

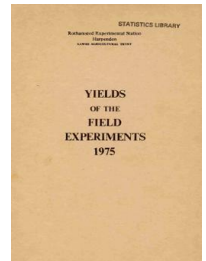
Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1975

[Full Table of Content](#)



75/ R/CS/14 - NPK to Old Grass - Old Grass

Rothamsted Research

Rothamsted Research (1976) 75/ R/CS/14 - NPK to Old Grass - Old Grass ; Yields Of The Field Experiments 1975, pp 153 - 162 - DOI: <https://doi.org/10.23637/ERADOC-1-141>

75/R/CS/14

NPK TO OLD GRASS

Object: To study the effects of a range of P and K levels on yields of permanent pasture on sites with much or little P and K in the soil - Park Grass Old Plots 5/1 and 5/2.

Sponsor: A.E. Johnston.

The eleventh year, old grass.

For previous years see 65/C/22(t), 66/C/13(t), 67/C/9(t), 68/C/7 and 69-74/R/CS/14.

Design: On each site: A single replicate of 2 x 4 x 4 in 2 blocks of 16 plots each, with 2 x 2 additional plots in each block.

Whole plot dimensions: 1.83 x 10.1.

Treatments:

The experiment is duplicated on sites differing in previous history:-

Park Grass Plot 5/1: No P or K

PLOT

5/1NORES

Park Grass Plot 5/2: Superphosphate to supply 34 kg P, sulphate of potash to supply 224 kg K, annually 1898-1964

5/2PKRES

On each site, all combinations of:-

1. Nitrogen fertiliser (kg N for each cut):

NPERCUT

33.6
67.2

33.6
67.2

2. Phosphate (kg P) as superphosphate annually:

P

None
16.8
33.6
67.2

0
16.8
33.6
67.2

3. Potassium (kg K) as potassium chloride annually:

K

None
112
224
448

0
112
224
448

75/R/CS/14

together with extra treatments, all combinations of:-

1. Nitrogen fertiliser (kg N for each cut):

NPERCUT

33.6
67.2

33.6
67.2

2. Residues of PK fertilisers applied 1965 only:

PKRES65

33.6 kg P, 56 kg K
33.6 kg P, 336 kg K

34P56K
34P336K

Cultivations, etc.:— P and K applied: 9 Dec, 1974. N applied: 18 Mar, 1975,
6 June and 8 Aug. Cut: 5 June, 7 Aug and 20 Oct.

75/R/CS/14 PLOT 5/1 NORES

EXCLUDING PKRES65 PLOTS

1ST CUT (JUNE 75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

P	0.0	16.8	33.6	67.2	MEAN
NPERCUT					
33.6	2.52	4.22	4.10	4.44	3.82
67.2	2.58	4.86	5.26	5.44	4.54
MEAN	2.55	4.54	4.68	4.94	4.18

K	0	112	224	448	MEAN
NPERCUT					
33.6	3.14	3.71	4.49	3.92	3.82
67.2	2.93	4.90	5.39	4.93	4.54
MEAN	3.04	4.30	4.94	4.43	4.18

K	0	112	224	448	MEAN
P					
0.0	2.20	2.73	3.02	2.25	2.55
16.3	3.12	4.51	5.47	5.06	4.54
33.6	3.30	5.05	5.33	5.03	4.68
67.2	3.53	4.92	5.95	5.36	4.94
MEAN	3.04	4.30	4.94	4.43	4.18

K	0	112	224	448	
P					
NPERCUT					
33.6	0.0	2.72	2.63	2.76	1.95
	16.3	3.21	3.87	5.22	4.57
	33.6	3.11	4.23	4.60	4.45
	67.2	3.53	4.11	5.40	4.71
67.2	0.0	1.68	2.82	3.28	2.55
	16.3	3.02	5.16	5.72	5.55
	33.6	3.49	5.87	6.06	5.60
	67.2	3.53	5.73	6.49	6.01

1ST CUT DM % 20.5

75/R/CS/14 PLOT 5/1 NORES

EXCLUDING PKRES65 PLOTS

2ND CUT (7/8/75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

P	0.0	16.8	33.6	67.2	MEAN
NPERCUT					
33.6	1.04	1.00	0.74	0.82	0.90
67.2	1.47	1.24	1.93	1.64	1.57
MEAN	1.26	1.12	1.34	1.23	1.24

K	0	112	224	448	MEAN
NPERCUT					
33.6	0.40	0.66	1.32	1.22	0.90
67.2	0.47	1.31	2.09	2.43	1.57
MEAN	0.43	0.98	1.70	1.82	1.24

