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## Yields of the Field Experiments 1972

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### 72/R/CS/86 Weedkiller and Aqueous N - Old Grass

#### Rothamsted Research

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72/R/CS/86

WEEDKILLER AND AQUEOUS N

Object: To study the effects of a range of rates of solid or liquid nitrogen in combination with a range of rates of hormone weedkiller, on weed control and yield of old grass - Ver.

Sponsors: S.C.R. Freeman, A. Penny.

The first year, old grass.

Design: 3 randomised blocks of 28 plots.

Whole plot dimensions: 2.74 x 1.37. Area harvested: 0.00022.

Treatments: (applied per cut): All combinations of:-

1. Weedkiller (dichlorprop/MCPA) (H): None (0), 1.4 (1), 2.8 (2), 4.2 (3) kg total a.e. (using fan jet size 00).
2. Forms of nitrogen: Solid, as 'Nitro-Chalk' 21% N applied immediately after the weedkiller, liquid, as urea/ammonium nitrate (26% N), mixed with the weedkiller (using fan jet size 00).
3. Nitrogen: 37.7, 75.3, 113.0 kg N, together with 4 extra treatments (all liquid N<sub>3</sub>):- H0, H1, H2, H3, where fan jet size 1 was used.

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: 630 kg 0:14:28 broadcast.

Cultivations, etc.: Grass lightly trimmed, basal PK broadcast: 10 Mar, 1972. All treatments applied: 13 Apr. Cut: 8 June. All treatments re-applied: 28 June. Cut: 28 Sept.

- NOTES: (1) Scores were made of foliar scorch by treatments on 18 Apr and 6 July.  
(2) A score of the presence of weeds was made on 31 May.  
(3) The % N in herbage was measured.  
(4) The yield of weeds at the second cut was measured.

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

1st cut: 0.575 or 8.3% (54 d.f.)  
2nd cut: 0.451 or 17.0% (54 d.f.)  
Total of 2 cuts: 0.873 or 9.1% (54 d.f.)

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TABLES OF MEANS

DRY MATTER: TONNES/HECTARE

1ST CUT

	FORM		N:KG/HA			Mean
	Solid	Liquid	37.7	75.3	113.0	
H: KG/HA						
0	7.15	6.68	6.38	7.00	7.36	6.92
1.4	7.32	6.49	6.73	7.05	6.94	6.91
2.8	7.05	6.56	5.94	7.01	7.47	6.81
4.2	6.93	6.66	6.40	6.76	7.22	6.80
		Form				
		Solid	6.53	7.35	7.46	7.11
		Liquid	6.19	6.57	7.04	6.60
Mean			6.36	6.96	7.25	6.86

EXTRA (LIQUID N3)

H: KG/HA					Mean
0	1.4	2.8	4.2		
7.92	7.55	7.36	7.19		7.51

STANDARD ERRORS OF DIFFERENCES

H	FORM	N	H FORM	H N	FORM N	EXTRA
0.192	0.135	0.166	0.324	0.376	0.235	0.469

Grand Mean: 6.95  
Mean D.M.%: 23.3

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DRY MATTER: TONNES/HECTARE

2ND CUT

	FORM		N:KG/HA			Mean
	Solid	Liquid	37.7	75.3	113.0	
H: KG/HA						
0	2.89	2.54	2.14	2.65	3.35	2.72
1.4	3.16	2.27	2.27	2.73	3.15	2.72
2.8	2.77	2.52	2.29	2.58	3.08	2.65
4.2	2.55	2.25	2.00	2.37	2.83	2.40
		Form				
		Solid	2.43	2.68	3.42	2.85
		Liquid	1.91	2.48	2.79	2.39
Mean			2.17	2.58	3.10	2.62

EXTRA (LIQUID N3)

H: KG/HA					Mean
0	1.4	2.8	4.2		
3.53	2.68	2.92	2.36		2.88

STANDARD ERRORS OF DIFFERENCES

H	FORM	N	H FORM	H N	FORM N	EXTRA
0.150	0.106	0.130	0.254	0.296	0.184	0.369

Grand Mean: 2.66  
Mean D.M. %: 31.0

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DRY MATTER: TONNES/HECTARE

TOTAL OF 2 CUTS

H: KG/HA	FORM		N:KG/HA			Mean
	Solid	Liquid	37.7	75.3	113.0	
0	10.05	9.22	8.53	9.66	10.71	9.63
1.4	10.49	8.76	8.99	9.78	10.09	9.62
2.8	9.82	9.09	8.22	9.59	10.55	9.45
4.2	9.49	8.91	8.39	9.14	10.06	9.20
		Form				
		Solid	8.97	10.04	10.88	9.96
		Liquid	8.10	9.05	9.82	8.99
Mean			8.54	9.54	10.35	9.48

EXTRA(LIQUID N3)

H: KG/HA					Mean
0	1.4	2.8	4.2		
11.46	10.24	10.28	9.55		10.38

STANDARD ERRORS OF DIFFERENCES

H	FORM	N	H FORM	H N	FORM N	EXTRA
0.291	0.206	0.252	0.492	0.572	0.356	0.713

Grand Mean: 9.61

Mean D.M.%: 27.1