

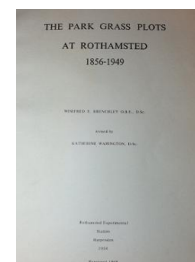
Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED  
RESEARCH

## The Park Grass Plots at Rothamsted 1856 -1949

[Full Table of Content](#)



### Tables

#### Rothamsted Research

Rothamsted Research (1958) *Tables* ; The Park Grass Plots At Rothamsted 1856 -1949, pp 159 - 174  
- DOI: <https://doi.org/10.23637/ERADOC-1-154>

159  
Fig. 15.

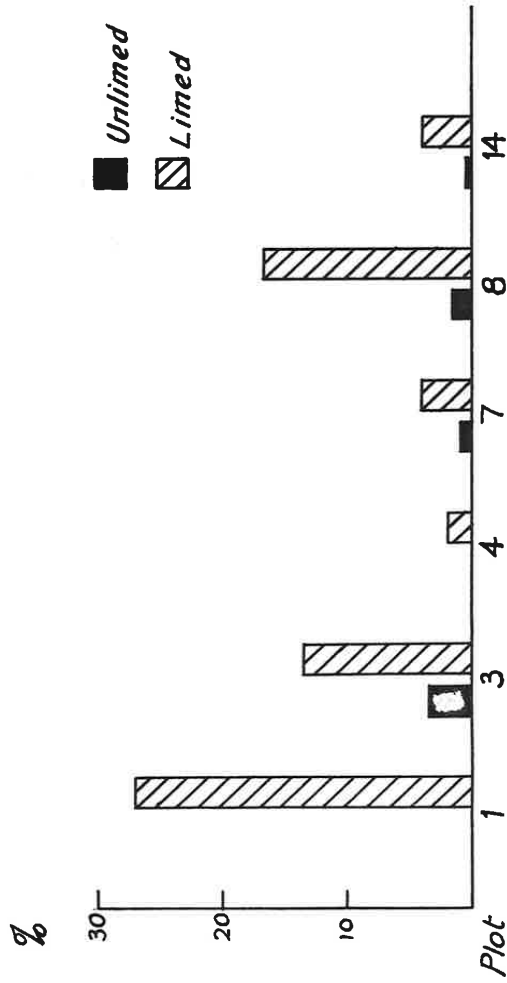
Fig. 15. Percentage of *Arrhenatherum avenaceum* in 1947



