

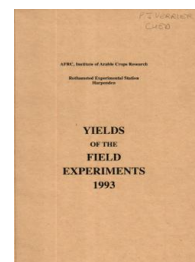
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93/R/EX/4 Exhaustion Land - W. Wheat

Rothamsted Research

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93/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 138th year, w. wheat.

For previous years see 'Details' 1967, 1973 and 74-92/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 tonnes
 - 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** Phosphate applied annually from 1986, as single superphosphate in 1986 and 1987, triple superphosphate from 1988 until 1992, none since:
 - O None
 - P1 44 kg P
 - P2 87 kg P
 - P3 131 kg P

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 tonnes
 - 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:

30-Sep-92 : T : Muriate of potash at 167 kg.

K test:

30-Sep-92 : T : Triple superphosphate at 638 kg.

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Experimental diary:

All plots:

- 16-Sep-92 : B : Scythe at 2.0 l with Farmon Blue at 0.20 l in 200 l.
- 05-Oct-92 : B : Ploughed.
- 09-Oct-92 : B : Discd, spring-tine cultivated.
: B : Rotary harrowed, Mercia, dressed Cerevax, drilled at 380 seeds per square metre.
- 19-Apr-93 : B : 34.5% N at 560 kg.
- 13-May-93 : B : Ally at 30 g, Cheetah R at 2.5 l and Starane 2 at 1.0 l in 200 l.
- 04-Jun-93 : B : Halo at 2.0 l and Mistral at 0.50 l in 200 l.
- 16-Aug-93 : 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
OLD RES					
O	2.47	6.32	7.22	5.96	5.49
D	5.17	6.72	6.72	6.61	6.31
N	2.84	5.52	5.78	5.32	4.86
P	4.44	6.44	6.11	6.72	5.93
NPKNAMG	3.98	4.99	5.63	5.05	4.91
Mean	3.78	6.00	6.29	5.93	5.50

GRAIN MEAN DM% 87.9

STRAW TONNES/HECTARE

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

P RES	O	P1	P2	P3	Mean
OLD RES					
O	1.46	3.56	4.06	3.52	3.15
D	2.78	3.55	3.73	3.21	3.32
N	1.64	2.93	3.06	2.95	2.65
P	2.01	3.23	3.80	3.46	3.12
NPKNAMG	2.19	2.71	3.19	2.91	2.75
Mean	2.01	3.20	3.57	3.21	3.00

STRAW MEAN DM% 89.3

PLOT AREA HARVESTED 0.00589

93/R/EX/4

K TEST

GRAIN TONNES/HECTARE

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

OLD RES

O	4.87
D	5.64
N*	5.01
PK	4.82
N*PK	4.67
Mean	5.00

GRAIN MEAN DM% 88.2

STRAW TONNES/HECTARE

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

OLD RES

O	2.87
D	2.90
N*	2.80
PK	2.66
N*PK	2.67
Mean	2.78

STRAW MEAN DM% 91.7

PLOT AREA HARVESTED 0.00589