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76/W/CS/11 Soil Structure - Ryegrass

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Rothamsted Research (1977) *76/W/CS/11 Soil Structure - Ryegrass ; Yields Of The Field Experiments 1976*, pp 126 - 127 - DOI: <https://doi.org/10.23637/ERADOC-1-15>

75/W/CS/11

SOIL STRUCTURE

Object: To study the residual effects of peat, at a range of nitrogen levels, on the yield of ryegrass - Woburn Stackyard II.

Sponsor: A.E. Johnston.

The 13th year, ryegrass.

For previous years see 64/C/20(t), 65/C/19(t), 66/C/11(t), 67/C/8(t), 68/C/31(t), 69/W/CS/11(t), 70/W/CS/11(t), 71/W/CS/11, 72/W/CS/11(t) and 73-75/W/CS/11.

Design: Single replicate of 5 x 4. Levels of peat in 4 randomised blocks of 5 plots.

Whole plot dimensions: 2.13 x 3.05.

Treatments: All combinations of:-

1. PEAT Peat (tonnes dry matter - total applied 1963-72):

0	0
8	8
55	55
110	110
165	165

2. NPERCUT Nitrogen fertiliser as ammonium nitrate (kg N per cut), cumulative to previous treatments:

0	0
30	30
60	60
90	90

Basal applications: Manures: Ground chalk at 2.5 tonnes. P at 85 kg, as triple superphosphate, K at 300 kg, as potassium bicarbonate, Mg at 55 kg, as magnesium sulphate. Weedkillers: Benazolin with 2,4-DB and MCPA ('Ley Cornox' at 8.4 l in 280 l).

Seed: RvP ryegrass, sown at 50 kg.

Cultivations, etc.: - Ground chalk, P, K and Mg applied, plots dug by hand: 11 Dec, 1975. N applied, seed sown: 22 Mar, 1976. Weedkiller applied: 25 May. Cut, N applied: 24 June. Cut: 5 Nov.

NOTES: (1) Soil samples were taken after the second cut for P and K analysis.

(2) Crop samples were taken for N, P, K and Mg analysis.

76/W/CS/11

1ST CUT (24/6/76) DRY MATTER TONNES/HECTARE

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

NPERCUT	0	30	60	90	MEAN
PEAT					
0	0.26	0.76	1.43	1.70	1.04
8	0.41	0.84	0.97	1.49	0.93
55	0.51	1.00	1.24	1.47	1.06
110	0.46	1.10	2.36	2.06	1.49
165	0.59	1.41	1.72	2.13	1.46
MEAN	0.45	1.02	1.54	1.77	1.20

1ST CUT MEAN DM% 34.4

1ST CUT PLOT AREA HARVESTED 0.00046

2ND CUT (5/11/76) DRY MATTER TONNES/HECTARE

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

NPERCUT	0	30	60	90	MEAN
PEAT					
0	0.31	0.67	0.79	0.95	0.68
8	0.47	0.74	0.84	0.78	0.71
55	0.49	0.84	0.93	1.00	0.81
110	0.58	0.76	0.96	0.84	0.78
165	0.43	0.85	0.88	1.11	0.82
MEAN	0.46	0.77	0.88	0.94	0.76

2ND CUT MEAN DM% 19.1

2ND CUT PLOT AREA HARVESTED 0.00042

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

NPERCUT	0	30	60	90	MEAN
PEAT					
0	0.57	1.43	2.23	2.65	1.72
8	0.89	1.58	1.81	2.28	1.64
55	1.00	1.84	2.17	2.48	1.87
110	1.04	1.85	3.31	2.89	2.27
165	1.02	2.27	2.60	3.24	2.28
MEAN	0.90	1.79	2.42	2.71	1.96

TOTAL OF 2 CUTS MEAN DM% 26.7