160

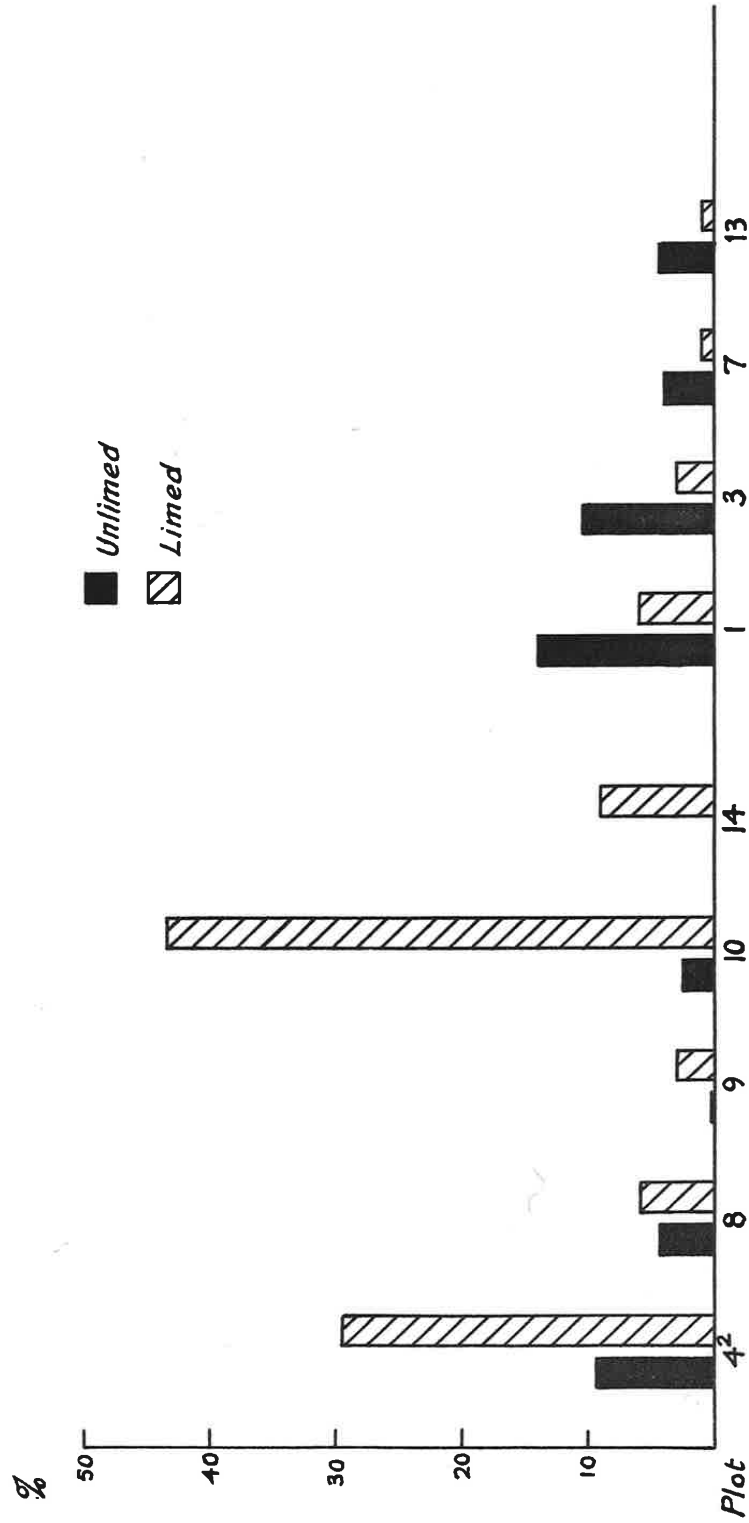
Fig. 16.

