This work is licensed under a Creative Commons Attribution 4.0 International License.

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 readible, or you suspect there are some problems, please let us know and we will correct that.

Yields of the Field Experiments 2007

Full Table of Content

R/EX/4 Exhaustion Land

Rothamsted Research

Rothamsted Research (2007) *R/EX/4 Exhaustion Land ;* Yields Of The Field Experiments 2007, pp 21 - 24 **- DOI: https://doi.org/10.23637/ERADOC-1-217**

This work is licensed under a Creative Commons Attribution 4.0 International License.

07/R/EX/4

EXHAUSTION LAND

Object: To study the residual effects of manures applied 1856 -1901, and of additional phosphate applied since 1986, on the yield of continuous s. barley up to 1991, w. wheat since – Hoosfield.

The 152nd year, w. wheat.

For previous years see 'Details' 1977, 1973 and Yield Books for 74-06/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** 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:

	2000-07	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)

1. OLD RES 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

https://doi.org/10.23637/ERADOC-1-217

This work is licensed under a Creative Commons Attribution 4.0 International License.

07/R/EX/4

2. K Potassium applied annually for 2007 as muriate of potash

O	None
K1	75 kg K_2O (62.2 kg K)
K2	150 kg K_2O (124.5 kg K)

Whole plots

Nitrogen: 50 kg N as ammonium sulphate (to supply sufficient S) during first two weeks in March, 200 kg N as ammonium nitrate at GS31/mid-April (whichever comes first) and 50 kg N as ammonium nitrate at GS37 (not later than mid-May)

Experimental diary:

K test:

			Rate	Unit
12-Oct-06	f	Muriate of Potash - 023, 043, 063, 083, 103	125.00	kg/ha
	f	Muriate of Potash – 024, 044, 064, 084, 104	250.00	kg/ha
	f	Basal P (triplesuperphosphate) – plots 02, 04, 06, 08, 10	98.00	kg/ha

P test:

			Rate	Unit
12-Oct-06	f	Triplesuperphosphate – plots 011–013, 031–033, 051-053, 071–073, 091-093	98.00	kg/ha
	f	Basal K (muriate of potash) – plots 01, 03, 05, 07, 09	250.00	kg/ha

All Plots			Rate	Unit
13-Oct-06	p	Barclay Gallup 360	4.00	l/200 l/ha
19-Oct-06	a	Plough/ N		
30-Oct-06	a	Combination Drilled		
	s	Xi19 tr Redigo Sib Secure	350.00	seeds/m^2
03-Nov-07	p	Ice	4.00	l/200 l/ha
08-Dec-07	p	Entice	7.00	kg/ha
12-Mar-07	f	Sulphate of Ammonia	238.00	kg/ha
11-Apr-07	p	Pacifica	0.50	kg/200 l/ha
	p	Biopower	1.00	l/200 l/ha
23-Apr-07	p	Clean Crop Wanderer	1.00	l/200 l/ha
	p	Deuce	1.00	l/200 l/ha
26-Apr-07	f	Nitraprill	580.00	kg/ha
22-May-07	p	Amistar Opti	1.25	l/200 l/ha
	p	Opus	0.80	l/200 l/ha
06-Jun-07	a	Mow/Rotavate paths		
14-Jun-07	a	Mow/Rotavate paths		
25-Jun-07	a	Mow/Rotavate paths		
07-Aug-07	a	Mow/Rotavate paths		
27-Aug-07	a	Combine harvest O&E's		
	a	Chop straw O&E's		
03-Sep-07	a	Combine harvest, plots for yield		
	a	Swath straw		
04-Sep-07	a	Sample, bale and weigh straw		

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

https://doi.org/10.23637/ERADOC-1-217

This work is licensed under a Creative Commons Attribution 4.0 International License.

07/R/EX/4

P TEST

GRAIN TONNES/HECTARE

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

P_RES / OLD_RES	O	P1	P2	P3	Mean
O	1.93	4.22	5.25	5.38	4.20
D	2.85	4.66	5.27	5.53	4.58
N	1.81	3.95	4.78	4.65	3.80
P	3.28	4.77	5.71	5.10	4.72
NPKNAMG	2.09	3.67	5.03	5.13	3.98
Mean	2.39	4.26	5.21	5.16	4.26

GRAIN MEAN DM% 84.1

STRAW TONNES/HECTARES

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

P_RES / OLD_RES	O	P1	P2	P3	Mean
O	0.38	0.99	1.64	1.51	1.13
D	0.75	1.29	1.58	1.42	1.26
N	0.82	1.64	1.98	1.93	1.59
P	1.07	1.16	1.63	1.75	1.40
NPKNAMG	0.61	1.04	1.58	1.78	1.25
Mean	0.73	1.22	1.68	1.68	1.33

STRAW MEAN DM% 90.4

PLOT AREA HARVESTED 0.00525

https://doi.org/10.23637/ERADOC-1-217

This work is licensed under a Creative Commons Attribution 4.0 International License.

07/R/EX/4

K TEST

GRAIN TONNES/HECTARE

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

K Test

OLD_RES	K0	K1	K2	Mean
O	4.10	4.74	5.19	4.53
D	4.37	4.85	5.18	4.70
N*	4.49	4.58	4.56	4.53
PK	5.10	4.51	4.87	4.89
N*PK	4.09	3.62	4.46	4.06
Mean	4.43	4.46	4.85	4.54
rep.	10	5	5	

GRAIN MEAN DM% 84.0

STRAW TONNES/HECTARE

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

K Test

OLD_RES	K0	K1	K2	Mean
O	1.49	1.58	1.41	1.49
D	0.90	1.35	1.46	1.15
N*	1.57	1.59	1.66	1.60
PK	1.35	1.06	1.30	1.26
N*PK	0.87	0.81	1.14	0.92
Mean	1.24	1.28	1.39	1.29
rep.	10	5	5	

STRAW MEAN DM% 89.0

PLOT AREA HARVESTED 0.00525

https://doi.org/10.23637/ERADOC-1-217