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# Yields of the Field Experiments 2008

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Results of the  
Classical and other  
Long-term Experiments  
2008

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## R/PG/5 Park Grass

### Rothamsted Research

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08/R/PG/5

PARK GRASS

**Object:** To study the effects of organic manures and inorganic fertilisers and lime on old grass for hay.

The 153<sup>rd</sup> year, hay.

For previous years see 'Details' 1977 and 1973 and Yield Books for 74-07/R/PG/5.

**Treatments:** Combinations of:-

Whole plots

1.	<b>Manure</b>	Fertilizers and organic manures:
	N1	Plot 1
	K	Plot 2/1
	None (FYM)	Plot 2/2
	None	Plot 3
	P	Plot 4/1
	N2P	Plot 4/2
	N1PKNaMg	Plot 6
	PKNaMg	Plot 7
	PNaMg	Plot 8
	PKNaMg(N2)	Plot 9/1
	N2PKNaMg	Plot 9/2
	N2PNaMg	Plot 10
	N3PKNaMg	Plot 11/1
	N3PKNaMgSi	Plot 11/2
	None	Plot 12
	(FYM/F)	Plot 13/1
	FYM/PM	Plot 13/2
	PKNaMg (N2*)	Plot 14/1
	N2*PKNaMg	Plot 14/2
	PKNaMg (N2*)	Plot 15
	N1*PKNaMg	Plot 16
	N1*	Plot 17
	N2KNaMg	Plot 18
	FYM	Plot 19
	FYM/N*PK	Plot 20
	N1, N2, N3:	48, 96, 144 kg N as sulphate of ammonia
	N1*, N2*:	48, 96 kg N as nitrate of soda (30 kg N to plot 20 in years with no farmyard manure)
	P:	35 kg P (15 kg P to plot 20 in years with no farmyard manure) as triple superphosphate in 1974 and since 1987, single superphosphate in other years
	K:	225 kg K (45 kg K to plot 20 in years with no farmyard manure) as sulphate of potash
	Na:	15 kg Na as sulphate of soda
	Mg:	10 kg Mg as sulphate of magnesia
	Si:	Silicate of soda at 450 kg
	FYM:	Farmyard manure at 35 t every fourth year



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**Experimental diary**

			Rate	Unit
03-Dec-07	f	Triple Superphosphate Plots 6, 7, 8, 9/1, 9/2, 10, 11/1, 11/2, 14/1, 14/2, 15, 16	171.00	kg/ha
	f	Triple Superphosphate Plot 20	73.00	kg/ha
20-Dec-07	f	Sulphate of Potash Plots 2/1, 6, 7, 9/1, 9/2, 11/1, 11/2, 14-1/ 14/2, 15, 16, & 18	542.00	kg/ha
	f	Sulphate of potash Plot 20	108.00	kg/ha
	f	Anhydrous Sulphate of Soda Plots 6, 7, 8, 9/1, 9/2, 10, 11/1, 11/2, 14-1/ 14/2, 15, 16, & 18	43.00	kg/ha
	f	Magnesium Sulphate Plots 6, 7, 8, 9/1, 9/2, 10, 11/1, 11/2, 14-1/ 14/2, 15, 16, & 18	111.00	kg/ha
	f	Silicate of Soda Plot 11/2	450.00	kg/ha
03-Apr-08	f	Sulphate of Ammonia Plot 6 (a 12' 6" pass applied to C and D plots in error)	229.00	kg/ha
	f	Sulphate of Ammonia Plots 4/2, 9/2, 10 18	457.00	kg/ha
	f	Sulphate of Ammonia Plots 11/1, 11/2	686.00	kg/ha
	f	Nitrate of Soda Plot 20	188.00	kg/ha
	f	Nitrate of Soda Plots 16, 17	300.00	kg/ha
	f	Nitrate of Soda Plot 14/2	600.00	kg/ha
05-Jun-08	a	Mow paths		
23-Jun-08	a	Cut harvest strips, weighed and sampled completed 24-Jun-08		
	a	Mowed completed 24-Jun-08		
25-Jun-08	a	Turned hay		
	a	Row up		
	a	Baled by contractor, 34 round bales		
26-Jun-08	a	Topped to remove straggly grass		
29-Jul-08	a	Mow / Rotavate paths		
28-Oct-08	a	Cut harvest strips (2 <sup>nd</sup> cut), weighed and sampled, completed 4-Nov-08		
04-Nov-08	a	Mowed		
	a	Baled		

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1<sup>ST</sup> CUT (23-24/6/08) DRY MATTER TONNES/HECTARE