Fig. 16. Percentage of *Avena pubescens* in 1947



161  
Fig. 17.

Fig. 17. Percentage of *Festuca rubra* in 1947



162  
Fig. 18.

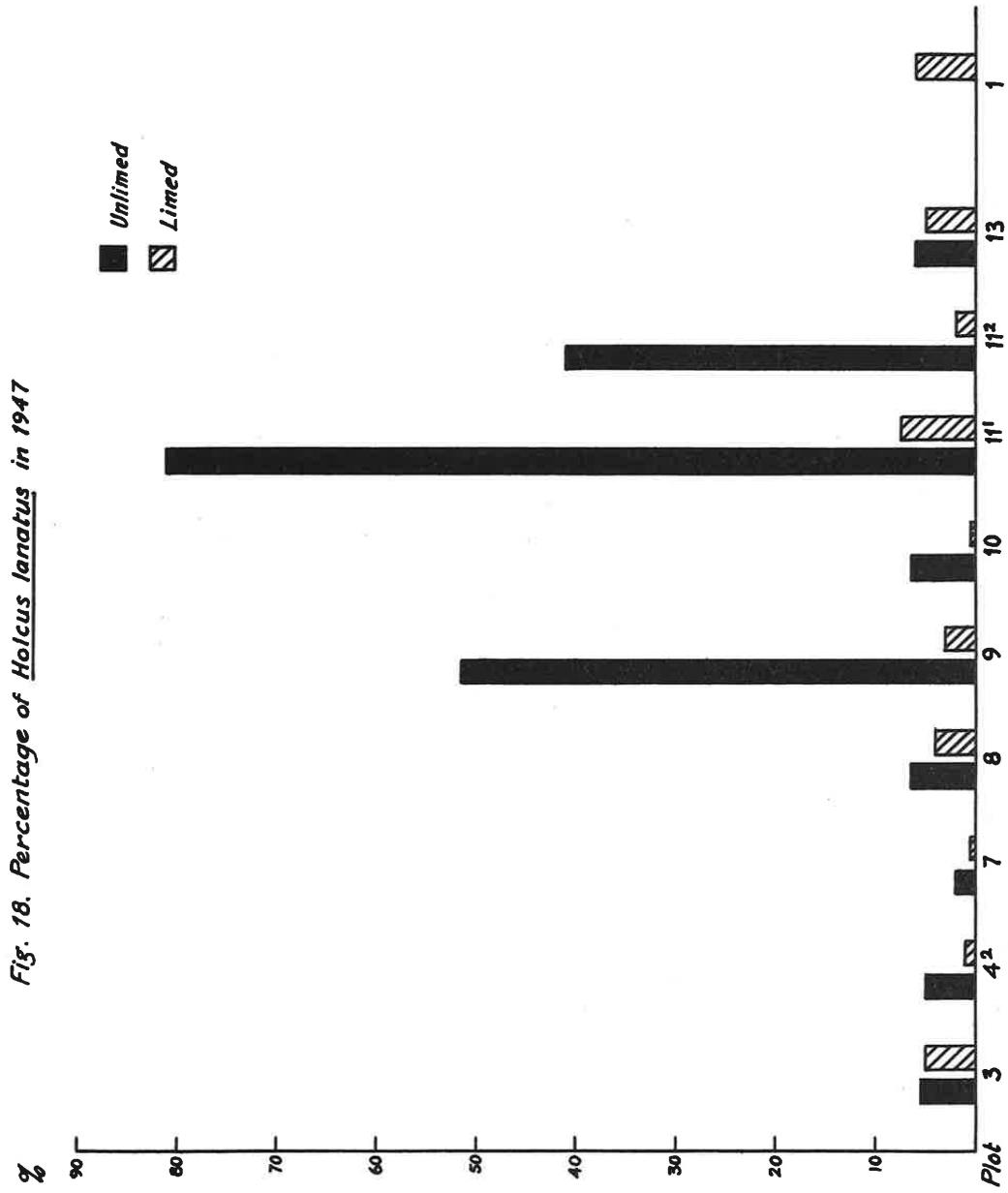
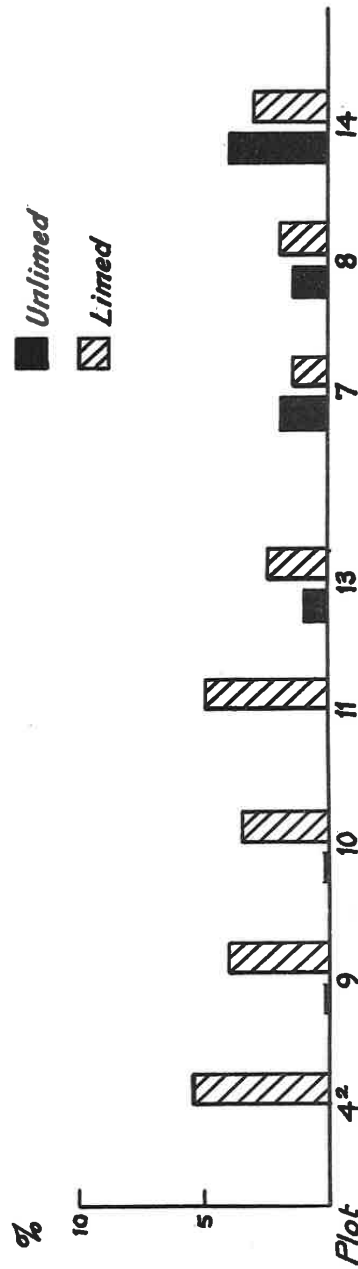


