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Yields of the Field Experiments 1977

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

Rothamsted Research

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77/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 third year, old grass.

For previous years see 76/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) |
| 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: |
| 75-77 | 1975-77 |
| 75-76 | 1975-76 only |
| SOLID N | plus six whole plots given 'Nitro-Chalk', dressing divided between cuts (kg N, total/annum): |
| 0 | |
| 100 | |
| 200 | |
| 300 | |
| 400 | |
| 500 | |

with sub plots YEARS as above.

- 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.

77/R/CS/161

Basal applications: Manures: (0:14:28) at 1000 kg.

Cultivations, etc.:— PK applied: 13 Dec, 1976. Aqueous urea and inhibitors injected: 4 Mar, 1977. 'Nitro-Chalk' applied: 10 Mar, 6 May, 2 June, 1 July, 8 Aug, 6 Sept. Cut: 4 May, 31 May, 30 June, 2 Aug, 5 Sept, 8 Nov.

NOTE: Grass samples were taken for N determinations.

1ST CUT (4/5/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	0.92	0.96	0.94	
UREA+INH	0.93	0.76	0.85	
MEAN	0.93	0.86	0.89	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	0.95	0.97	0.91	0.94
UREA+INH	0.89	0.82	0.82	0.85
MEAN	0.92	0.89	0.87	0.89
N RATE	250	375	500	MEAN
SPACING				
30 CM	0.95	0.90	0.94	0.93
60 CM	0.89	0.89	0.80	0.86
MEAN	0.92	0.89	0.87	0.89
YEARS	75-77	75-76	MEAN	
LIQUID N				
UREA	1.42	0.47	0.94	
UREA+INH	1.25	0.44	0.85	
MEAN	1.33	0.45	0.89	
YEARS	75-77	75-76	MEAN	
SPACING				
30 CM	1.51	0.34	0.93	
60 CM	1.15	0.56	0.86	
MEAN	1.33	0.45	0.89	
YEARS	75-77	75-76	MEAN	
N RATE				
250	1.44	0.40	0.92	
375	1.31	0.48	0.89	
500	1.25	0.48	0.87	
MEAN	1.33	0.45	0.89	

77/R/CS/161

1ST CUT (4/5/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	0.90	0.97	0.89	0.99	0.96	0.92	
UREA+INH	1.00	0.82	0.98	0.78	0.82	0.67	
SPACING	30 CM			60 CM			
YEARS	75-77	75-76	75-77	75-76			
LIQUID N							
UREA	1.51	0.34	1.33	0.59			
UREA+INH	1.52	0.34	0.98	0.54			
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	1.51	0.38	1.39	0.54	1.35	0.47	
UREA+INH	1.37	0.42	1.22	0.41	1.15	0.49	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
SPACING							
30 CM	1.60	0.30	1.44	0.35	1.50	0.37	
60 CM	1.28	0.50	1.17	0.60	1.01	0.59	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	30 CM	1.52	0.29	1.53	0.42	1.47	0.32
	60 CM	1.50	0.48	1.25	0.67	1.23	0.62
UREA+INH	30 CM	1.68	0.32	1.35	0.28	1.53	0.43
	60 CM	1.05	0.52	1.10	0.54	0.78	0.56
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75-77		0.61	0.40	0.71	0.72	1.31	0.75
75-76		0.31	0.24	0.16	0.19	0.25	0.23
MEAN	0.40	0.46	0.32	0.44	0.45	0.78	0.47

GRAND MEAN 0.75

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1ST CUT (4/5/77) 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	0.054 0.083*	0.102	0.124	0.124

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.219	0.090	0.090	0.110
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.186			
LIQUID N		0.076		
SPACING			0.076	
N RATE				0.093

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.176	0.127	0.155	0.155
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.107		
LIQUID N.N RATE			0.131	
SPACING.N RATE				0.131

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.219
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.186

* USE ONLY IN TABLES INVOLVING SOLID N

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.176	22.7
BLOCK.WP.SP	17	0.186	24.0

