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73/W/CS/11 - Soil Structure - Potatoes

Rothamsted Research

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73/W/CS/11

SOIL STRUCTURE

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

Sponsor: A.E. Johnston.

The eleventh year, potatoes.

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 and 72/W/CS/11(t).

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. Area harvested: 0.00065.

Treatments: All combinations of:-

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

	PEAT
None	0
8	8
55	55
110	110
165	165

2. Nitrogen fertiliser (kg N)

	N
None	0
100	100
200	200
300	300

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. Weedkiller: Linuron at 0.85 kg with paraquat at 0.42 kg ion in 340 l. Insecticide: Menazon at 0.28 kg in 340 l. Insecticide with fungicide: Menazon at 0.28 kg plus mancozeb at 1.3 kg in 340 l.

Seed: Pentland Crown.

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Cultivations, etc.:- Ground chalk applied, plots dug by hand: 28 Nov, 1972.
 P, K and Mg applied, plots rotary cultivated and potatoes planted:
 6 Apr, 1973. Weedkiller applied: 9 May. Insecticide applied: 15 June.
 Insecticide with fungicide applied: 18 June. Lifted: 25 Sept.

NOTE: Soil samples were taken at harvest for analysis of P and K.

TABLES OF MEANS

TOTAL TUBERS: TONNES/HECTARE

PEAT

	0	0	55	110	165	Mean
N						
0	34.8	36.2	36.5	35.9	35.1	35.7
100	48.2	54.2	53.3	57.9	54.5	53.6
200	63.3	56.5	60.5	72.8	67.3	64.1
300	59.1	65.3	83.0	81.1	83.6	74.4
Mean	51.3	53.0	58.3	61.9	60.1	56.9