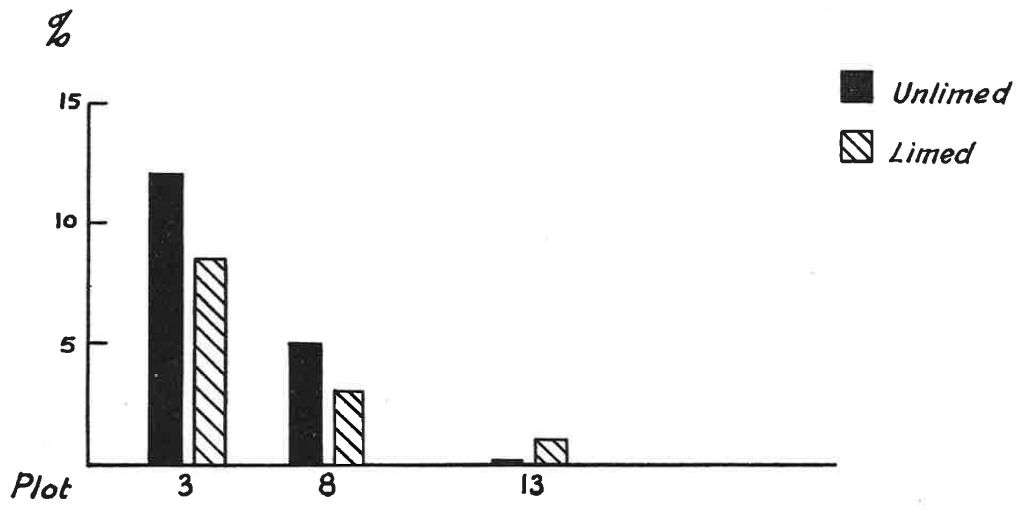
Fig. 19.

Fig. 19. Percentage of *Poa pratensis* in 1947



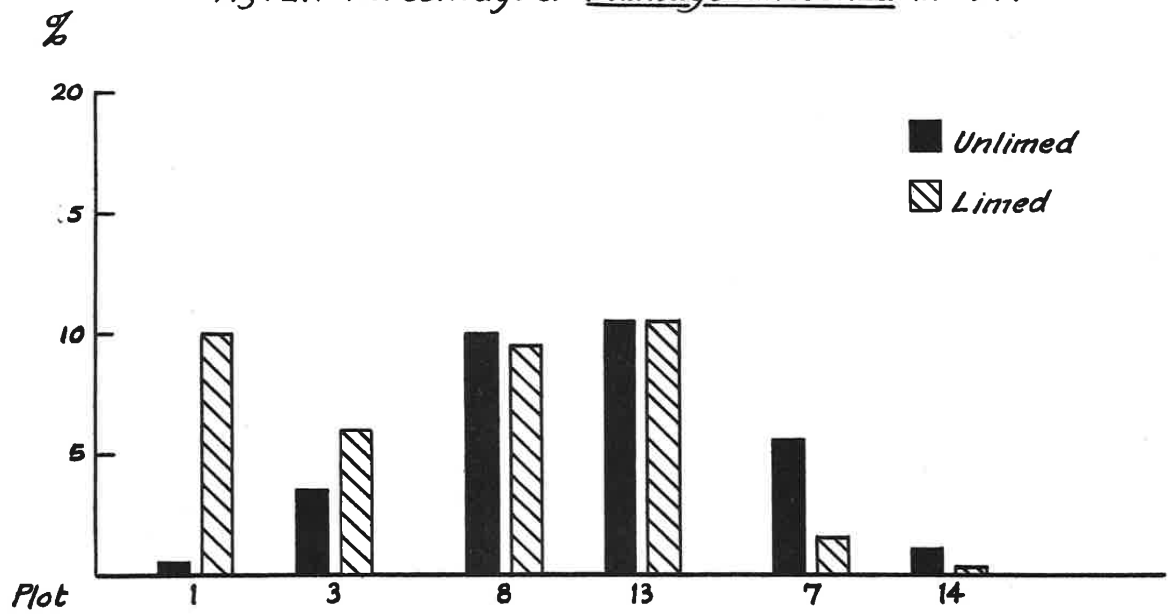
164  
Fig.20.

