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70/R/G/3 Grass Weedkiller and Aqueous N

Rothamsted Research

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GRASS

(70/R/G/3)

Weedkiller and aqueous N, Road Piece 1970, permanent grass.

Design: 4 randomised blocks of 28 plots.

Area of each plot: 0.0007. Area harvested: 0.0004.

Treatments: All combinations of:-

1. Weedkiller (dichlorprop/MCPA): None (H0), 20 (H1), 40 (H2), 60 (H3) oz total a.e. on 2 occasions.
2. Forms of nitrogen (on 2 occasions): Solid, as 'Nitro-Chalk' (21% N) applied immediately after the weedkiller (S), liquid as urea/ammonium nitrate (26% N) mixed with weedkiller (L).
3. Levels of nitrogen: 0.3 (N1), 0.6 (N2), 0.9 (N3) cwt N on each occasion.

Together with 4 additional treatments:

SN2 E HD, SN2 E H1, SN2 E H2, SN2 E H3

where 'Nitro-Chalk' was applied early (E) and the HD plots were treated with weedkiller on 2 occasions (Dalapon at 4 lb a.i. in 28 gals).

NOTE: The dichlorprop/MCPA was applied in 28 gals where solid fertiliser was used. The liquid fertiliser (with or without weedkiller) was applied as a spray in 10, 20 and 30 gals for rates 1, 2 and 3 respectively.

Basal applications: 560 lb (0:14:28).

Cultivations, etc.: Basal PK applied: 10 Apr, 1970. N applied to E plots: 27 Apr. Remaining N treatments and weedkillers (including dalapon) applied: 19 May. Cut: 16 June. N applied to E plots: 22 June. Remaining N treatments and weedkillers (including dalapon) applied: 30 June. Cut second time: 15 Oct.

NOTES: (1) Soil samples were taken for pH in May. Scores were made of weedkiller scorch and weed control. Scores were also made for grass cover and for fine-leaved grasses. On blocks II and IV the proportion of weeds to grasses at the second cut was determined.

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- (2) On the second cut on one plot - L N3 H0 the material harvested was mainly docks. An estimated value was used in the analysis for second cut and total of 2 cuts.
- (3) The percentage of N in herbage was determined.

Standard errors per plot. Dry matter: cwt.

1st cut:	3.92 or 16.4% (69 d.f.)
2nd cut:	3.65 or 14.0% (68 d.f.)
Total of 2 cuts:	5.09 or 10.2% (68 d.f.)

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SUMMARY OF RESULTS

DRY MATTER: CWT

	N1	N2	N3	HO	H1	H2	H3	Mean
	1ST CUT							
	(±0.98)			(±1.13)				(±0.57)
S	24.1	24.2	23.5	26.5	25.5	21.7	22.0	23.9
L	23.4	24.3	23.4	25.1	24.9	22.9	21.9	23.7
				(±1.38)				(±0.69)
		N1		24.7	27.6	21.7	20.9	23.7
		N2		27.1	24.0	23.2	22.7	24.3
		N3		25.4	24.1	21.9	22.3	23.4
		Mean		25.8	25.2	22.3	22.0	23.8
		(±0.80)						
		SN2 E HD		18.5				
		SN2 E H1		22.9				
		SN2 E H2		26.9				
		SN2 E H3		25.5				

General mean: 23.8

Mean D.M. %: 30.9

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DRY MATTER: CWT

	N1	N2	N3	H0	H1	H2	H3	Mean
	2ND CUT							
	(±0.91)			(±1.05)				(±0.53)
S	26.4	27.2	30.2	30.4	27.1	27.7	26.6	27.9
L	21.4	24.7	26.4	25.9	23.3	24.1	23.3	24.1
				(±1.29)				(±0.65)
		N1		26.2	23.4	22.4	23.4	23.9
		N2		28.4	24.2	26.5	24.8	26.0
		N3		29.8	28.1	28.8	26.5	28.3
		Mean		28.1	25.2	25.9	24.9	26.0
		(±0.75)						
		SN2 E HD		8.6				
		SN2 E H1		28.5				
		SN2 E H2		24.1				
		SN2 E H3		28.1				

General mean: 25.5
 Mean D.M.%: 26.4

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DRY MATTER: CWT

	N1	N2	N3	H0	H1	H2	H3	Mean
	TOTAL OF 2 CUTS							
	(±1.27)			(±1.47)				(±0.73)
S	50.4	51.5	53.7	56.8	52.7	49.4	48.6	51.9
L	44.8	49.0	49.5	50.6	48.2	47.0	45.1	47.8
				(±1.80)				(±0.90)
		N1		50.9	51.0	44.1	44.3	47.6
		N2		55.5	48.2	49.8	47.5	50.2
		N3		54.7	52.2	50.8	48.9	51.6
		Mean		53.7	50.5	48.2	46.9	49.8
		(±1.04)						
		SN2 E HD		27.1				
		SN2 E H1		51.3				
		SN2 E H2		51.1				
		SN2 E H3		53.7				

General mean: 49.2
 Mean D.M. %: