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Yields of the Field Experiments 1977

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

Rothamsted Research

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77/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 given a single dressing of P and K annually. 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 13th year, old grass.

For previous years see 'Details' 1973 and 74-76/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 0.42 kg with mecoprop at 1.3 kg in 280 l applied on 27 Apr, 1977.

Basal applications: Manures: 34 kg P as superphosphate. 224 kg K as potassium sulphate. 11 kg Mg as magnesium sulphate.

Cultivations, etc.: - Basal P, K and Mg applied: 2 Dec, 1976. N applied: 14 Mar, 1977, 13 May, 27 June, 15 Aug. Cut: 12 May, 27 June, 15 Aug, 3 Nov.

77/R/CS/13

1ST CUT (12/5/77) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.12	0.66	1.27	2.32	3.28	3.89	4.04	4.01	2.04

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

TABLE	TOTAL N	
SED	0.234	MIN REP
	0.202	MAX-MIN
	0.165	MAX REP

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

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.331	16.2

1ST CUT MEAN DM% 18.5

2ND CUT (27/6/77) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.83	2.00	2.52	3.20	3.55	3.69	3.44	3.49	2.55

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

TABLE	TOTAL N	
SED	0.247	MIN REP
	0.214	MAX-MIN
	0.174	MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.349	13.7

2ND CUT MEAN DM% 22.2

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3RD CUT (15/8/77) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.44	0.84	0.88	1.27	1.42	1.74	1.67	1.81	1.14

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

TABLE	TOTAL N
SED	0.149 MIN REP
	0.129 MAX-MIN
	0.105 MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.211	18.6

3RD CUT MEAN DM% 20.0

4TH CUT (3/11/77) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.44	0.96	1.57	2.66	2.72	3.27	3.01	3.03	1.91

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

TABLE	TOTAL N
SED	0.155 MIN REP
	0.135 MAX-MIN
	0.110 MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.220	11.5

4TH CUT MEAN DM% 17.9

77/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
	1.82	4.46	6.25	9.45	10.98	12.59	12.16	12.34	7.63

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

TABLE	TOTAL N
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SED	0.363 MIN REP
	0.314 MAX-MIN
	0.256 MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.513	6.7

TOTAL OF 4 CUTS MEAN DM% 19.6

PLOT AREA HARVESTED 0.00086