Fig. 20. Percentage of *Leontodon hispidus* in 1947



165  
Fig.21.

Fig. 21. Percentage of *Plantago lanceolata* in 1947





166  
Fig. 22.

Fig. 22. Percentage of *Rumex acetosa* in 1947

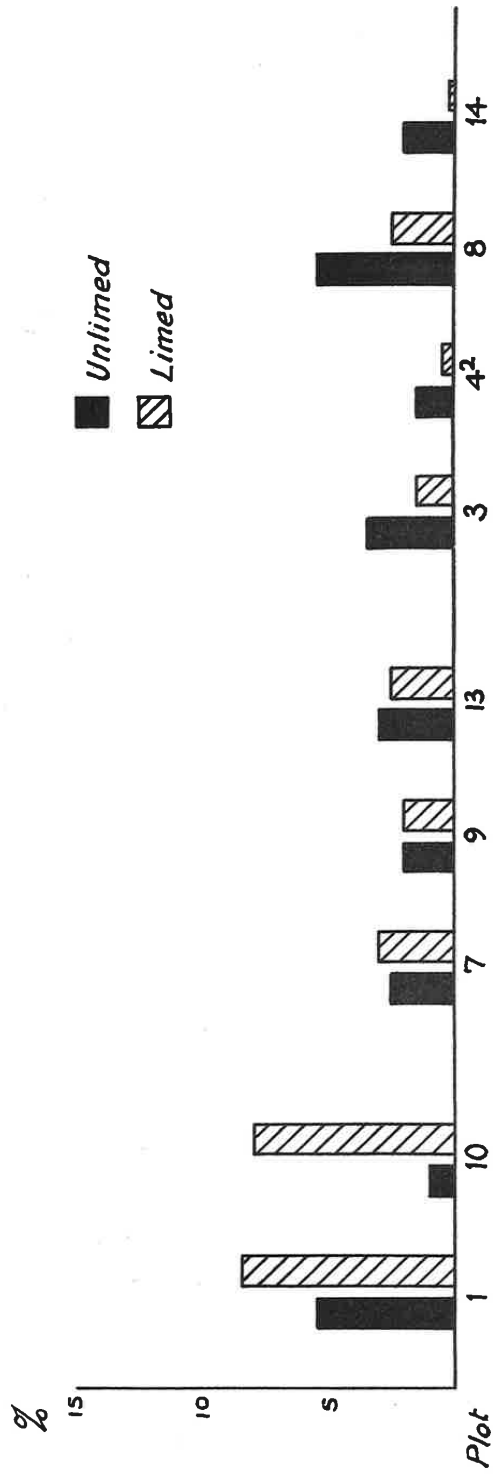


TABLE 1a

Plot	Description of Manure	Quantity of Manure per Acre.				Mineral Manures				Organic Manures		Averages Over.	Cwts. Cwts. Cwts. Cwts. Cwts. Cwts. Cwts. Cwts. Cwts. Cwts. Cwts.								
		Nitro-Genous Manures	Superphosphate	Sulphate of Potash	Sulphate of Soda	Sulphate of Potash	Sulphate of Soda	Sulphate of Magnesia	Silicate of Soda	Farmyard Manure	Fish Guano										
1	Ammonium salts = 43 lbs. N (with farmyard manure, 1856-63)	220	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
2	Unmanured (after farmyard manure, 1856-63)	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
3	Unmanured	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
3 <sup>1</sup>	Superphosphate of lime	-	3.5	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
4 <sup>2</sup>	Superphosphate and ammonium salts = 86 lbs. N	440	3.5	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
4 <sup>1</sup>	(N. half) Unmanured (after ammonium salts, 1856-63)	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
5 <sup>1</sup>	(S. half) Superphosphate, sulphate of potash (after ammonium salts, 1856-63)	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
5 <sup>2</sup>	As plot 7 (after ammonium salts, 1856-63)	-	3.5	500	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
6	Complete mineral manure	-	3.5	500	100	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
7	Complete mineral manure without potash	-	3.5	500	100	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
8	Complete mineral manure and ammonium salts = 86 lbs. N.	-	3.5	500	100	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
9	Mineral manure (without potash) and ammonium salts = 86 lbs. N.	440	3.5	500	100	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
10	Complete mineral manure and extra ammonium salts = 129 lbs. N.	440	3.5	-	100	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
11 <sup>1</sup>	As plot 11 and silicate of soda	660	3.5	500	100	400	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
11 <sup>2</sup>	Unmanured	660	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
12	Farmyard manure and fish guano, each once in four years since 1905 (after cut wheat straw, minerals, and ammonium salts)	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