1ST CUT MEAN DM% 19.3

77/R/CS/161

2ND CUT (31/5/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	3.07	3.06	3.07	
UREA+INH	3.19	3.23	3.21	
MEAN	3.13	3.15	3.14	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	2.73	3.14	3.32	3.07
UREA+INH	2.97	3.09	3.57	3.21
MEAN	2.85	3.12	3.45	3.14
N RATE	250	375	500	MEAN
SPACING				
30 CM	2.89	3.11	3.39	3.13
60 CM	2.82	3.12	3.51	3.15
MEAN	2.85	3.12	3.45	3.14
YEARS	75-77	75-76	MEAN	
LIQUID N				
UREA	4.04	2.10	3.07	
UREA+INH	4.04	2.38	3.21	
MEAN	4.04	2.24	3.14	
YEARS	75-77	75-76	MEAN	
SPACING				
30 CM	4.19	2.07	3.13	
60 CM	3.88	2.41	3.15	
MEAN	4.04	2.24	3.14	
YEARS	75-77	75-76	MEAN	
N RATE				
250	3.90	1.81	2.85	
375	4.04	2.20	3.12	
500	4.18	2.71	3.45	
MEAN	4.04	2.24	3.14	

77/R/CS/161

2ND CUT (31/5/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	2.84	3.04	3.34	2.62	3.25	3.31	
UREA+INH	2.93	3.19	3.44	3.01	3.00	3.70	
SPACING	30 CM		60 CM				
YEARS	75-77	75-76	75-77	75-76			
LIQUID N							
UREA	4.17	1.97	3.90	2.22			
UREA+INH	4.22	2.16	3.87	2.60			
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	3.85	1.61	4.09	2.20	4.17	2.48	
UREA+INH	3.94	2.00	3.98	2.20	4.20	2.94	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
SPACING							
30 CM	4.04	1.74	4.20	2.02	4.34	2.43	
60 CM	3.76	1.87	3.87	2.38	4.03	2.98	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	4.00	1.68	4.17	1.90	4.34	2.33	
UREA+INH	3.70	1.54	4.01	2.49	3.99	2.64	
SPACING							
30 CM	4.07	1.80	4.24	2.14	4.34	2.54	
60 CM	3.81	2.21	3.73	2.26	4.06	3.33	
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75-77		2.28	2.83	3.52	3.65	3.95	3.25
75-76		1.44	1.68	1.72	1.68	1.53	1.61
MEAN	1.09	1.86	2.25	2.62	2.67	2.74	2.21

GRAND MEAN 2.83

77/R/CS/161

2ND CUT (31/5/77) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.192	0.078	0.076	0.096

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.057 0.089*	0.111	0.135	0.135

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.238	0.097	0.097	0.119
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.199			
LIQUID N		0.081		
SPACING			0.081	
N RATE				0.100

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.192	0.137	0.168	0.168
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.115		
LIQUID N.N RATE			0.141	
SPACING.N RATE				0.141

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.238
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.199

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.192	6.5
BLOCK.WP.SP	17	0.199	6.8

2ND CUT MEAN DM% 19.8

77/R/CS/161

3RD CUT (30/6/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	0.82	0.93	0.88	
UREA+INH	0.87	0.86	0.87	
MEAN	0.84	0.90	0.87	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	0.83	0.95	0.85	0.88
UREA+INH	0.76	1.00	0.85	0.87
MEAN	0.79	0.97	0.85	0.87
N RATE	250	375	500	MEAN
SPACING				
30 CM	0.70	0.97	0.87	0.84
60 CM	0.88	0.98	0.83	0.90
MEAN	0.79	0.97	0.85	0.87
YEARS	75-77	75-76	MEAN	
LIQUID N				
UREA	0.85	0.90	0.88	
UREA+INH	0.81	0.92	0.87	
MEAN	0.83	0.91	0.87	
YEARS	75-77	75-76	MEAN	
SPACING				
30 CM	0.76	0.93	0.84	
60 CM	0.90	0.90	0.90	
MEAN	0.83	0.91	0.87	
YEARS	75-77	75-76	MEAN	
N RATE				
250	0.80	0.78	0.79	
375	0.96	0.98	0.97	
500	0.73	0.97	0.85	
MEAN	0.83	0.91	0.87	

