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Yields of the Field Experiments 1984

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84/R/EX/4 Exhaustion Land - S. Barley

Rothamsted Research

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84/R/EX/4

EXHAUSTION LAND

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

The 129th year, s. barley.

For previous years see 'Details' 1967, 1973 and 74-83/R/EX/4.

Treatments: All combinations of:-

Whole plots

1. PLOTFERT(01) Plot numbers and manuring 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 fertilizer (kg N) as 'Nitro-Chalk' (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: 3, 6-dichloropicolinic acid at 0.07 kg with bromoxynil at 0.34 kg and mecoprop (as 'CMPP' at 4.2 l) in 500 l. Fungicide: Tridemorph at 0.52 kg in 250 l.

Seed: Triumph, seed dressed triadimenol and fuberidazole sown at 160 kg.

Cultivations, etc.:- Ploughed: 12 Sept, 1983. Spring-tine cultivated: 8 Mar, 1984. Seed sown: 10 Mar. N treatments applied: 19 Apr. Weedkillers applied: 25 May. Fungicide applied: 6 June. Combine harvested: 17 Aug.

NOTE: PLOTFERT(01) 2- was severely grazed by hares, no yields.

84/R/EX/4

GRAIN TONNES/HECTARE

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

| N | 0 | 48 | 96 | 144 | MEAN |
|--------------|------|------|------|------|------|
| PLOTFERT(01) | | | | | |
| 1- | 0.78 | 0.54 | 0.79 | 0.82 | 0.73 |
| 2- | * | * | * | * | * |
| 3D | 2.09 | 2.99 | 3.07 | 2.95 | 2.78 |
| 4D | 1.22 | 1.65 | 2.34 | 2.65 | 1.96 |
| 5N | 0.90 | 1.19 | 1.13 | 1.23 | 1.11 |
| 6N* | 0.84 | 0.48 | 0.75 | 1.09 | 0.79 |
| 7NMIN | 1.77 | 2.17 | 2.26 | 2.37 | 2.14 |
| 8N*MIN | 1.38 | 1.69 | 1.69 | 2.10 | 1.71 |
| 9P | 2.34 | 2.26 | 1.64 | 2.46 | 2.17 |
| 10MIN | 1.82 | 2.16 | 2.59 | 2.82 | 2.35 |
| MEAN | 1.46 | 1.68 | 1.81 | 2.05 | 1.75 |

GRAIN MEAN DM% 83.0

STRAW TONNES/HECTARE

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

| N | 0 | 48 | 96 | 144 | MEAN |
|--------------|------|------|------|------|------|
| PLOTFERT(01) | | | | | |
| 1- | 0.34 | 0.21 | 0.27 | 0.41 | 0.31 |
| 2- | * | * | * | * | * |
| 3D | 0.54 | 1.16 | 1.64 | 1.44 | 1.20 |
| 4D | 0.41 | 0.53 | 0.86 | 1.28 | 0.77 |
| 5N | 0.28 | 0.41 | 0.41 | 0.41 | 0.38 |
| 6N* | 0.35 | 0.14 | 0.21 | 0.34 | 0.26 |
| 7NMIN | 0.48 | 0.96 | 1.11 | 1.30 | 0.96 |
| 8N*MIN | 0.48 | 0.62 | 0.67 | 0.82 | 0.65 |
| 9P | 0.62 | 0.96 | 0.89 | 1.42 | 0.97 |
| 10MIN | 0.55 | 1.08 | 1.47 | 1.32 | 1.10 |
| MEAN | 0.45 | 0.67 | 0.84 | 0.97 | 0.73 |

STRAW MEAN DM% 84.7

SUB PLOT AREA HARVESTED 0.00728