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

	Manure	Lime	a	b	c	d	Mean
N1	1		3.23	2.78	2.40	1.96	2.59
K	2/1		2.86	2.77	1.23	1.31	2.04
None (FYM)	2/2		2.38	2.77	1.08	1.57	1.95
None	3		2.67	2.82	1.10	1.47	2.02
P	4/1		3.21	3.52	2.68	2.38	2.95
N2P	4/2		3.45	3.70	4.05	2.37	3.39
N1PKNaMg	6		6.01	5.93			5.97
PKNaMg	7		5.68	5.72	4.72	2.52	4.66
PNaMg	8		2.74	2.86	2.56	2.46	2.65
PKNaMg (N2)	9/1		5.51	5.58	4.98	0.98	4.26
N2PKNaMg	9/2		5.58	5.21	4.96	3.26	4.75
N2PNaMg	10		3.79	3.71	4.26	2.08	3.46
N3PKNaMg	11/1		6.42	5.60	5.04	3.71	5.20
N3PKNaMgSi	11/2		6.46	5.19	4.70	4.10	5.11
None	12		2.82	2.09	1.07	1.18	1.79
(FYM/F)	13/1		3.84	2.96	1.88	1.82	2.62
FYM/PM	13/2		3.19	3.19	3.26	3.17	3.20
PKNaMg (N2*)	14/1		5.40	5.43	5.62	4.85	5.33
N2*PKNaMg	14/2		7.24	5.52	5.25	5.02	5.76
PKNaMg (N2*)	15		5.59	5.97	5.06	2.75	4.84
N1*PKNaMg	16		5.67	5.80	4.77	4.55	5.20
N1*	17		3.12	3.08	2.44	2.81	2.86
N2KNaMg	18		3.17	3.68	3.22	1.77	2.96
N2KNaMg	18/2						4.08
FYM	19/1						3.58
FYM	19/2						3.83
FYM	19/3						4.41
FYM/N*PK	20/1						4.79
FYM/N*PK	20/2						4.55
FYM/N*PK	20/3						4.81

1ST CUT MEAN DM% 27.1

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**2<sup>ND</sup> CUT (28/10/08 and 03/11/08) DRY MATTER TONNES/HECTARE**

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

	Manure	Lime	a	b	c	d	Mean
	N1	1	1.72	1.52	1.29	0.93	1.36
	K	2/1	1.60	1.41	0.89	0.88	1.19
	None (FYM)	2/2	1.42	1.52	0.91	1.07	1.23
	None	3	1.48	1.68	0.95	1.08	1.30
	P	4/1	1.52	1.48	1.36	1.30	1.42
	N2P	4/2	1.56	1.57	1.68	1.09	1.47
	N1PKNaMg	6	2.90	3.16			3.03
	PKNaMg	7	3.11	3.40	3.20	1.83	2.89
	PNaMg	8	2.25	2.14	2.13	2.02	2.14
	PKNaMg (N2)	9/1	3.30	3.48	3.11	0.50	2.60
	N2PKNaMg	9/2	2.34	2.63	2.26	2.53	2.44
	N2PNaMg	10	1.58	1.41	2.37	1.69	1.76
	N3PKNaMg	11/1	2.78	2.65	2.76	3.05	2.81
	N3PKNaMgSi	11/2	3.27	3.27	2.89	3.55	3.24
	None	12	1.79	1.50	0.83	0.84	1.24
	(FYM/F)	13/1	2.28	2.67	1.58	1.08	1.90
	FYM/PM	13/2	2.50	3.02	2.78	2.59	2.72
	PKNaMg (N2*)	14/1	1.99	2.54	2.49	2.12	2.29
	N2*PKNaMg	14/2	1.83	2.40	2.27	2.04	2.13
	PKNaMg (N2*)	15	2.54	2.35	2.51	1.32	2.18
	N1*PKNaMg	16	2.77	2.87	2.38	2.05	2.52
	N1*	17	2.19	2.02	1.53	1.33	1.77
	N2KNaMg	18	1.66	1.86	2.59	0.97	1.77
	N2KNaMg	18/2					2.16
	FYM	19/1					2.97
	FYM	19/2					3.27
	FYM	19/3					3.16
	FYM/N*PK	20/1					3.56
	FYM/N*PK	20/2					3.60
	FYM/N*PK	20/3					2.97

2ND CUT MEAN DM% 20.50

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TOTAL OF 2 CUTS DRY MATTER TONNES/HECTARE

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

Manure	Lime	a	b	c	d	Mean
N1 1		4.95	4.30	3.68	2.89	3.96
K 2/1		4.46	4.18	2.12	2.19	3.24
None (FYM) 2/2		3.80	4.29	1.98	2.64	3.18
None 3		4.16	4.50	2.06	2.55	3.32
P 4/1		4.73	5.00	4.04	3.68	4.36
N2P 4/2		5.00	5.26	5.73	3.46	4.86
N1PKNaMg 6		8.91	9.09			9.00
PKNaMg 7		8.78	9.12	7.93	4.35	7.54
PNaMg 8		4.99	5.01	4.69	4.48	4.79
PKNaMg (N2) 9/1		8.81	9.05	8.09	1.48	6.86
N2PKNaMg 9/2		7.91	7.84	7.22	5.79	7.19
N2PNaMg 10		5.37	5.12	6.63	3.77	5.22
N3PKNaMg 11/1		9.20	8.25	7.80	6.77	8.01
N3PKNaMgSi 11/2		9.73	8.46	7.59	7.65	8.36
None 12		4.61	3.58	1.90	2.01	3.02
(FYM/F) 13/1		6.12	5.63	3.46	2.90	4.53
FYM/PM 13/2		5.69	6.21	6.03	5.76	5.92
PKNaMg (N2*) 14/1		7.39	7.98	8.11	6.97	7.61
N2*PKNaMg 14/2		9.07	7.92	7.52	7.06	7.89
PKNaMg (N2*) 15		8.13	8.33	7.57	4.07	7.02
N1*PKNaMg 16		8.44	8.67	7.15	6.60	7.72
N1* 17		5.31	5.11	3.97	4.13	4.63
N2KNaMg 18		4.83	5.54	5.81	2.74	4.73
N2KNaMg 18/2						6.24
FYM 19/1						6.55
FYM 19/2						7.10
FYM 19/3						7.57
FYM/N*PK 20/1						8.34
FYM/N*PK 20/2						8.15
FYM/N*PK 20/3						7.78

TOTAL OF 2 CUTS MEAN DM% 23.80