

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED  
RESEARCH

# Yields of the Field Experiments 2001

[Full Table of Content](#)

Yields of the  
Classical  
and other  
Long-term Experiments  
2001

14328 - Rothamsted

---

## 01/R/EX/4 - Exhaustion Land

### Rothamsted Research

Rothamsted Research (2002) *01/R/EX/4 - Exhaustion Land* ; Yields Of The Field Experiments 2001, pp 17 - 19 - DOI: <https://doi.org/10.23637/ERADOC-1-258>

01/R/EX/4

EXHAUSTION LAND

**Object:** To study the residual effects of manures applied 1876-1901, and of additional phosphate applied since 1986, on the yield of continuous s. barley up to 1991, w. wheat since - Hoosfield.

The 146th year, s. wheat.

For previous years see 'Details' 1977, 1973 and 74-00/EX/4.

**Treatments:** All combinations of:-

Whole plots (P test)

1. **OLD RES** Residues of manures applied annually 1876-1901:

|         |  |
|---------|--|
| O       | None   |
| D       | Farmyard manure at 35 t  |
| N       | 96 kg N as ammonium salts  |
| P       | 34 kg P as superphosphate  |
| NPKNAMG | N and P as above plus 137 kg K as sulphate of potash,<br>16 kg Na as sulphate of soda, 11 kg Mg as sulphate<br>of magnesia |
  
2. **P** Maintenance P (20 kg P) applied annually from 2000 to maintain existing levels of available P in the soil. (P1) (P2) and (P3) are residues of P applied annually 1986-1992:

|       |         |          |
|-------|---------|----------|
|       | 2000-01 | 1986-92  |
| O     | None    | None     |
| P(P1) | 20 kg P | 44 kg P  |
| P(P2) | 20 kg P | 87 kg P  |
| P(P3) | 20 kg P | 131 kg P |

**NOTE:** P treatments were applied at 61.5 kg P in error in 2000.

plus

Whole plots (K test, previously N test until 1991)

- |                |  |
|----------------|--|
| <b>OLD RES</b> | Residues of manures applied annually 1876-1901:              |
| O              | None   |
| D              | Farmyard manure at 35 t                                      |
| N*             | 96 kg N as nitrate of soda                                   |
| PK             | 34 kg P as superphosphate, 137 kg K as sulphate of<br>potash |
| N*PK           | N, P and K as above  |

**Experimental diary:**

- K test:  
17-Oct-00 : T : : P basal:(triple superphosphate at 98 kg), plots 2,  
4, 6, 8 & 10.
- P test:  
17-Oct-00 : T : P : P test:(triple superphosphate at 98 kg), plots  
011-013, 031-033, 051-053, 071-073, & 091-093.  
18-Oct-00 : T : K : K basal/100 kg (muriate of potash at 250 kg),  
plots 1, 3, 5, 7 & 9.
- All plots:  
20-Oct-00 : B : : Ploughed.  
26-Oct-00 : B : : Combination drilled, Hereward, tr. Sibutol, at 450  
seeds/m<sup>2</sup> with the Accord drill.  
21-Jan-01 : B : : Ploughed.

01/R/EX/4

**Experimental diary:**

Winter wheat failed, re-sown to spring wheat  
 02-Apr-01 : B : : Combination drilled, Axona, tr. Sibutol, at 350 seeds/m<sup>2</sup> with the Accord drill.  
 15-May-01 : B : : 33.5% N at 433 kg.  
 15-May-01 : B : : tm)Ally at 20 g in 100 l.  
 : B : : tm)Starane 2 at 0.5 l in 100 l.  
 13-Jun-01 : B : : Folicur at 0.7 l in 100 l.  
 20-Aug-01 : B : : Azural at 4.0 l in 200 l.  
 07-Sep-01 : T : : Combine harvested plots for yield, and discards.  
 : T : : Sampled, baled and weighed straw.  
 : T : : Swathed straw.  
 11-Sep-01 : B : : Baled straw.

Note: Winter wheat failed; re-sown to spring wheat.  
 Samples of grain and straw were taken for chemical analysis.

**P TEST**

**GRAIN TONNES/HECTARE**

\*\*\*\*\* Tables of means \*\*\*\*\*

| P              | O    | P(P1) | P(P2) | P(P3) | Mean |
|----------------|------|-------|-------|-------|------|
| <b>OLD RES</b> |      |       |       |       |      |
| O              | 1.04 | 3.69  | 3.68  | 2.86  | 2.82 |
| D              | 2.18 | 4.03  | 4.19  | 4.10  | 3.63 |
| N              | 1.44 | 3.52  | 4.02  | 3.36  | 3.08 |
| P              | 2.20 | 4.00  | 4.64  | 4.00  | 3.71 |
| NPKNAMG        | 2.15 | 3.84  | 4.15  | 4.09  | 3.56 |
| Mean           | 1.80 | 3.82  | 4.14  | 3.68  | 3.36 |

GRAIN MEAN DM% 84.1

**STRAW TONNES/HECTARE**

\*\*\*\*\* Tables of means \*\*\*\*\*

| P              | O    | P(P1) | P(P2) | P(P3) | Mean |
|----------------|------|-------|-------|-------|------|
| <b>OLD RES</b> |      |       |       |       |      |
| O              | 0.34 | 2.03  | 1.86  | 1.65  | 1.47 |
| D              | 1.25 | 2.16  | 1.98  | 1.98  | 1.84 |
| N              | 0.40 | 1.82  | 2.28  | 1.36  | 1.47 |
| P              | 0.86 | 1.74  | 2.30  | 1.77  | 1.67 |
| NPKNAMG        | 0.84 | 1.87  | 2.54  | 1.70  | 1.74 |
| Mean           | 0.74 | 1.92  | 2.19  | 1.69  | 1.64 |

STRAW MEAN DM% 83.7

PLOT AREA HARVESTED 0.00614

01/R/EX/4

**K TEST**

**GRAIN TONNES/HECTARE**

\*\*\*\*\* Tables of means \*\*\*\*\*

**OLD RES**

|      |      |
|------|------|
| O    | 2.47 |
| D    | 3.20 |
| N*   | 1.43 |
| PK   | 0.91 |
| N*PK | 1.94 |

|      |      |
|------|------|
| Mean | 1.99 |
|------|------|

GRAIN MEAN DM% 84.0

**STRAW TONNES/HECTARE**

\*\*\*\*\* Tables of means \*\*\*\*\*

**OLD RES**

|      |      |
|------|------|
| O    | 1.68 |
| D    | 1.69 |
| N*   | 1.54 |
| PK   | 1.05 |
| N*PK | 1.28 |

|      |      |
|------|------|
| Mean | 1.45 |
|------|------|

STRAW MEAN DM% 65.2

PLOT AREA HARVESTED 0.00614