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71/R/CS/43 Aqua Ammonia - Old Grass

Rothamsted Research

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71/R/CS/43

AQUA AMMONIA

Object: To study the effects of injecting large single dressings of aqueous ammonia on the yield of grazed grassland - Highfield IX.

The third year, grazed grass.

For previous years see 69/R/CS/43(t) and 70/R/CS/43.

Whole plot dimensions: 4.27 x 15.2. Area harvested: 0.00008.

Cultivations, etc.: Basal PK applied: 9 Nov, 1970. Aqueous ammonia injected: 11 Feb, 1971. N applied, sample cages placed: 24 Feb. Sample cuts taken: 27 Apr, 1 June*, 28 June, 4 Aug, 6 Sept, 1 Nov. 'Nitro-Chalk' applied and sample cage moved after each of first 5 cuts.

* Grass cut with shears because it was too long to cut with mower.

NOTES: (1) Visual estimates were made of the percentage surface area within each cage covered by clover leaves immediately before cutting.

(2) The percentage of N in the dry grass was determined.

Standard errors per plot. Dry matter, tonnes/hectare:

1st cut:	0.581 or 23.9% (21 d.f.)
2nd cut:	0.376 or 7.8% (21 d.f.)
3rd cut:	0.335 or 11.9% (21 d.f.)
4th cut:	0.437 or 10.5% (21 d.f.)
5th cut:	0.546 or 15.4% (21 d.f.)
6th cut:	0.260 or 11.0% (21 d.f.)
Total of 6 cuts:	1.535 or 7.6% (21 d.f.)

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SUMMARY OF RESULTS

DRY MATTER: TONNES/HECTARE

	N1	N2	N3	N4	Mean
1ST CUT					
	(±0.290)				(±0.145)
I	2.38	2.54	2.99	2.01	2.48
B	2.26	2.57	2.16	2.50	2.37
Mean (±0.205)	2.32	2.55	2.58	2.25	2.43
NO:	1.27				
General mean:	2.30				
2ND CUT					
	(±0.188)				(±0.094)
I	4.54	5.31	5.27	5.40	5.13
B	3.73	4.79	4.61	4.81	4.49
Mean (±0.133)	4.14	5.05	4.94	5.11	4.81
NO:	2.43				
General mean:	4.54				
3RD CUT					
	(±0.167)				(±0.084)
I	2.76	2.98	3.00	3.01	2.94
B	2.16	2.86	2.88	2.93	2.71
Mean (±0.118)	2.46	2.92	2.94	2.97	2.82
NO:	1.98				
General mean:	2.73				
Mean D.M. %:	1st cut: 17.4				
	2nd cut: 15.9				
	3rd cut: 18.6				

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DRY MATTER: TONNES/HECTARE

	N1	N2	N3	N4	Mean
4TH CUT					
	(±0.219)				(±0.109)
I	3.47	4.05	4.76	4.64	4.23
B	3.86	4.09	4.57	3.94	4.12
Mean (±0.155)	3.67	4.07	4.67	4.29	4.17

NO: 3.03
General mean: 4.05

5TH CUT					
	(±0.273)				(±0.136)
I	3.20	3.69	3.75	4.08	3.68
B	3.17	3.54	3.26	3.62	3.40
Mean (±0.193)	3.19	3.62	3.50	3.85	3.54

NO: 2.82
General mean: 3.46

6TH CUT					
	(±0.130)				(±0.065)
I	2.45	2.17	2.53	2.21	2.34
B	2.33	2.55	2.42	2.29	2.40
Mean (±0.092)	2.39	2.36	2.48	2.25	2.37

NO: 2.43
General mean: 2.38

Mean D.M. %: 4th cut: 20.1
5th cut: 24.3
6th cut: 24.5

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DRY MATTER: TONNES/HECTARE

	N1	N2	N3	N4	Mean
	TOTAL OF 6 CUTS				
	(±0.767)				(±0.384)
I	18.81	20.75	22.31	21.37	20.81
B	17.51	20.41	19.90	20.09	19.48
Mean (±0.543)	18.16	20.58	21.10	20.73	20.14

NO: 13.97

General mean: 19.46

Mean D.M. %: 20.1