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Yields of the Field Experiments 1978

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78/R/CS/161 Injected N - Old Grass

Rothamsted Research

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78/R/CS/161

INJECTED N

Object: To study the cumulative and residual effects of injecting aqueous urea, with or without a nitrification inhibitor, at three rates and two spacings on the yield and nitrogen uptake of old grass cut for silage - Highfield IX.

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

The fourth year, old grass.

For previous years see 76-77/R/CS/161.

Design: 2 randomised blocks of 18 plots split into 2.

Whole plot dimensions: 4.27 x 15.2.

Treatments: All combinations of:-

Whole plots

1. LIQUID N Liquid nitrogen fertiliser:
 UREA Aqueous solution of urea, no nitrification inhibitor
 UREA+INH Aqueous solution of urea plus a nitrification inhibitor
 (ammonium trithiocarbonate in 1976, sodium trithiocarbonate
 in 1977 and 1978)
2. SPACING Spacing between tines injecting liquid fertiliser:
 30 CM
 60 CM
3. N RATE Rate of liquid fertiliser, applied as a single annual
 dressing (kg N):
 250
 375
 500

Sub plots

4. YEARS Years of application, cumulative when applied:
 75+6+8 1975, 1976 and 1978
 75+6+7+8 1975, 1976, 1977 and 1978

 plus six whole plots given 'Nitro-Chalk 25', dressing divided
 between cuts (kg N, total/annum):
- SOLID N
- 0
100
200
300
400
500

with sub plots YEARS as above.

78/R/CS/161

NOTES: (1) The whole area was grazed in 1975, yields were not taken.
 (2) Sodium trithiocarbonate was applied at 18 kg to SPACING, 30 CM and at 9 kg to SPACING, 60 CM.

Basal applications: (0:14:28) at 1010 kg. Chalk at 2.9 t.

Cultivations, etc.:— PK applied: 9 Dec, 1977. Chalk applied: 3 Feb, 1978.
 Aqueous urea and inhibitors injected: 9 Mar. 'Nitro-Chalk' applied six times: 10 Mar, 9 May, 17 June, 11 July, 10 Aug and 8 Sept. Cut: 8 May, 2 June, 10 July, 9 Aug, 8 Sept and 31 Oct.

NOTE: Rates of nitrification of injected N were assessed and grass samples were taken for N determinations.

1ST CUT (5/5/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	2.55	2.20	2.37	
UREA+INH	2.51	1.96	2.24	
MEAN	2.53	2.08	2.31	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	2.27	2.41	2.45	2.37
UREA+INH	2.15	2.20	2.36	2.24
MEAN	2.21	2.30	2.40	2.31
N RATE	250	375	500	MEAN
SPACING				
30 CM	2.51	2.49	2.58	2.53
60 CM	1.90	2.12	2.23	2.08
MEAN	2.21	2.30	2.40	2.31
YEARS	75+6+8	75+6+7+8	MEAN	
LIQUID N				
UREA	2.50	2.25	2.37	
UREA+INH	2.28	2.20	2.24	
MEAN	2.39	2.22	2.31	
YEARS	75+6+8	75+6+7+8	MEAN	
SPACING				
30 CM	2.64	2.41	2.53	
60 CM	2.13	2.03	2.08	
MEAN	2.39	2.22	2.31	

78/R/CS/161

1ST CUT (5/5/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

YEARS	75+6+8	75+6+7+8	MEAN				
N RATE							
250	2.13	2.28	2.21				
375	2.35	2.26	2.30				
500	2.69	2.12	2.40				
MEAN	2.39	2.22	2.31				
SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	2.48	2.51	2.66	2.06	2.31	2.24	
UREA+INH	2.55	2.47	2.50	1.75	1.92	2.22	
SPACING	30 CM		60 CM				
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8			
LIQUID N							
UREA	2.70	2.39	2.31	2.10			
UREA+INH	2.59	2.43	1.96	1.97			
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
UREA	2.21	2.33	2.50	2.32	2.80	2.09	
UREA+INH	2.06	2.24	2.19	2.20	2.58	2.14	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
SPACING							
30 CM	2.48	2.55	2.54	2.44	2.92	2.24	
60 CM	1.79	2.02	2.15	2.08	2.46	2.00	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
UREA	2.47	2.48	2.58	2.43	3.05	2.26	
SPACING	30 CM						
60 CM	1.95	2.17	2.42	2.21	2.55	1.92	
UREA+INH	30 CM	2.49	2.61	2.49	2.45	2.79	2.21
60 CM	1.63	1.88	1.89	1.95	2.38	2.07	
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75+6+8		1.10	1.44	1.71	2.24	2.42	1.78
75+6+7+8		1.05	1.39	1.94	1.62	1.85	1.57
MEAN	0.58	1.07	1.41	1.83	1.93	2.14	1.49
GRAND MEAN	2.12						