77/R/CS/161

3RD CUT (30/6/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	0.71	0.94	0.82	0.94	0.96	0.88	
UREA+INH	0.69	0.99	0.92	0.83	1.00	0.77	
SPACING	30 CM			60 CM			
YEARS	75-77	75-76	75-77	75-76			
LIQUID N							
UREA	0.76	0.88	0.93	0.93			
UREA+INH	0.76	0.98	0.86	0.87			
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	0.82	0.83	1.00	0.90	0.72	0.98	
UREA+INH	0.77	0.74	0.93	1.06	0.73	0.96	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
SPACING							
30 CM	0.67	0.73	0.95	0.99	0.67	1.07	
60 CM	0.93	0.84	0.98	0.98	0.79	0.87	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
SPACING							
UREA	30 CM	0.65	0.77	0.99	0.88	0.65	0.99
	60 CM	1.00	0.88	1.01	0.92	0.79	0.98
UREA+INH	30 CM	0.69	0.69	0.90	1.09	0.69	1.15
	60 CM	0.86	0.80	0.95	1.04	0.78	0.76
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75-77		0.96	1.16	1.24	1.15	0.97	1.10
75-76		0.63	0.67	0.68	0.76	0.86	0.72
MEAN	0.56	0.79	0.91	0.96	0.96	0.91	0.85

GRAND MEAN 0.86

77/R/CS/161

3RD CUT (30/6/77) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.119	0.049	0.049	0.059

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.033 0.052*	0.069	0.084	0.084

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.144	0.059	0.059	0.072
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.115			
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	0.119	0.083	0.102	0.102
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	0.144
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.115

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.119	13.5
BLOCK.WP.SP	17	0.115	13.1

3RD CUT MEAN DM% 19.1

77/R/CS/161

4TH CUT (2/8/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	1.29	1.30	1.30	
UREA+INH	1.08	1.37	1.23	
MEAN	1.19	1.34	1.26	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	0.81	1.41	1.67	1.30
UREA+INH	0.80	1.42	1.47	1.23
MEAN	0.80	1.41	1.57	1.26
N RATE	250	375	500	MEAN
SPACING				
30 CM	0.68	1.30	1.58	1.19
60 CM	0.93	1.53	1.55	1.34
MEAN	0.80	1.41	1.57	1.26
YEARS	75-77	75-76	MEAN	
LIQUID N				
UREA	1.68	0.91	1.30	
UREA+INH	1.39	1.06	1.23	
MEAN	1.54	0.98	1.26	
YEARS	75-77	75-76	MEAN	
SPACING				
30 CM	1.45	0.92	1.19	
60 CM	1.63	1.04	1.34	
MEAN	1.54	0.98	1.26	
YEARS	75-77	75-76	MEAN	
N RATE				
250	1.01	0.60	0.80	
375	1.81	1.02	1.41	
500	1.80	1.33	1.57	
MEAN	1.54	0.98	1.26	

77/R/CS/161

4TH CUT (2/8/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	0.67	1.36	1.84	0.95	1.46	1.50	
UREA+INH	0.68	1.25	1.33	0.91	1.59	1.61	
SPACING	30 CM		60 CM				
YEARS	75-77	75-76	75-77	75-76			
LIQUID N							
UREA	1.68	0.90	1.69	0.91			
UREA+INH	1.22	0.95	1.57	1.17			
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	1.10	0.53	1.89	0.93	2.07	1.27	
UREA+INH	0.92	0.67	1.73	1.11	1.53	1.40	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
SPACING							
30 CM	0.80	0.56	1.68	0.92	1.87	1.30	
60 CM	1.23	0.64	1.93	1.12	1.73	1.37	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	0.82	0.53	1.84	0.88	2.38	1.30	
UREA+INH	0.78	0.58	1.53	0.97	1.36	1.29	
SPACING							
30 CM	0.82	0.53	1.84	0.88	2.38	1.30	
60 CM	1.39	0.52	1.94	0.99	1.76	1.24	
UREA+INH	0.78	0.58	1.53	0.97	1.36	1.29	
SPACING							
30 CM	0.78	0.58	1.53	0.97	1.36	1.29	
60 CM	1.07	0.76	1.93	1.25	1.71	1.50	
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75-77		0.66	1.00	1.62	1.66	1.87	1.36
75-76		0.40	0.41	0.58	0.70	0.87	0.59
MEAN	0.29	0.53	0.71	1.10	1.18	1.37	0.86

