

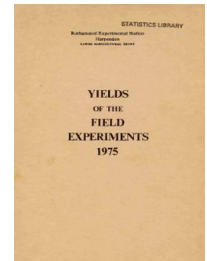
Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1975

[Full Table of Content](#)



75/ R/4158 - Rates & Forms of N - Old Grass

Rothamsted Research

Rothamsted Research (1976) 75/ R/4158 - Rates & Forms of N - Old Grass ; Yields Of The Field Experiments 1975, pp 256 - 261 - DOI: <https://doi.org/10.23637/ERADOC-1-141>

75/R/CS/158

RATES AND FORMS OF N

Object: To study the cumulative effects of autumn injection of liquid fertilisers at different rates and spacings on nitrification losses and the yield of old grass - Bones Close.

Sponsors: F.V. Widdowson, J. Ashworth, A. Penny.

The second year, old grass.

For previous year see 74/R/G/1.

Design: 4 randomised blocks of 20 plots.

Whole plot dimensions: 2.44 x 15.2.

Treatments (All cumulative on 1974): All combinations of:-

1. Forms of liquid nitrogen fertiliser:	N FORM L
Aqueous ammonia 25% N	LIQUID AA
Aqueous urea 18% N	LIQUID AU
2. Spacing between injection tines (cm):	SPACING
30	30
60	60
3. Total nitrogen fertiliser applied per annum (kg N):	TOTALN L
250	250
375	375
500	500
plus all combinations of:	
4. Forms of solid nitrogen fertiliser:	N FORM S
'Nitro-Chalk' 25% N	SOLID NC
Prilled urea 46% N	SOLID U
5. Total nitrogen fertiliser applied per annum (kg N):	TOTALN S
250	250
375	375
500	500
	EXTRA
plus two extra plots per block, untreated.	NONE

75/R/CS/158

NOTE: Aqueous nitrogen fertilisers were applied in one dressing on 15 Jan, 1975. Solid nitrogen was divided equally and applied on 17 Mar, 17 June, 8 Sept.

Basal applications: Manures: (0:14:28) at 500 kg.

Cultivations, etc.:— PK applied: 16 Jan, 1975. Cut: 9 June, 2 Sept, 3 Nov.

NOTES: (1) N determinations were made on the samples from each cut.
(2) Urea hydrolysis and ammonia nitrification were measured in injected soil profiles.

75/R/CS/153

GRASS

1ST CUT (9/6/75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

SPACING	30	60	MEAN	
N FORM L				
LIQUIDAA	8.12	7.75	7.93	
LIQUIDAU	8.09	7.89	7.99	
MEAN	8.11	7.82	7.96	
TOTALN L	250	375	500	MEAN
N FORM L				
LIQUIDAA	8.25	7.75	7.80	7.93
LIQUIDAU	8.02	8.05	7.91	7.99
MEAN	8.14	7.90	7.85	7.96
TOTALN L	250	375	500	MEAN
SPACING				
30	8.37	8.11	7.85	8.11
60	7.91	7.69	7.86	7.82
MEAN	8.14	7.90	7.85	7.96
TOTALN S	250	375	500	MEAN
N FORM S				
SOLIDNC	7.28	7.39	7.03	7.23
SOLIDU	7.13	7.33	7.91	7.46
MEAN	7.20	7.36	7.47	7.34

EXTRA NONE 4.76

GRAND MEAN 7.46

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	N FORM L	SPACING	TOTALN L	N FORM S	TOTALN S
SED	0.146	0.146	0.179	0.207	0.253

TABLE	N FORM L SPACING	N FORM L TOTALN L	SPACING TOTALN L	N FORM S TOTALN S
SED	0.207	0.253	0.253	0.358

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	58	0.507	6.8
1ST CUT MEAN DM%	24.2		