78/R/CS/161

1ST CUT (5/5/78) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.148	0.060	0.060	0.074

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.054 0.084*	0.085	0.105	0.105

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.198	0.081	0.081	0.099
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.187			
LIQUID N		0.076		
SPACING			0.076	
N RATE				0.094

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.148	0.115	0.140	0.140
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.108		
LIQUID N.N RATE			0.132	
SPACING N RATE				0.132

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.198
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.187

* USE ONLY IN TABLES INVOLVING SOLID N

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.148	7.0
BLOCK.WP.SP	17	0.187	8.8

1ST CUT MEAN DM% 14.2

78/R/CS/161

2ND CUT (1/6/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	3.64	3.39	3.51	
UREA+INH	3.63	3.41	3.52	
MEAN	3.63	3.40	3.52	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	3.43	3.55	3.56	3.51
UREA+INH	3.53	3.56	3.49	3.52
MEAN	3.48	3.55	3.53	3.52
N RATE	250	375	500	MEAN
SPACING				
30 CM	3.55	3.74	3.62	3.63
60 CM	3.41	3.37	3.44	3.40
MEAN	3.48	3.55	3.53	3.52
YEARS	75+6+8	75+6+7+8	MEAN	
LIQUID N				
UREA	3.54	3.49	3.51	
UREA+INH	3.56	3.49	3.52	
MEAN	3.55	3.49	3.52	
YEARS	75+6+8	75+6+7+8	MEAN	
SPACING				
30 CM	3.65	3.61	3.63	
60 CM	3.44	3.37	3.40	
MEAN	3.55	3.49	3.52	

78/R/CS/161

2ND CUT (1/6/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

YEARS	75+6+8	75+6+7+8	MEAN				
N RATE							
250	3.58	3.38	3.48				
375	3.58	3.53	3.55				
500	3.48	3.57	3.53				
MEAN	3.55	3.49	3.52				
SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	3.51	3.77	3.62	3.35	3.33	3.50	
UREA+INH	3.58	3.71	3.61	3.47	3.41	3.37	
SPACING	30 CM			60 CM			
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8			
LIQUID N							
UREA	3.66	3.62	3.42	3.37			
UREA+INH	3.65	3.61	3.46	3.37			
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
UREA	3.56	3.30	3.49	3.61	3.55	3.57	
UREA+INH	3.59	3.46	3.67	3.44	3.42	3.56	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
SPACING							
30 CM	3.72	3.38	3.73	3.76	3.52	3.71	
60 CM	3.44	3.38	3.44	3.30	3.44	3.43	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
SPACING							
UREA	30 CM	3.77	3.25	3.65	3.89	3.54	3.71
	60 CM	3.36	3.34	3.33	3.33	3.56	3.44
UREA+INH	30 CM	3.66	3.50	3.80	3.63	3.51	3.71
	60 CM	3.52	3.42	3.55	3.26	3.32	3.42
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75+6+8		2.45	2.99	3.14	3.04	3.14	2.95
75+6+7+8		2.42	2.89	3.14	3.76	3.69	3.18
MEAN	1.99	2.43	2.94	3.14	3.40	3.42	2.89

GRAND MEAN 3.39

78/R/CS/161

2ND CUT (1/6/78) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.098	0.040	0.040	0.049
TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.072 0.112*	0.056	0.069	0.069
TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.202	0.082	0.082	0.101
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.250			
LIQUID N		0.102		
SPACING			0.102	
N RATE				0.125
TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.098	0.117	0.143	0.143
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.144		
LIQUID N.N RATE			0.177	
SPACING N RATE				0.177
TABLE	LIQUID N SPACING N RATE YEARS			
SED	0.202			
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING.N RATE	0.250			