GRAND MEAN 1.13

77/R/CS/161

4TH CUT (2/8/77) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.168	0.068	0.068	0.084

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.050 0.078*	0.097	0.119	0.119

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.208	0.085	0.085	0.104
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.174			
LIQUID N		0.071		
SPACING			0.071	
N RATE				0.087

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.168	0.120	0.147	0.147
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.100		
LIQUID N.N RATE			0.123	
SPACING.N RATE				0.123

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.208
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.174

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.168	14.2
BLOCK.WP.SP	17	0.174	14.8

4TH CUT MEAN DM% 25.5

77/R/CS/161

5TH CUT (5/9/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	0.96	1.04	1.00	
UREA+INH	0.94	1.09	1.01	
MEAN	0.95	1.07	1.01	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	0.59	1.06	1.35	1.00
UREA+INH	0.61	1.04	1.39	1.01
MEAN	0.60	1.05	1.37	1.01
N RATE	250	375	500	MEAN
SPACING				
30 CM	0.48	0.99	1.38	0.95
60 CM	0.72	1.12	1.36	1.07
MEAN	0.60	1.05	1.37	1.01
YEARS	75-77	75-76	MEAN	
LIQUID N				
UREA	1.34	0.66	1.00	
UREA+INH	1.36	0.66	1.01	
MEAN	1.35	0.66	1.01	
YEARS	75-77	75-76	MEAN	
SPACING				
30 CM	1.26	0.64	0.95	
60 CM	1.45	0.68	1.07	
MEAN	1.35	0.66	1.01	
YEARS	75-77	75-76	MEAN	
N RATE				
250	0.77	0.43	0.60	
375	1.43	0.67	1.05	
500	1.86	0.88	1.37	
MEAN	1.35	0.66	1.01	

77/R/CS/161

5TH CUT (5/9/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	0.50	0.99	1.38	0.68	1.13	1.32	
UREA+INH	0.45	0.98	1.38	0.76	1.10	1.40	
SPACING	30 CM		60 CM				
YEARS	75-77	75-76	75-77	75-76			
LIQUID N							
UREA	1.27	0.64	1.42	0.67			
UREA+INH	1.25	0.63	1.48	0.69			
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	0.74	0.44	1.42	0.71	1.87	0.83	
UREA+INH	0.79	0.42	1.44	0.64	1.86	0.92	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
SPACING							
30 CM	0.56	0.39	1.32	0.66	1.90	0.86	
60 CM	0.97	0.47	1.55	0.69	1.83	0.89	
LIQUID N	N RATE	250		375		500	
	YEARS	75-77	75-76	75-77	75-76	75-77	75-76
SPACING							
UREA	30 CM	0.54	0.46	1.38	0.61	1.89	0.86
	60 CM	0.94	0.42	1.46	0.80	1.85	0.80
UREA+INH	30 CM	0.59	0.32	1.25	0.71	1.91	0.86
	60 CM	1.00	0.52	1.63	0.58	1.81	0.98
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75-77		0.86	1.32	1.69	1.98	1.90	1.55
75-76		0.20	0.36	0.49	0.55	0.68	0.45
MEAN	0.24	0.53	0.84	1.09	1.27	1.29	0.87

GRAND MEAN 0.96

77/R/CS/161

5TH CUT (5/9/77) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.125	0.051	0.051	0.062
TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.053 0.083*	0.072	0.088	0.088
TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.180	0.074	0.074	0.090
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.185			
LIQUID N		0.075		
SPACING			0.075	
N RATE				0.092
TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.125	0.104	0.128	0.128
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.107		
LIQUID N.N RATE			0.131	
SPACING.N RATE				0.131
TABLE	LIQUID N SPACING N RATE YEARS			
SED	0.180			
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING.N RATE	0.185			

