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78/R/EX/4 Exhaustion Land - Barley

Rothamsted Research

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78/R/EX/4

EXHAUSTION LAND

Object: To study the residual effects of manures, applied 1856-1901, on the yield of continuous barley - Hoosfield.

The 123rd year, barley.

For previous years see 'Details' 1967, 1973 and 74-77/R/EX/4.

Treatments: All combinations of:-

Whole plots

1. PLOTFERT(01) Fertiliser and farmyard manure 1876-1901:

1-	Plot 1 None
2-	Plot 2 None
3D	Plot 3 D
4D	Plot 4 D
5N	Plot 5 N
6N*	Plot 6 N*
7NMIN	Plot 7 N P K Na Mg
8N*MIN	Plot 8 N* P K Na Mg
9P	Plot 9 P
10MIN	Plot 10 P K Na Mg

N	- 96 kg N as ammonium salts
N*	- 96 kg N as nitrate of soda
P	- 34 kg P as superphosphate
K	- 137 kg K as sulphate of potash
Na	- 16 kg Na as sulphate of soda
Mg	- 11 kg Mg as sulphate of magnesia
D	- Farmyard manure at 35 tonnes
MIN	- P K Na Mg

Sub plots

2. N Nitrogen fertiliser (kg N as 'Nitro-Chalk 26') (basal until 1975, on a cyclic system since 1976):

0
48
96
144

For a fuller record of treatments see 'Details' 1967 etc.

Basal applications: Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 4.9 l in 220 l). Fungicide: Tridemorph at 0.53 kg in 220 l.

Seed: Julia, seed dressed with ethirimol, sown at 160 kg.

Cultivations, etc.: - Ploughed: 28 Sept, 1977. Heavy spring-tine cultivated, harrowed, seed sown: 31 Mar, 1978. N applied: 17 May. Weedkillers and fungicide applied: 26 May. Combine harvested: 9 Sept.

78/R/EX/4

GRAIN TONNES/HECTARE

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

N	0	48	96	144	MEAN
PLOTFERT(01)					
1-	1.56	2.27	2.50	2.69	2.26
2-	1.30	1.59	2.06	2.01	1.74
3D	2.51	4.09	4.68	4.62	3.98
4D	1.86	3.72	4.88	4.60	3.76
5N	1.73	2.33	2.60	2.97	2.41
6N*	1.43	1.44	2.22	1.93	1.75
7NMIN	1.99	3.76	4.05	4.45	3.56
8N*MIN	1.62	2.50	4.13	3.48	2.93
9P	1.97	3.52	4.01	4.14	3.41
10MIN	1.40	2.58	4.12	3.80	2.98
MEAN	1.74	2.78	3.52	3.47	2.88

GRAIN MEAN DM% 80.3

STRAW TONNES/HECTARE

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

N	0	48	96	144	MEAN
PLOTFERT(01)					
1-	0.44	0.88	0.96	1.10	0.85
2-	0.36	0.42	0.65	0.51	0.49
3D	1.10	1.79	2.20	2.29	1.84
4D	0.95	1.60	2.45	2.14	1.78
5N	0.51	0.72	1.11	1.31	0.91
6N*	0.36	0.56	0.96	0.72	0.65
7NMIN	0.66	1.62	1.70	2.11	1.52
8N*MIN	0.58	1.31	1.80	1.60	1.32
9P	0.66	1.41	1.77	1.68	1.38
10MIN	0.37	0.95	1.84	1.70	1.21
MEAN	0.60	1.13	1.54	1.52	1.20

STRAW MEAN DM% 90.6

SUB PLOT AREA HARVESTED 0.00728