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.098	2.9
BLOCK.WP.SP	17	0.250	7.4

2ND CUT MEAN DM% 15.4

78/R/CS/161

3RD CUT (11/7/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	1.96	1.97	1.97	
UREA+INH	2.02	1.96	1.99	
MEAN	1.99	1.97	1.98	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	1.53	2.22	2.15	1.97
UREA+INH	1.68	2.13	2.16	1.99
MEAN	1.60	2.18	2.15	1.98
N RATE	250	375	500	MEAN
SPACING				
30 CM	1.40	2.25	2.31	1.99
60 CM	1.81	2.10	1.99	1.97
MEAN	1.60	2.18	2.15	1.98
YEARS	75+6+8	75+6+7+8	MEAN	
LIQUID N				
UREA	2.08	1.86	1.97	
UREA+INH	2.15	1.83	1.99	
MEAN	2.11	1.84	1.98	
YEARS	75+6+8	75+6+7+8	MEAN	
SPACING				
30 CM	2.13	1.84	1.99	
60 CM	2.09	1.84	1.97	
MEAN	2.11	1.84	1.98	

78/R/CS/161

3RD CUT (11/7/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

YEARS	75+6+8	75+6+7+8	MEAN				
N RATE							
250	1.61	1.60	1.60				
375	2.29	2.06	2.18				
500	2.44	1.87	2.15				
MEAN	2.11	1.84	1.98				
SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	1.28	2.35	2.25	1.78	2.09	2.04	
UREA+INH	1.52	2.15	2.37	1.84	2.10	1.94	
SPACING	30 CM			60 CM			
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8			
LIQUID N							
UREA	2.08	1.84	2.07	1.87			
UREA+INH	2.18	1.85	2.11	1.81			
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
UREA	1.52	1.54	2.31	2.13	2.40	1.89	
UREA+INH	1.70	1.65	2.26	2.00	2.47	1.84	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
SPACING							
30 CM	1.39	1.41	2.37	2.13	2.64	1.99	
60 CM	1.83	1.79	2.20	2.00	2.24	1.75	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
SPACING							
UREA	30 CM	1.29	1.27	2.42	2.29	2.54	1.97
	60 CM	1.75	1.82	2.21	1.97	2.26	1.82
UREA+INH	30 CM	1.49	1.55	2.33	1.97	2.73	2.01
	60 CM	1.92	1.75	2.19	2.02	2.21	1.67
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75+6+8		1.02	1.37	1.63	2.12	2.38	1.71
75+6+7+8		0.89	1.22	1.61	1.82	2.24	1.56
MEAN	1.03	0.96	1.30	1.62	1.97	2.31	1.53

GRAND MEAN 1.88

78/R/CS/161

3RD CUT (11/7/78) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.176	0.072	0.072	0.088

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.067 0.104*	0.101	0.124	0.124

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.241	0.098	0.098	0.120
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.233			
LIQUID N		0.095		
SPACING			0.095	
N RATE				0.116

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.176	0.139	0.170	0.170
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.134		
LIQUID N.N RATE			0.164	
SPACING N RATE				0.164

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.241
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.233

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.176	9.4
BLOCK.WP.SP	17	0.233	12.4

3RD CUT MEAN DM% 20.4

78/R/CS/161

4TH CUT (8/8/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	1.18	1.23	1.21	
UREA+INH	1.11	1.26	1.19	
MEAN	1.15	1.25	1.20	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	0.78	1.29	1.55	1.21
UREA+INH	0.82	1.27	1.47	1.19
MEAN	0.80	1.28	1.51	1.20
N RATE	250	375	500	MEAN
SPACING				
30 CM	0.71	1.16	1.57	1.15
60 CM	0.89	1.40	1.45	1.25
MEAN	0.80	1.28	1.51	1.20
YEARS	75+6+8	75+6+7+8	MEAN	
LIQUID N				
UREA	1.19	1.23	1.21	
UREA+INH	1.17	1.20	1.19	
MEAN	1.18	1.21	1.20	
YEARS	75+6+8	75+6+7+8	MEAN	
SPACING				
30 CM	1.15	1.14	1.15	
60 CM	1.21	1.29	1.25	
MEAN	1.18	1.21	1.20	