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.125	12.4
BLOCK.WP.SP	17	0.185	18.4

5TH CUT MEAN DM% 20.3

77/R/CS/161

6TH CUT (8/11/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	1.04	1.38	1.21	
UREA+INH	1.06	1.27	1.17	
MEAN	1.05	1.33	1.19	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	0.80	1.34	1.48	1.21
UREA+INH	0.59	1.26	1.65	1.17
MEAN	0.70	1.30	1.57	1.19
N RATE	250	375	500	MEAN
SPACING				
30 CM	0.64	1.04	1.48	1.05
60 CM	0.75	1.57	1.65	1.33
MEAN	0.70	1.30	1.57	1.19
YEARS	75-77	75-76	MEAN	
LIQUID N				
UREA	1.49	0.93	1.21	
UREA+INH	1.46	0.87	1.17	
MEAN	1.48	0.90	1.19	
YEARS	75-77	75-76	MEAN	
SPACING				
30 CM	1.26	0.84	1.05	
60 CM	1.69	0.96	1.33	
MEAN	1.48	0.90	1.19	
YEARS	75-77	75-76	MEAN	
N RATE				
250	0.82	0.57	0.70	
375	1.64	0.96	1.30	
500	1.96	1.17	1.57	
MEAN	1.48	0.90	1.19	

77/R/CS/161

6TH CUT (8/11/77) DRY MATTER TONNES/HECTARE

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

SPACING	30 CM				60 CM		
N RATE	250	375	500		250	375	500
LIQUID N							
UREA	0.70	1.04	1.39		0.90	1.64	1.58
UREA+INH	0.57	1.03	1.57		0.61	1.49	1.73
SPACING	30 CM			60 CM			
YEARS	75-77	75-76		75-77	75-76		
LIQUID N							
UREA	1.22	0.87		1.76	0.99		
UREA+INH	1.30	0.82		1.62	0.93		
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	0.92	0.68	1.67	1.02	1.89	1.08	
UREA+INH	0.73	0.45	1.62	0.90	2.04	1.26	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
SPACING							
30 CM	0.71	0.56	1.28	0.79	1.79	1.17	
60 CM	0.93	0.57	2.01	1.13	2.13	1.18	
LIQUID N	N RATE	250		375		500	
	YEARS	75-77	75-76	75-77	75-76	75-77	75-76
	SPACING						
UREA	30 CM	0.79	0.61	1.21	0.87	1.67	1.11
	60 CM	1.05	0.76	2.13	1.16	2.11	1.05
UREA+INH	30 CM	0.63	0.51	1.35	0.71	1.91	1.22
	60 CM	0.82	0.39	1.89	1.09	2.16	1.30
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75-77		0.91	1.64	1.67	2.03	2.20	1.69
75-76		0.44	0.36	0.37	0.82	0.92	0.58
MEAN	0.40	0.68	1.00	1.02	1.42	1.56	1.01

GRAND MEAN 1.13

77/R/CS/161

6TH CUT (8/11/77) DRY MATTER TONNES/HECTARE

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

TABLE	SOLID N	LIQUID N	SPACING	N RATE
SED	0.245	0.100	0.100	0.123

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.065 0.101*	0.142	0.173	0.173

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.293	0.120	0.120	0.146
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.065			
LIQUID N		0.092		
SPACING			0.092	
N RATE				0.113

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.245	0.169	0.207	0.207
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.131		
LIQUID N.N RATE			0.160	
SPACING.N RATE				0.160

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.293
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.226

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.245	20.9
BLOCK.WP.SP	17	0.226	19.3

