ROTHAMSTED RESEARCH

Yields of the Field Experiments 1961

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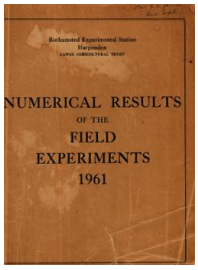

61/R/C/7 and 61/W/C/7 Effect of K, Mg and Ca - Ryegrass 3rd Year

Rothamsted Research

Rothamsted Research (1962) *61/R/C/7 and 61/W/C/7 Effect of K, Mg and Ca - Ryegrass 3rd Year ;* Yields Of The Field Experiments 1961, pp 101 - 104 **- DOI: https://doi.org/10.23637/ERADOC-1-182**

61/C/7.1

GRASS

K and Mg - Rothamsted (R) Sawyers I 1961 the third year and Woburn (W) Stackyard Series C 1961 the second year.

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	0.0050
Stackyard Series C (W):	0.0011	0.0005

Treatments (applied 1959, 1960 and 1961). All combinations of:-
Mg: None; 29; 58 lb Mg per acre applied as magnesium sulphate on Sawyers I (R) and as kieserite (16.3% Mg) on Stackyard Series C (W).
K: None; 95; 190 lb K per acre (approximately 1; 2 cwt K_2O per acre) applied as sulphate of potash.
In addition in 1959 magnesium-free calcium carbonate was applied to blocks on Sawyers I (R) at 10; 40 cwt per acre (four blocks at each rate).

Basal dressings per acre:
Sawyers I (R): In seedbed 1961: 1.0 cwt P_2O_5 as triple superphosphate, 0.5 cwt N as sulphate of ammonia. In spring 1961: 0.5 cwt N as sulphate of ammonia. After every cut except the last: 1.0 cwt N as sulphate of ammonia.

Stackyard Series C (W): 1.0 cwt P_2O_5 as triple superphosphate, 1.0 cwt N as ammonium nitrate. After every cut except the last: 1.0 cwt N as ammonium nitrate.

Cultivations, etc.:
Sawyers I (R): Ploughed: Dec 2, 1960. Sulphate of ammonia and triple superphosphate applied: Mar 20, 1961. Magnesium sulphate and sulphate of potash applied: Mar 22. Seed drilled at 39 lb per acre: Mar 26. Sprayed with MCPA/TBA at 4 pints in 40 gallons per acre: May 13. Sulphate of ammonia applied: May 15. Grass cut: Aug 9 and Sept 25. Sulphate of ammonia applied: Aug 10. Variety: S22 Italian ryegrass.
Stackyard Series C (W): Sulphate of potash, kieserite, triple superphosphate and ammonium nitrate applied: Mar 6, 1961. Cut 3 times: Apr 27, June 16, July 31. Ammonium nitrate applied after every cut except the last. Variety: S22 Italian ryegrass.

Note: For details of the previous year's results see "Results of the Field Experiments", 60/Ci/3.

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Standard errors per plot. Grass dry matter

Sawyers I (R)

1st cut:	1.89 cwt per acre	or 14.8% (48 d.f.)
2nd cut:	0.91 cwt per acre	or 9.5% (48 d.f.)
Total of 2 cuts:	2.55 cwt per acre	or 11.4% (48 d.f.)

Stackyard Series C (W)

1st cut:	3.34 cwt per acre	or 8.1% (24 d.f.)
2nd cut:	2.34 cwt per acre	or 9.4% (24 d.f.)
3rd cut:	0.86 cwt per acre	or 11.5% (24 d.f.)
Total of 3 cuts:	5.43 cwt per acre	or 7.4% (24 d.f.)

Summary of Results

Sawyers I (R)

Grass, Dry matter: cwt per acre

	K: lb per acre			Mg: lb per acre			
	None	95	190	None	29	58	Mean
		1st cut					
Calcium carbonate cwt per acre		(±0.55)*			(±0.55)*		
10	10.4	14.6	14.8	12.9	13.8	13.1	13.2
40	9.4	13.7	14.0	12.3	12.4	12.3	12.3
Diff.	-1.0	-0.9 (±0.77)**	-0.8	-0.6	-1.4 (±0.77)**	-0.8	-0.9
K: lb per acre					(±0.67)		(±0.39)
None				9.3	10.1	10.2	9.9
95				13.6	14.8	14.0	14.1
190				14.9	14.4	13.9	14.4
Mean				12.6	13.1 (±0.39)	12.7	12.8

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

Mean dry matter % as cut: 1st cut 25.4

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Sawyers I (R)

Grass, Dry matter: cwt per acre

	K: lb per acre			Mg: lb per acre			
	None	95	190	None	29	58	Mean
		2nd cut					
Calcium carbonate cwt per acre		(±0.26)*			(±0.26)*		
10	8.2	10.4	10.5	9.9	9.8	9.4	9.7
40	7.5	10.5	10.8	9.7	9.7	9.5	9.6
Diff.	-0.7	+0.1	+0.3	-0.2	-0.1	+0.1	-0.1
		(±0.37)**			(±0.37)**		
		K: lb per acre			(±0.32)		(±0.19)
		None		8.1	7.9	7.5	7.8
		95		10.5	10.7	10.3	10.5
		190		10.8	10.6	10.5	10.6
		Mean		9.8	9.7 (±0.19)	9.4	9.6
		Total of 2 cuts					
Calcium carbonate cwt per acre		(±0.74)*			(±0.74)*		
10	18.5	25.0	25.2	22.8	23.5	22.5	22.9
40	16.9	24.2	24.8	22.0	22.1	21.7	22.0
Diff.	-1.6	-0.8	-0.4	-0.8	-1.4	-0.8	-0.9
		(±1.04)**			(±1.04)**		
		K: lb per acre			(±0.90)		(±0.52)
		None		17.4	18.0	17.7	17.7
		95		24.0	25.5	24.3	24.6
		190		25.7	25.0	24.3	25.0
		Mean		22.4	22.8 (±0.52)	22.1	22.4

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Mean dry matter % as cut: 2nd cut 20.9
Total of 2 cuts 23.1

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Stackyard Series C (W)

Grass, Dry matter: cwt per acre

K: lb per acre	Mg: lb per acre None	29	58	Mean	Mg: lb per acre None	29	58	Mean
	1st cut (±1.66)			(±0.96)	2nd cut (±1.16)			(±0.68)
None	38.1	39.3	36.0	37.8	20.7	23.1	23.3	22.4
95	44.2	41.0	41.8	42.3	22.7	25.9	25.9	24.8
190	42.7	43.1	45.3	43.7	26.3	27.5	27.8	27.2
Mean	41.7	41.1 (±0.96)	41.0	41.2	23.2	25.5 (±0.68)	25.7	24.7

	3rd cut				Total of 3 cuts			
	(±0.43)			(±0.25)	(±2.71)			(±1.56)
None	7.5	7.7	6.8	7.3	66.3	70.0	66.1	67.5
95	7.0	6.9	7.4	7.1	73.9	73.8	75.0	74.2
190	7.8	8.3	8.0	8.0	76.7	78.8	81.1	78.9
Mean	7.4	7.6 (±0.25)	7.4	7.4	72.3	74.2 (±1.56)	74.1	73.5

Mean dry matter % as cut:

1st cut	14.8
2nd cut	27.7
3rd cut	35.3
Total of 3 cuts	25.9

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