78/R/CS/161

4TH CUT (8/8/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

YEARS	75+6+8	75+6+7+8	MEAN				
N RATE							
250	0.81	0.79	0.80				
375	1.25	1.31	1.28				
500	1.48	1.54	1.51				
MEAN	1.18	1.21	1.20				
SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	0.70	1.22	1.63	0.86	1.36	1.48	
UREA+INH	0.71	1.10	1.51	0.92	1.44	1.42	
SPACING	30 CM			60 CM			
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8			
LIQUID N							
UREA	1.21	1.16	1.17	1.29			
UREA+INH	1.09	1.12	1.25	1.28			
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
UREA	0.76	0.80	1.26	1.33	1.55	1.55	
UREA+INH	0.85	0.78	1.25	1.30	1.41	1.52	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
SPACING							
30 CM	0.78	0.63	1.15	1.17	1.52	1.62	
60 CM	0.84	0.95	1.35	1.45	1.45	1.46	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
SPACING							
UREA	30 CM	0.73	0.68	1.26	1.19	1.64	1.62
	60 CM	0.80	0.92	1.26	1.47	1.46	1.49
UREA+INH	30 CM	0.83	0.59	1.05	1.16	1.40	1.62
	60 CM	0.87	0.98	1.44	1.44	1.43	1.42
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75+6+8		0.94	1.34	1.28	1.43	1.42	1.28
75+6+7+8		0.67	0.97	1.19	1.23	1.29	1.07
MEAN	0.76	0.81	1.16	1.23	1.33	1.36	1.11

GRAND MEAN 1.19

78/R/CS/161

4TH CUT (8/8/78) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.069	0.028	0.028	0.034
TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.035 0.055*	0.040	0.049	0.049
TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.110	0.045	0.045	0.055
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.122			
LIQUID N		0.050		
SPACING			0.050	
N RATE				0.061
TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.069	0.064	0.078	0.078
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.070		
LIQUID N.N RATE			0.086	
SPACING N RATE				0.086
TABLE	LIQUID N SPACING N RATE YEARS			
SED	0.110			
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING.N RATE	0.122			

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.069	5.8
BLOCK.WP.SP	17	0.122	10.2

4TH CUT MEAN DM% 17.3

78/R/CS/161

5TH CUT (8/9/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	0.69	0.79	0.74	
UREA+INH	0.62	0.77	0.70	
MEAN	0.65	0.78	0.72	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	0.46	0.73	1.03	0.74
UREA+INH	0.43	0.66	0.99	0.70
MEAN	0.45	0.70	1.01	0.72
N RATE	250	375	500	MEAN
SPACING				
30 CM	0.42	0.53	1.01	0.65
60 CM	0.47	0.86	1.01	0.78
MEAN	0.45	0.70	1.01	0.72
YEARS	75+6+8	75+6+7+8	MEAN	
LIQUID N				
UREA	0.79	0.69	0.74	
UREA+INH	0.74	0.65	0.70	
MEAN	0.77	0.67	0.72	
YEARS	75+6+8	75+6+7+8	MEAN	
SPACING				
30 CM	0.71	0.60	0.65	
60 CM	0.83	0.73	0.78	
MEAN	0.77	0.67	0.72	

