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Yields of the Field Experiments 1978

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78/R/CS/13 N Levels to Old Grass - Old Grass

Rothamsted Research

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78/R/CS/13

N LEVELS TO OLD GRASS

Object: To study the effects of a range of nitrogen rates on yield and botanical composition of very old permanent pasture. N fixed by legumes is estimated and the effect of treatments on nutrients available in the soil is also studied - Park Grass Old Plot 6.

Sponsor: A.E. Johnston.

The 14th year, old grass.

For previous years see 'Details' 1973 and 74-77/R/CS/13.

Design: 4 randomised blocks of 10 plots.

Whole plot dimensions: 1.83 x 10.1.

Treatments

TOTAL N	Fertiliser nitrogen (kg N-total per annum applied in four equal dressings as 25:0:16):
0(S)	0 (sprayed with ioxynil plus mecoprop to control legumes, duplicated)
0	0 (duplicated)
75	
150	
225	
300	
375	
450	

NOTE: Ioxynil at 0.84 kg with mecoprop at 2.5 kg in 280 l applied on 13 July, 1978.

Basal applications: Manures: 34 kg P as superphosphate. 11 kg Mg as magnesium sulphate.

Cultivations, etc.: - Basal P and Mg applied: 15 Dec, 1977. NK applied: 28 Feb, 1978, 15 May, 26 June, 7 Aug. Cut: 15 May, 26 June, 7 Aug, 30 Oct.

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1ST CUT (15/5/78) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.56	1.06	1.46	2.10	2.98	3.71	4.01	4.01	2.15

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

TABLE	TOTAL N	
SED	0.273	MIN REP
	0.237	MAX-MIN
	0.193	MAX REP

TOTAL N
 MAX REP 0(S) V 0
 MAX-MIN 0(S) OR 0 V ANY OF REMAINDER
 MIN REP ANY OF REMAINDER

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.386	18.0

1ST CUT MEAN DM% 17.3

2ND CUT (26/6/78) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	1.45	2.36	2.45	3.02	3.18	3.43	3.54	3.32	2.66

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

TABLE	TOTAL N	
SED	0.276	MIN REP
	0.239	MAX-MIN
	0.195	MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.390	14.7

2ND CUT MEAN DM% 18.4

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3RD CUT (7/8/78) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.56	1.66	1.20	1.61	1.93	2.17	2.19	2.22	1.58

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

TABLE	TOTAL N
SED	0.185 MIN REP
	0.160 MAX-MIN
	0.131 MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.261	16.6
3RD CUT MEAN DM%	18.2		

4TH CUT (30/10/78) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.39	1.42	0.96	1.26	1.28	1.93	1.64	1.40	1.21

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

TABLE	TOTAL N
SED	0.219 MIN REP
	0.190 MAX-MIN
	0.155 MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.310	25.7
4TH CUT MEAN DM%	28.5		

78/R/CS/13

TOTAL OF 4 CUTS DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	2.95	6.50	6.07	7.99	9.37	11.24	11.38	10.95	7.59

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

TABLE	TOTAL N
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SED	0.440 MIN REP
	0.381 MAX-MIN
	0.311 MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.622	8.2

TOTAL OF 4 CUTS MEAN DM% 20.6

PLOT AREA HARVESTED 0.00086