6TH CUT MEAN DM% 22.5

77/R/CS/161

TOTAL OF 6 CUTS DRY MATTER TONNES/HECTARE

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

SPACING	30 CM	60 CM	MEAN	
LIQUID N				
UREA	8.11	8.67	8.39	
UREA+INH	8.07	8.59	8.33	
MEAN	8.09	8.63	8.36	
N RATE	250	375	500	MEAN
LIQUID N				
UREA	6.71	8.87	9.59	8.39
UREA+INH	6.61	8.63	9.74	8.33
MEAN	6.66	8.75	9.66	8.36
N RATE	250	375	500	MEAN
SPACING				
30 CM	6.33	8.30	9.63	8.09
60 CM	6.99	9.20	9.70	8.63
MEAN	6.66	8.75	9.66	8.36
YEARS	75-77	75-76	MEAN	
LIQUID N				
UREA	10.82	5.96	8.39	
UREA+INH	10.32	6.33	8.33	
MEAN	10.57	6.15	8.36	
YEARS	75-77	75-76	MEAN	
SPACING				
30 CM	10.43	5.74	8.09	
60 CM	10.70	6.55	8.63	
MEAN	10.57	6.15	8.36	
YEARS	75-77	75-76	MEAN	
N RATE				
250	8.73	4.59	6.66	
375	11.19	6.31	8.75	
500	11.79	7.54	9.66	
MEAN	10.57	6.15	8.36	

77/R/CS/161

TOTAL OF 6 CUTS DRY MATTER TONNES/HECTARE

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

SPACING	30 CM			60 CM			
N RATE	250	375	500	250	375	500	
LIQUID N							
UREA	6.33	8.34	9.65	7.09	9.41	9.52	
UREA+INH	6.33	8.26	9.62	6.89	9.00	9.87	
SPACING	30 CM		60 CM				
YEARS	75-77	75-76	75-77	75-76			
LIQUID N							
UREA	10.61	5.61	11.03	6.32			
UREA+INH	10.26	5.87	10.38	6.79			
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
LIQUID N							
UREA	8.94	4.47	11.45	6.30	12.06	7.11	
UREA+INH	8.52	4.70	10.92	6.33	11.52	7.97	
N RATE	250		375		500		
YEARS	75-77	75-76	75-77	75-76	75-77	75-76	
SPACING							
30 CM	8.38	4.28	10.86	5.73	12.06	7.20	
60 CM	9.09	4.89	11.51	6.89	11.51	7.88	
	N RATE	250		375		500	
	YEARS	75-77	75-76	75-77	75-76	75-77	75-76
LIQUID N							
UREA	SPACING						
	30 CM	8.31	4.34	11.11	5.57	12.39	6.91
	60 CM	9.58	4.60	11.79	7.03	11.73	7.32
UREA+INH	30 CM	8.44	4.22	10.61	5.90	11.74	7.50
	60 CM	8.60	5.19	11.23	6.76	11.30	8.44
SOLID N	0	100	200	300	400	500	MEAN
YEARS							
75-77		6.28	8.36	10.46	11.20	12.21	9.70
75-76		3.41	3.71	4.00	4.69	5.10	4.18
MEAN	2.98	4.85	6.04	7.23	7.95	8.66	6.28

GRAND MEAN 7.67

77/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	0.538	0.220	0.220	0.269

TABLE	YEARS	LIQUID N SPACING	LIQUID N N RATE	SPACING N RATE
SED	0.107 0.166*	0.311	0.380	0.380

TABLE	SOLID N YEARS	LIQUID N YEARS	SPACING YEARS	N RATE YEARS
SED	0.599	0.244	0.244	0.299
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
SOLID N	0.372			
LIQUID N		0.152		
SPACING			0.152	
N RATE				0.186

TABLE	LIQUID N SPACING N RATE	LIQUID N SPACING YEARS	LIQUID N N RATE YEARS	SPACING N RATE YEARS
SED	0.538	0.346	0.423	0.423
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:				
LIQUID N.SPACING		0.215		
LIQUID N.N RATE			0.263	
SPACING.N RATE				0.263

TABLE	LIQUID N SPACING N RATE YEARS
SED	0.599
EXCEPT WHEN COMPARING MEANS WITH SAME LEVEL(S) OF:	
LIQUID N.SPACING.N RATE	0.372

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

STRATUM	DF	SE	CV%
BLOCK.WP	16	0.538	6.8
BLOCK.WP.SP	17	0.372	4.7

TOTAL OF 6 CUTS MEAN DM% 21.1

SUB PLOT AREA HARVESTED 0.00141