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## Yields of the Field Experiments 1997

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### 97/R/EX/4 Exhaustion Land - W. Wheat

#### Rothamsted Research

Rothamsted Research (1998) *97/R/EX/4 Exhaustion Land - W. Wheat* ; Yields Of The Field Experiments 1997, pp 24 - 26 - DOI: <https://doi.org/10.23637/ERADOC-1-53>

97/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 142nd year, w. wheat.

For previous years see 'Details' 1977, 1973 and 74-96/R/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          | 97 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, 16 kg Na as sulphate of soda, 11 kg Mg as sulphate of magnesia  |
| 2. P RES   | Residues of phosphate (kg P) applied annually from 1986, as single superphosphate in 1986 and 1987, triple superphosphate from 1988 until 1992, none since: |
| O          | None  |
| P1         | 44  |
| P2         | 87  |
| P3         | 131   |

plus

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

- |         |   |
|---------|---|
| OLD RES | Residues of manures applied annually 1876-1901:           |
| O       | None  |
| D       | Farmyard manure at 35 t                                   |
| N*      | 97 kg N as nitrate of soda                                |
| PK      | 34 kg P as superphosphate, 137 kg K as sulphate of potash |
| N*PK    | N, P and K as above                                       |

**Experimental diary:**

K test:

26-Sep-96 : T : Muriate of potash at 167 kg.

P test:

26-Sep-96 : T : Triple superphosphate at 319 kg.

97/R/EX/4

**Experimental diary:**

All plots:

05-Oct-96 : B : Ploughed.  
 08-Oct-96 : B : Spring-tine cultivated, rotary harrowed, Hereward,  
 dressed Beret Gold, drilled at 380 seeds per m<sup>2</sup>.  
 17-Mar-97 : B : Topik at 1.25 l with Sprayprover at 1.0 l in 200 l.  
 07-Apr-97 : B : 34.5% N at 556 kg.  
 16-Apr-97 : B : Dow Shield at 0.35 l with Deloxil at 1.5 l in 200 l.  
 30-May-97 : B : Folicur at 0.5 l with Pointer at 0.5 l in 300 l.  
 14-Aug-97 : B : Combine harvested.

**NOTE:** Samples of grain and straw were taken for chemical analysis.

**P TEST**

**GRAIN TONNES/HECTARE**

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

P RES	O	P1	P2	P3	Mean
<b>OLD RES</b>					
O	1.28	5.01	6.86	7.25	5.10
D	4.78	6.61	7.60	7.47	6.61
N	1.68	5.71	7.40	7.46	5.56
P	4.58	6.69	7.71	7.44	6.61
NPKNAMG	4.09	6.56	7.33	7.70	6.42
Mean	3.28	6.12	7.38	7.46	6.06

GRAIN MEAN DM% 86.9

**STRAW TONNES/HECTARE**

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

P RES	O	P1	P2	P3	Mean
<b>OLD RES</b>					
O	0.31	2.02	2.82	2.81	1.99
D	1.61	2.66	3.01	2.58	2.46
N	0.66	2.07	2.99	2.90	2.16
P	1.50	2.41	2.96	2.78	2.41
NPKNAMG	1.46	2.49	3.09	2.89	2.48
Mean	1.11	2.33	2.97	2.79	2.30

STRAW MEAN DM% 89.9

PLOT AREA HARVESTED 0.00614

97/R/EX/4

K TEST

GRAIN TONNES/HECTARE

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

OLD RES

O	6.55
D	7.18
N*	7.27
PK	7.84
N*PK	7.47
Mean	7.26

GRAIN MEAN DM% 87.3

STRAW TONNES/HECTARE

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

OLD RES

O	2.59
D	2.84
N*	2.89
PK	3.00
N*PK	2.73
Mean	2.81

STRAW MEAN DM% 89.3

PLOT AREA HARVESTED 0.00614