K	0	112	224	448	MEAN
P					
0.0	0.82	1.29	1.49	1.43	1.26
16.8	0.38	1.00	1.78	1.32	1.12
33.6	0.28	0.75	1.99	2.33	1.34
67.2	0.25	0.90	1.56	2.21	1.23
MEAN	0.43	0.98	1.70	1.82	1.24

	K	0	112	224	448
NPERCUT	P				
33.6	0.0	0.71	0.75	1.37	1.31
	16.8	0.26	0.85	1.22	1.67
	33.6	0.23	0.71	1.24	0.78
	67.2	0.38	0.34	1.45	1.10
67.2	0.0	0.93	1.82	1.61	1.54
	16.8	0.50	1.15	2.33	0.98
	33.6	0.32	0.79	2.74	3.88
	67.2	0.11	1.46	1.67	3.32

2ND CUT MEAN DM% 36.8

75/R/CS/14 PLOT 5/1 NORES

EXCLUDING PKRES65 PLOTS

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

P	0.0	16.8	33.6	67.2	MEAN
NPERCUT					
33.6	3.55	5.22	4.84	5.26	4.72
67.2	4.06	6.11	7.19	7.08	6.11
MEAN	3.80	5.66	6.01	6.17	5.41

K	0	112	224	448	MEAN
NPERCUT					
33.6	3.54	4.37	5.81	5.14	4.72
67.2	3.40	6.20	7.47	7.36	6.11
MEAN	3.47	5.29	6.64	6.25	5.41

K	0	112	224	448	MEAN
P					
0.0	3.02	4.01	4.51	3.68	3.80
16.8	3.50	5.52	7.24	6.39	5.66
33.6	3.58	5.80	7.32	7.36	6.01
67.2	3.78	5.82	7.51	7.57	6.17
MEAN	3.47	5.29	6.64	6.25	5.41

	K	0	112	224	448
NPERCUT	P				
33.6	0.0	3.43	3.38	4.12	3.27
	16.8	3.47	4.72	6.44	6.24
	33.6	3.34	4.94	5.84	5.23
	67.2	3.92	4.45	6.86	5.81
67.2	0.0	2.61	4.65	4.89	4.09
	16.8	3.53	6.31	8.05	6.53
	33.6	3.81	6.66	8.80	9.49
	67.2	3.64	7.19	8.16	9.33

TOTAL OF 2 CUTS MEAN DM% 28.7

PLOT AREA HARVESTED 0.00086

75/R/CS/14 PLOT 5/1 NORES

PKRES65 PLOTS

1ST CUT (JUNE 75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

PKRES65	34P56K	34P336K	MEAN
NPERCUT			
33.6	1.82	2.04	1.93
67.2	2.35	1.83	2.09
MEAN	2.03	1.93	2.01

1ST CUT DM % 26.3

2ND CUT (7/8/75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

PKRES65	34P56K	34P336K	MEAN
NPERCUT			
33.6	0.68	0.51	0.59
67.2	0.57	0.59	0.58
MEAN	0.63	0.55	0.59

2ND CUT MEAN DM% 41.2

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

PKRES65	34P56K	34P336K	MEAN
NPERCUT			
33.6	2.50	2.54	2.52
67.2	2.92	2.42	2.67
MEAN	2.71	2.48	2.60

TOTAL OF 2 CUTS MEAN DM% 33.7

PLOT AREA HARVESTED 0.00086

75/R/CS/14 PLOT 5/2 PKRES

EXCLUDING PKRES65 PLOTS

1ST CUT (JUNE 75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

P	0.0	16.8	33.6	67.2	MEAN
NPERCUT					
33.6	4.29	5.24	4.65	4.29	4.62
67.2	6.48	6.29	6.34	5.99	6.28
MEAN	5.38	5.77	5.50	5.14	5.45

K	0	112	224	448	MEAN
NPERCUT					
33.6	4.47	4.72	4.85	4.43	4.62
67.2	5.92	5.97	6.80	6.40	6.28
MEAN	5.19	5.35	5.83	5.42	5.45

K	0	112	224	448	MEAN
P					
0.0	4.97	5.23	6.06	5.27	5.38
16.8	5.79	5.58	6.02	5.67	5.77
33.6	5.04	5.49	5.98	5.49	5.50
67.2	4.98	5.09	5.25	5.24	5.14
MEAN	5.19	5.35	5.83	5.42	5.45

