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Yields of the Field Experiments 1967

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67/R/RG101/DF/1 Grass - Anhydrous Ammonia

Rothamsted Research

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67/Df/1.1

GRASS

(RG 101)

Anhydrous and aqueous ammonia - Bones Close 1967.

Design: 3 randomised blocks of 26 plots.

Area of each plot: 0.0092. Area harvested: 0.0054.

Treatments: None (NO) - 2 plots per block, and all combinations of:-

1. Nitrogen fertiliser and time of application:

Applied in autumn:

Injected anhydrous ammonia (Nov 15)	IAA
Injected aqueous ammonia (Nov 7)	IQA

Applied in spring:

Injected anhydrous ammonia (Mar 7)	IAS
Injected aqueous ammonia (Mar 8)	IQS

Broadcast 'Nitro-Chalk':

Applied in 3 equal dressings	BD
Applied as single dressing	BS

2. N: 1.0 (N1), 2.0 (N2), 3.0 (N3), 4.0 (N4) cwt
(total for the season).

Basal application: 900 lb (0:14:28) in winter.

Cultivations, etc.: Basal PK compound applied: Nov 22, 1966. 'Nitro-Chalk' applied (treatment BS and first dressing of BD):
Mar 22, 1967. Cut three times: May 31, July 20, Oct 11.
'Nitro-Chalk' applied after first two cuts for BD treatment.

NOTE: Soil samples were taken to determine extent of ammonia diffusion and grass samples for dry matter and percentage of N, P and K.

Standard errors per plot. Grass dry matter

1st cut:	4.46 or 8.8% (46 d.f.)
2nd cut:	2.09 or 11.3% (46 d.f.)
3rd cut:	1.98 or 18.9% (46 d.f.)
Total of 3 cuts:	5.90 or 7.4% (46 d.f.)

67/Df/1.2

SUMMARY OF RESULTS

	IAA	IQA	IAS	IQS	BD	BS	Mean
1ST CUT							
(±2.57)							(±1.05)
N1	47.4	53.6	49.8	45.6	43.7	51.0	48.5
N2	51.2	53.3	47.6	49.2	52.2	46.0	49.9
N3	55.3	54.9	51.1	48.5	48.3	48.4	51.1
N4	57.2	56.6	47.3	48.6	51.1	49.9	51.8
Mean (±1.29)	52.8	54.6	48.9	48.0	48.8	48.8	50.3

NO: 37.2 (±1.82)
 General mean: 49.3
 Mean D.M. %: 15.4

	IAA	IQA	IAS	IQS	BD	BS	Mean
2ND CUT							
(±1.20)							(±0.49)
N1	8.2	9.9	16.4	12.3	15.8	12.5	12.5
N2	10.3	21.3	19.6	18.1	23.5	18.0	18.5
N3	16.7	22.3	18.5	22.8	24.6	20.2	20.8
N4	16.5	23.9	20.6	23.8	22.9	25.7	22.2
Mean (±0.60)	12.9	19.4	18.8	19.3	21.7	19.1	18.5

NO: 6.3 (±0.84)
 General mean: 17.6
 Mean D.M. %: 24.4

67/Df/1.3

	IAA	IQA	IAS	IQS	BD	BS	Mean
3RD CUT							
(±1.14)							
N1	2.5	2.6	4.6	3.3	10.4	2.9	4.4
N2	3.0	6.7	7.7	5.4	17.5	5.2	7.6
N3	5.8	12.0	11.2	13.5	20.5	9.8	12.1
N4	7.5	18.8	14.0	22.6	22.8	21.2	17.8
Mean (±0.57)	4.7	10.0	9.3	11.2	17.8	9.8	10.5

NO: 2.3 (±0.81)
 General mean: 58.1
 Mean D.M. %: 17.7

TOTAL OF 3 CUTS

	(±3.41)						(±1.39)
N1	58.1	66.2	70.7	61.3	69.9	66.5	65.4
N2	64.4	81.4	74.9	72.8	93.1	69.2	76.0
N3	77.8	89.3	80.7	84.8	93.3	78.4	84.1
N4	81.2	99.3	81.8	95.1	96.8	96.8	91.8
Mean (±1.70)	70.4	84.0	77.0	78.5	88.3	77.7	79.3

NO: 45.8 (±2.41)
 General mean: 76.7
 Mean D.M. %: 19.2