78/R/CS/161

5TH CUT (8/9/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

YEARS	75+6+8	75+6+7+8	MEAN				
N RATE							
250	0.49	0.40	0.45				
375	0.73	0.66	0.70				
500	1.08	0.94	1.01				
MEAN	0.77	0.67	0.72				
SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	0.43	0.58	1.05	0.48	0.88	1.02	
UREA+INH	0.41	0.48	0.97	0.46	0.84	1.01	
SPACING	30 CM			60 CM			
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8			
LIQUID N							
UREA	0.73	0.65	0.86	0.72			
UREA+INH	0.69	0.55	0.80	0.74			
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
UREA	0.51	0.40	0.78	0.68	1.09	0.98	
UREA+INH	0.48	0.39	0.67	0.65	1.08	0.91	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
SPACING							
30 CM	0.48	0.37	0.56	0.50	1.08	0.94	
60 CM	0.51	0.43	0.89	0.83	1.08	0.95	
N RATE		250		375		500	
YEARS		75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8
LIQUID N							
SPACING							
UREA	30 CM	0.49	0.37	0.65	0.51	1.04	1.06
	60 CM	0.54	0.43	0.92	0.84	1.13	0.90
UREA+INH	30 CM	0.47	0.36	0.47	0.49	1.12	0.82
	60 CM	0.49	0.42	0.87	0.81	1.03	1.00
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75+6+8		0.74	0.99	1.07	1.21	1.29	1.00
75+6+7+8		0.56	0.94	1.23	1.13	1.05	0.98
MEAN	0.63	0.65	0.96	1.15	1.17	1.17	0.95
GRAND MEAN	0.81						

78/R/CS/161

5TH CUT (8/9/78) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.086	0.035	0.035	0.043

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.033 0.052*	0.050	0.061	0.061

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.119	0.048	0.048	0.059
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.116			
LIQUID N		0.047		
SPACING			0.047	
N RATE				0.058

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.086	0.068	0.084	0.084
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.067		
LIQUID N.N RATE			0.082	
SPACING N RATE				0.082

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.119
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.116

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.086	10.6
BLOCK.WP.SP	17	0.116	14.3

5TH CUT MEAN DM% 18.1

78/R/CS/161

6TH CUT (31/10/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	0.18	0.32	0.25	
UREA+INH	0.15	0.30	0.22	
MEAN	0.17	0.31	0.24	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	0.08	0.22	0.45	0.25
UREA+INH	0.08	0.20	0.39	0.22
MEAN	0.08	0.21	0.42	0.24
N RATE	250	375	500	MEAN
SPACING				
30 CM	0.07	0.10	0.32	0.17
60 CM	0.09	0.32	0.52	0.31
MEAN	0.08	0.21	0.42	0.24
YEARS	75+6+8	75+6+7+8	MEAN	
LIQUID N				
UREA	0.23	0.28	0.25	
UREA+INH	0.23	0.21	0.22	
MEAN	0.23	0.24	0.24	
YEARS	75+6+8	75+6+7+8	MEAN	
SPACING				
30 CM	0.14	0.19	0.17	
60 CM	0.33	0.29	0.31	
MEAN	0.23	0.24	0.24	

78/R/CS/161

6TH CUT (31/10/78) DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

YEARS	75+6+8	75+6+7+8	MEAN				
N RATE							
250	0.09	0.08	0.08				
375	0.20	0.22	0.21				
500	0.41	0.43	0.42				
MEAN	0.23	0.24	0.24				
SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	0.08	0.12	0.35	0.08	0.33	0.55	
UREA+INH	0.07	0.09	0.29	0.10	0.31	0.48	
SPACING	30 CM			60 CM			
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8			
LIQUID N							
UREA	0.14	0.23	0.32	0.32			
UREA+INH	0.14	0.16	0.33	0.26			
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
UREA	0.07	0.09	0.21	0.24	0.40	0.50	
UREA+INH	0.10	0.07	0.19	0.20	0.41	0.36	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
SPACING							
30 CM	0.08	0.07	0.08	0.12	0.25	0.40	
60 CM	0.09	0.09	0.32	0.32	0.57	0.47	
N RATE		250		375		500	
YEARS		75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8
LIQUID N							
SPACING							
UREA	30 CM	0.07	0.09	0.12	0.11	0.22	0.49
	60 CM	0.07	0.09	0.30	0.36	0.58	0.52
UREA+INH	30 CM	0.09	0.04	0.05	0.13	0.27	0.31
	60 CM	0.11	0.09	0.33	0.28	0.56	0.41
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75+6+8		0.30	0.28	0.43	0.68	0.69	0.48
75+6+7+8		0.13	0.39	0.73	0.54	0.65	0.49
MEAN	0.15	0.21	0.33	0.58	0.61	0.67	0.43

