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Yields of the Field Experiments 1976

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

Rothamsted Research

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76/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 12th year, old grass.

For previous years see 65/C/33(t), 66/C/14, 67/C/10(t), 68/C/8(t), 69/R/CS/13(t), 70/R/CS/13(t), 71/R/CS/13, 72/R/CS/13(t) and 73-75/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 2,4-D to control legumes, two plots per block)
0	0 (two plots per block)
75	75
150	150
225	225
300	300
375	375
450	450

NOTE: 2,4-D ester applied as 'Dicotox Extra' at 2.1 l in 280 l on 28 Apr, 1976.

Basal applications: 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: 9 Dec, 1975. N applied: 18 Mar, 1976, 14 May and 6 June. Cut: 13 May, 6 June and 3 Oct.

NOTE: Because of severe drought only three cuts were taken and hence only three quarters of the usual TOTAL N rates shown above were applied.

76/R/CS/13

1ST CUT (13/5/76) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.45	1.44	1.84	2.61	3.25	4.40	4.86	4.63	2.54

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

TABLE	TOTAL N	
SED	0.305	MIN REP
	0.264	MAX-MIN
	0.216	MAX REP

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

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.431	17.0

1ST CUT MEAN DM% 22.6

2ND CUT (6/7/76) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.25	0.45	0.43	0.57	0.81	0.71	0.54	0.54	0.50

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

TABLE	TOTAL N	
SED	0.088	MIN REP
	0.076	MAX-MIN
	0.062	MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.125	24.9

2ND CUT MEAN DM% 42.3

76/R/CS/13

3RD CUT (5/10/76) DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	0.45	0.57	0.98	1.09	1.58	1.68	1.64	1.53	1.06

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

TABLE	TOTAL N	
SED	0.102	MIN REP
	0.088	MAX-MIN
	0.072	MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.144	13.6

3RD CUT MEAN DM% 16.5

TOTAL OF 3 CUTS DRY MATTER TONNES/HECTARE

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

TOTAL N	0(S)	0	75	150	225	300	375	450	MEAN
	1.15	2.46	3.25	4.27	5.63	6.79	7.05	6.76	4.10

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

TABLE	TOTAL N	
SED	0.283	MIN REP
	0.245	MAX-MIN
	0.200	MAX REP

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

STRATUM	DF	SE	CV%
BLOCK.WP	29	0.400	9.8

TOTAL OF 3 CUTS MEAN DM% 27.1

PLOT AREA HARVESTED 0.00086