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## Yields of the Field Experiments 1996

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

#### Rothamsted Research

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96/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 141st year, w. wheat.

For previous years see 'Details' 1967, 1973 and 74-95/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 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, 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)

- |                |   |
|----------------|---|
| <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 potash |
| N*PK           | N, P and K as above                                       |

**Experimental diary:**

P test:

18-Sep-95 : T : Muriate of potash at 171 kg.

K test:

18-Sep-95 : T : Triple superphosphate at 319 kg.

96/R/EX/4

**Experimental diary:**

All plots:

- 11-Aug-95 : B : Straw baled.
- 25-Sep-95 : B : Ploughed and furrow pressed.
- 29-Sep-95 : B : Rotary harrowed, Hereward, dressed Panoctine, drilled at 380 seeds per m<sup>2</sup>.
- 15-Apr-96 : B : 34.5% N at 580 kg.
- 26-Apr-96 : B : Ally at 30 g with Cheetah Super at 1.25 l and Barclay Holdup at 2.3 l in 200 l.
- 06-Jun-96 : B : Monicle at 1.0 l in 320 l.
- 08-Jul-96 : B : Pulled wild oats by hand.
- 15-Aug-96 : B : Combine harvested.

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

**P TEST**

**GRAIN TONNES/HECTARE**

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

P RES OLD RES	O	P1	P2	P3	Mean
O	3.33	7.16	7.65	7.91	6.51
D	6.81	7.68	7.98	7.56	7.50
N	3.50	7.69	7.53	7.13	6.46
P	6.78	8.20	8.35	8.12	7.86
NPKNAMG	6.27	7.39	7.25	7.47	7.09
Mean	5.34	7.62	7.75	7.64	7.09

GRAIN MEAN DM% 86.9

**STRAW TONNES/HECTARE**

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

P RES OLD RES	O	P1	P2	P3	Mean
O	1.54	3.20	4.08	4.46	3.32
D	3.07	3.66	4.04	3.92	3.68
N	1.70	3.80	3.76	3.76	3.26
P	2.85	3.68	3.87	3.81	3.55
NPKNAMG	2.68	3.70	3.39	3.44	3.30
Mean	2.37	3.61	3.83	3.88	3.42

STRAW MEAN DM% 93.1

PLOT AREA HARVESTED 0.00589

96/R/EX/4

K TEST

GRAIN TONNES/HECTARE

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

OLD RES

O	6.89
D	7.56
N*	7.42
PK	8.30
N*PK	7.82
Mean	7.60

GRAIN MEAN DM% 86.9

STRAW TONNES/HECTARE

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

OLD RES

O	3.66
D	3.86
N*	3.65
PK	4.45
N*PK	4.27
Mean	3.98

STRAW MEAN DM% 93.2

PLOT AREA HARVESTED 0.00589