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71/R/G/1 Weedkiller and Aqueous N - Grass

Rothamsted Research

Rothamsted Research (1972) *71/R/G/1 Weedkiller and Aqueous N - Grass* ; Yields Of The Field Experiments 1971, pp 341 - 345 - DOI: <https://doi.org/10.23637/ERADOC-1-97>

71/R/G/1

GRASS

WEEDKILLER AND AQUEOUS N

Object: To study the effects of a combined spray of liquid nitrogen fertiliser and a hormone weedkiller as a top dressing on new grass - Long Hoos III.

Design: 4 randomised blocks of 28 plots.

Whole plot dimensions: 2.74 x 2.13. Area harvested: 0.00022.

Treatments. (Applied per cut): All combinations of :-

1. Weedkiller (dichlorprop/MCPA): None (H0), 1.4 (H1), 2.8 (H2), 4.2 (H3) kg total a.e. (using fan jet size 00).
2. Forms of nitrogen: Solid, as 'Nitro-Chalk' 21% N applied immediately after the weedkiller (S), liquid, as urea/ammonium nitrate (26% N), mixed with the weedkiller (L) (using fan jet size 00).
3. Levels of nitrogen: 37.7 (N1), 75.3 (N2), 113.0 (N3) kg N, together with 4 additional treatments. LLN3 H0, LLN3 H1, LLN3 H2, LLN3 H3 where fan jet size 1 was used (L1).

NOTE: The weedkiller was applied in 337 l where solid fertiliser was used. The liquid fertiliser (with or without weedkiller) was applied as a spray at 112, 225 and 337 l for rates 1, 2 and 3 respectively.

Basal applications: 750 kg (6:15:15) broadcast.

Cultivations, etc.: Spring-tine cultivated: 17 Sept, 1970. Seed drilled at 56 kg in rows 15.2 cm (6 inches) apart, basal NPK applied: 18 Sept. Grass lightly topped: 22 Apr, 1971. All treatments applied: 29 Apr. Cut: 28 May. All treatments re-applied: 9 June. Cut: 21 July. All treatments re-applied: 2 Aug. Cut: 21 Oct. Variety: S24 Perennial Ryegrass. Previous crops: Barley 1969, fallow 1970.

NOTE: Scores were made for leaf scorch. The percentage of N in the dry grass was measured for each cut.

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

1st cut:	0.704 or 11.2% (69 d.f.)
2nd cut:	0.395 or 9.8% (69 d.f.)
3rd cut:	0.331 or 10.9% (69 d.f.)
Total of 3 cuts:	0.918 or 6.9% (69 d.f.)

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SUMMARY OF RESULTS

1ST CUT. DRY MATTER: TONNES/HECTARE

N: KG/HA

	S	L	37.7	75.3	113.0	Mean
	(±0.203)		(±0.249)			(±0.144)
H0	6.61	6.04	6.23	6.25	6.49	6.33
H1	6.52	6.38	6.37	6.43	6.54	6.45
H2	6.46	5.95	5.84	6.14	6.64	6.21
H3	6.42	5.78	5.87	6.21	6.21	6.10
			(±0.176)			(±0.102)
		S	6.49	6.45	6.56	6.50
		L	5.67	6.07	6.38	6.04
Mean (±0.124)			6.08	6.26	6.47	6.27

LLN3 H0 6.44
 LLN3 H1 6.68
 LLN3 H2 6.62
 LLN3 H3 6.03

General mean: 6.29
 Mean D.M. %: 17.0

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2ND CUT. DRY MATTER: TONNES/HECTARE

N: KG/HA

	S	L	37.7	75.3	113.0	Mean
	(±0.114)		(±0.140)			(±0.081)
H0	4.85	3.71	3.43	4.40	5.00	4.28
H1	4.53	3.52	3.01	4.15	4.92	4.03
H2	4.43	3.57	3.01	4.07	4.92	4.00
H3	4.34	3.39	2.59	4.17	4.83	3.87
			(±0.099)			(±0.057)
		S	3.56	4.62	5.43	4.54
		L	2.46	3.78	4.41	3.55
Mean (±0.070)			3.01	4.20	4.92	4.04

LN3 H0 4.48
 LN3 H1 4.69
 LN3 H2 4.65
 LN3 H3 4.54

General mean: 4.12
 Mean D.M.%: 24.1

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3RD CUT. DRY MATTER: TONNES/HECTARE

N: KG/HA

	S	L	37.7	75.3	113.0	Mean
	(±0.096)		(±0.117)			(±0.068)
H0	3.50	2.74	2.25	3.28	3.83	3.12
H1	3.41	2.80	2.21	3.40	3.71	3.11
H2	3.21	2.64	2.08	3.16	3.54	2.93
H3	3.33	2.69	2.11	3.32	3.60	3.01
			(±0.083)			(±0.048)
		S	2.57	3.65	3.87	3.36
		L	1.75	2.93	3.47	2.72
Mean (±0.058)			2.16	3.29	3.67	3.04

LN3 H0 3.53
 LN3 H1 3.61
 LN3 H2 3.57
 LN3 H3 3.17

General mean: 3.10
 Mean D.M.%: 26.6

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TOTAL OF 3 CUTS. DRY MATTER: TONNES/HECTARE

N: KG/HA

	S	L	37.7	75.3	113.0	Mean
	(±0.265)		(±0.325)			(±0.187)
H0	14.96	12.49	11.91	13.93	15.33	13.72
H1	14.46	12.70	11.60	13.97	15.17	13.58
H2	14.10	12.17	10.93	13.37	15.10	13.14
H3	14.08	11.86	10.57	13.70	14.64	12.97
			(±0.230)			(±0.133)
		S	12.63	14.71	15.86	14.40
		L	9.88	12.78	14.26	12.31
Mean (±0.162)			11.25	13.75	15.06	13.35

LLN3 H0 14.45
 LLN3 H1 14.98
 LLN3 H2 14.84
 LLN3 H3 13.74

General mean: 13.5
 Mean D.M.%: 22.6