GRAND MEAN 0.31

78/R/CS/161

6TH CUT (31/10/78) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.077	0.032	0.032	0.039

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.022 0.034*	0.045	0.055	0.055

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.094	0.038	0.038	0.047
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.076			
LIQUID N		0.031		
SPACING			0.031	
N RATE				0.038

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.077	0.054	0.066	0.066
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.044		
LIQUID N.N RATE			0.054	
SPACING N RATE				0.054

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.094
EXCEPT WHOCOMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.076

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.077	24.9
BLOCK.WP.SP	17	0.076	24.5

6TH CUT MEAN DM% 29.4

78/R/CS/161

TOTAL OF 6 CUTS DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	10.20	9.92	10.06	
UREA+INH	10.03	9.67	9.85	
MEAN	10.12	9.79	9.96	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	8.55	10.43	11.19	10.06
UREA+INH	8.69	10.01	10.86	9.85
MEAN	8.62	10.22	11.02	9.96
N RATE	250	375	500	MEAN
SPACING				
30 CM	8.66	10.28	11.41	10.12
60 CM	8.58	10.17	10.64	9.79
MEAN	8.62	10.22	11.02	9.96
YEARS	75+6+8	75+6+7+8	MEAN	
LIQUID N				
UREA	10.33	9.79	10.06	
UREA+INH	10.13	9.58	9.85	
MEAN	10.23	9.68	9.96	
YEARS	75+6+8	75+6+7+8	MEAN	
SPACING				
30 CM	10.43	9.80	10.12	
60 CM	10.03	9.56	9.79	
MEAN	10.23	9.68	9.96	

78/R/CS/161

TOTAL OF 6 CUTS DRY MATTER TONNES/HECTARE

***** TABLES OF MEANS *****

YEARS	75+6+8	75+6+7+8	MEAN				
N RATE							
250	8.71	8.53	8.62				
375	10.40	10.05	10.22				
500	11.58	10.47	11.02				
MEAN	10.23	9.68	9.96				
SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	8.48	10.55	11.57	8.62	10.31	10.82	
UREA+INH	8.84	10.01	11.25	8.54	10.02	10.46	
SPACING	30 CM			60 CM			
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8			
LIQUID N							
UREA	10.51	9.89	10.15	9.68			
UREA+INH	10.35	9.72	9.91	9.43			
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
UREA	8.64	8.46	10.56	10.30	11.79	10.60	
UREA+INH	8.78	8.60	10.23	9.79	11.37	10.34	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
SPACING							
30 CM	8.92	8.40	10.44	10.12	11.92	10.89	
60 CM	8.50	8.66	10.35	9.98	11.24	10.04	
N RATE	250		375		500		
YEARS	75+6+8	75+6+7+8	75+6+8	75+6+7+8	75+6+8	75+6+7+8	
LIQUID N							
SPACING							
UREA	30 CM	8.81	8.15	10.69	10.41	12.03	11.10
	60 CM	8.46	8.77	10.43	10.19	11.55	10.09
UREA+INH	30 CM	9.03	8.65	10.19	9.82	11.82	10.68
	60 CM	8.53	8.54	10.27	9.76	10.93	10.00
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75+6+8		6.55	8.41	9.27	10.72	11.35	9.26
75+6+7+8		5.73	7.80	9.84	10.09	10.77	8.84
MEAN	5.14	6.14	8.11	9.55	10.41	11.06	8.40

GRAND MEAN 9.69

78/R/CS/161

TOTAL OF 6 CUTS DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.258	0.105	0.105	0.129

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.095 0.147*	0.149	0.182	0.182

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.347	0.142	0.142	0.174
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.328			
LIQUID N		0.134		
SPACING			0.134	
N RATE				0.164

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.258	0.200	0.245	0.245
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.190		
LIQUID N.N RATE			0.232	
SPACING N RATE				0.232

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.347
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.328

* USE ONLY IN TABLES INVOLVING SOLID N

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.258	2.7
BLOCK.WP.SP	17	0.328	3.4

TOTAL OF 6 CUTS MEAN DM% 19.1

SUBPLOT AREA HARVESTED 0.00141