75/R/CS/158

GRASS

2ND CUT (2/9/75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

SPACING	30	60	MEAN	
N FORM L				
LIQUIDAA	0.78	0.88	0.83	
LIQUIDAU	1.08	1.05	1.06	
MEAN	0.93	0.96	0.94	
TOTALN L	250	375	500	MEAN
N FORM L				
LIQUIDAA	0.62	0.85	1.02	0.83
LIQUIDAU	0.88	1.11	1.20	1.06
MEAN	0.75	0.98	1.11	0.94
TOTALN L	250	375	500	MEAN
SPACING				
30	0.69	0.88	1.20	0.93
60	0.80	1.07	1.02	0.96
MEAN	0.75	0.98	1.11	0.94
TOTALN S	250	375	500	MEAN
N FORM S				
SOLIDNC	1.40	1.25	1.03	1.23
SOLIDU	1.17	0.98	0.99	1.04
MEAN	1.28	1.11	1.01	1.13

EXTRA NONE 0.27

GRAND MEAN 0.93

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	N FORM L	SPACING	TOTALN L	N FORM S	TOTALN S
SED	0.071	0.071	0.087	0.100	0.123
TABLE	N FORM L SPACING	N FORM L TOTALN L	SPACING TOTALN L	N FORM S TOTALN S	
SED	0.100	0.123	0.123	0.173	

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	58	0.245	26.2
2ND CUT MEAN DM%	43.5		

75/R/CS/158

GRASS

3RD CUT (3/11/75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

SPACING	30	60	MEAN	
N FORM L				
LIQUIDAA	0.22	0.22	0.22	
LIQUIDAU	0.24	0.30	0.27	
MEAN	0.23	0.26	0.24	
TOTALN L	250	375	500	MEAN
N FORM L				
LIQUIDAA	0.15	0.27	0.24	0.22
LIQUIDAU	0.18	0.34	0.28	0.27
MEAN	0.16	0.30	0.26	0.24
TOTALN L	250	375	500	MEAN
SPACING				
30	0.14	0.28	0.27	0.23
60	0.19	0.33	0.25	0.26
MEAN	0.16	0.30	0.26	0.24
TOTALN S	250	375	500	MEAN
N FORM S				
SOLIDNC	0.56	0.41	0.27	0.41
SOLIDU	0.65	0.54	0.41	0.54
MEAN	0.60	0.47	0.34	0.47

EXTRA NONE 0.03

GRAND MEAN 0.29

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	N FORM L	SPACING	TOTALN L	N FORM S	TOTALN S
SED	0.031	0.031	0.038	0.044	0.054

TABLE	N FORM L SPACING	N FORM L TOTALN L	SPACING TOTALN L	N FORM S TOTALN S
SED	0.044	0.054	0.054	0.076

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	58	0.107	36.9

3RD CUT MEAN DM% 21.1

75/R/CS/158

GRASS

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

SPACING	30	60	MEAN	
N FORM L				
LIQUIDAA	9.12	8.84	8.98	
LIQUIDAU	9.41	9.23	9.32	
MEAN	9.26	9.04	9.15	
TOTALN L	250	375	500	MEAN
N FORM L				
LIQUIDAA	9.02	8.87	9.06	8.98
LIQUIDAU	9.08	9.49	9.38	9.32
MEAN	9.05	9.18	9.22	9.15
TOTALN L	250	375	500	MEAN
SPACING				
30	9.20	9.27	9.32	9.26
60	8.90	9.09	9.12	9.04
MEAN	9.05	9.18	9.22	9.15
TOTALN S	250	375	500	MEAN
N FORM S				
SOLIDNC	9.24	9.04	8.34	8.87
SOLIDU	8.94	8.85	9.31	9.03
MEAN	9.09	8.94	8.83	8.95

EXTRA NONE 5.06

GRAND MEAN 8.68

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	N FORM L	SPACING	TOTALN L	N FORM S	TOTALN S
SED	0.167	0.167	0.205	0.236	0.289

TABLE	N FORM L SPACING	N FORM L TOTALN L	SPACING TOTALN L	N FORM S TOTALN S
SED	0.236	0.289	0.289	0.409

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	58	0.578	6.7
TOTAL OF 3 CUTS MEAN DM%	29.6		
PLOT AREA HARVESTED	0.00111		