K	0	112	224	448	
P					
NPERCUT					
33.6	0.0	4.31	4.13	4.80	3.92
	16.8	5.54	5.44	5.45	4.53
	33.6	4.27	4.66	4.88	4.79
	67.2	3.74	4.65	4.27	4.49
67.2	0.0	5.63	6.32	7.32	6.62
	16.8	6.05	5.72	6.60	6.82
	33.6	5.81	6.32	7.07	6.18
	67.2	6.21	5.54	6.22	5.99

1ST CUT DM % 20.9

75/R/CS/14 PLOT 5/2 PKRES

EXCLUDING PKRES65 PLOTS

2ND CUT (7/8/75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

P	0.0	16.8	33.6	67.2	MEAN
NPERCUT					
33.6	1.93	1.24	1.49	1.15	1.45
67.2	2.95	3.08	2.47	3.20	2.92
MEAN	2.44	2.16	1.98	2.17	2.19

K	0	112	224	448	MEAN
NPERCUT					
33.6	1.24	1.60	1.56	1.40	1.45
67.2	2.67	2.35	3.48	3.20	2.92
MEAN	1.96	1.97	2.52	2.30	2.19

K	0	112	224	448	MEAN
P					
0.0	2.00	1.87	2.96	2.93	2.44
16.8	1.73	2.11	2.37	2.42	2.16
33.6	1.81	1.93	2.64	1.54	1.98
67.2	2.28	1.99	2.11	2.31	2.17
MEAN	1.96	1.97	2.52	2.30	2.19

NPERCUT	K	0	112	224	448
	P				
33.6	0.0	1.57	1.86	2.41	1.87
	16.8	0.86	1.54	1.54	0.90
	33.6	1.14	1.91	1.42	1.48
	67.2	1.38	1.00	0.87	1.34
67.2	0.0	2.43	1.89	3.51	3.99
	16.8	2.60	2.58	3.19	3.94
	33.6	2.48	1.94	3.87	1.60
	67.2	3.19	2.93	3.34	3.28

2ND CUT MEAN DM% 28.7

75/R/CS/14 PLOT 5/2 PKRES

EXCLUDING PKRES65 PLOTS

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

P	0.0	16.8	33.6	67.2	MEAN
NPERCUT					
33.6	6.22	6.48	6.14	5.43	6.07
67.2	9.43	9.37	8.82	9.19	9.20
MEAN	7.82	7.92	7.48	7.31	7.63

K	0	112	224	448	MEAN
NPERCUT					
33.6	5.70	6.32	6.41	5.83	6.07
67.2	8.60	8.32	10.28	9.61	9.20
MEAN	7.15	7.32	8.35	7.72	7.63

K	0	112	224	448	MEAN
P					
0.0	6.97	7.10	9.02	8.20	7.82
16.8	7.52	7.69	8.39	8.10	7.92
33.6	6.35	7.42	8.62	7.03	7.48
67.2	7.26	7.08	7.35	7.54	7.31
MEAN	7.15	7.32	8.35	7.72	7.63

K	0	112	224	448	
P					
NPERCUT					
33.6	0.0	5.88	5.99	7.21	5.79
	16.8	6.40	7.08	6.99	5.44
	33.6	5.42	6.57	6.30	6.27
	67.2	5.12	5.65	5.15	5.82
67.2	0.0	8.07	8.21	10.83	10.61
	16.8	8.64	8.29	9.78	10.75
	33.6	8.28	8.26	10.94	7.73
	67.2	9.40	8.52	9.56	9.27

TOTAL OF 2 CUTS MEAN DM% 24.8

PLOT AREA HARVESTED 0.00086

75/R/CS/14 PLOT 5/2 PKRES

PKRES65 PLOTS

1ST CUT (JUNE 75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

PKRES65 NPERCUT	34P56K	34P336K	MEAN
33.6	4.45	4.26	4.36
67.2	5.58	6.23	5.90
MEAN	5.02	5.24	5.13

1ST CUT DM % 22.6

2ND CUT (7/3/75) DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

PKRES65 NPERCUT	34P56K	34P336K	MEAN
33.6	1.31	1.67	1.74
67.2	2.29	2.68	2.48
MEAN	2.05	2.18	2.11

2ND CUT MEAN DM% 29.3

TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

*** TABLES OF MEANS ***

PKRES65 NPERCUT	34P56K	34P336K	MEAN
33.6	6.27	5.94	6.10
67.2	7.37	8.91	8.39
MEAN	7.07	7.42	7.25

TOTAL OF 2 CUTS MEAN DM% 26.0

PLOT AREA HARVESTED 0.00086