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78/W/CS/11 Soil Structure - Barley

Rothamsted Research

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78/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 15th year, barley.

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 73-77/W/CS/11.

Design: Single replicate of 5 x 4.

Whole plot dimensions: 2.13 x 3.05.

Treatments: All combinations of:-

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

0
8
55
110
165

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

0
50
100
150

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: Ioxynil at 0.52 kg with mecoprop at 1.6 kg in 280 l applied with the fungicide. Fungicide: Tridemorph at 0.53 kg.

Seed: Porthos, dressed with ethirimol, sown at 160 kg.

Cultivations, etc.:- Hand dug: 14 Dec, 1977. Ground chalk, P, K, Mg applied, raked in, seed sown: 7 Mar. Weedkiller with fungicide applied: 19 May. Hand harvested: 16 Aug.

78/W/CS/11

GRAIN TONNES/HECTARE

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

N	0	50	100	150	MEAN
PEAT					
0	2.32	4.74	6.88	6.56	5.12
8	2.05	5.25	6.58	7.53	5.36
55	2.74	4.86	7.07	7.91	5.64
110	2.46	5.30	7.19	7.53	5.62
165	2.69	4.94	6.50	8.08	5.55
MEAN	2.45	5.02	6.84	7.52	5.46

GRAIN MEAN DM% 83.6

STRAW TONNES/HECTARE

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

N	0	50	100	150	MEAN
PEAT					
0	1.80	3.82	6.20	6.49	4.58
8	1.78	4.55	6.08	6.13	4.64
55	2.26	4.06	6.56	7.33	5.05
110	1.99	3.93	6.49	6.13	4.64
165	2.27	4.66	5.87	7.53	5.08
MEAN	2.02	4.20	6.24	6.72	4.80

STRAW MEAN DM% 61.5

PLOT AREA HARVESTED 0.00056