13	Complete mineral manure and nitrate of soda = 86 lbs. N.	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
14	Complete mineral manure (after nitrate of soda, 1856-63)	-	3.5	500	100	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
15	Complete mineral manure and nitrate of soda = 43 lbs. N.	-	3.5	500	100	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
16	Complete mineral manure (after nitrate of soda, 1856-63)	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
17	Nitrate of soda = 43 lbs. N.	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
18	Mineral manure without superphosphate, and ammonium salts = 86 lbs. N (after minerals and nitrogen equal to constituents of 1 ton of hay, 1865-1904.)	440	-	500	100	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
19	Farmyard manure every fourth year (after superphosphate, sulphate of potash, and nitrate of soda, 1872-1904.)	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.
20	Farmyard manure every fourth year; sulphate of potash, superphosphate, and nitrate of soda = 26 lbs. N in other years (after superphosphate and nitrate of potash, 1872-1904.)	-	-	-	-	-	-	-	-	-	-	1946-1949.	1936-45.	1926-35.	1916-25.	1906-15.	1896-1905.	1886-95.	1876-85.	1866-75.	1856-65.

TABLE 1a

Manures - all plots  
Yield of hay on all unlimed plots

TABLE 1 b.

Plot	Regular liming <sup>1</sup> (Burnt lime)		pH Plots 1-17 in 1945 Plots 18-20 in 1957		Average produce of hay per acre over two successive 10 - year periods 1926 - 45 and over the 4 - year period 1946 - 9. First crop only, cwt at 85% dry matter,		
	Begun in Year	Amount per acre every 4th year	Unlimed	Limed	LIMED		
					1926 - 35	1936 - 45	1946 - 49
1	1903	2000 lb	4.5	7.0	17.2	13.6	16.9
2	1903	"	5.0	7.0	12.8	9.0	13.4
3	1903	"	5.5	7.0	10.6	8.7	12.7
4-1	1903	"	5.5	7.0	11.8	10.0	15.3
4-2	1903	"	4.0	5.5	30.7	24.2	24.2
5-1	-	-	4.5	-	-	-	-
5-2	-	-	4.5	-	-	-	-
6	-	-	5.0	-	-	-	-
7	1903	2000 lb	5.0	7.0	31.0	30.4	33.0
8	1903	"	5.0	7.0	13.4	12.2	13.6
9	1903	"	4.0	5.0	50.6	38.0	32.7
10	1903	"	4.0	5.0	36.6	30.6	24.9
11-1	1903	"	4.0	4.5	51.9	45.4	45.1
11-2	1903	"	4.0	4.5	53.4	47.3	45.8
12	-	-	5.0	-	-	-	-
13	1903	2000 lb	4.6	6.5	36.0	26.4	29.2
14	1920	"	6.0	7.0	46.9	38.5	39.6
15	1920	"	5.0	6.5	23.8	21.7	23.4
16	1903	"	5.0	7.0	30.4	29.5	31.1
17	1920	"	6.0	7.0	22.7	17.7	19.7
18	1920	61 cwt	4.0	6.0	38.0	21.9	22.6
"	1920	35 cwt		7.5	30.2	20.0	20.1
19	1920	28 cwt	5.5	7.6	21.5	22.0	24.6
"	1920	5 cwt		6.5	24.1	23.3	26.2
20	1920	25 cwt	5.7	7.6	33.3	27.6	35.3
"	1920	5 cwt		6.5	35.1	29.7	32.4

TABLE 1b.  
Liming, soil pH  
and yield of hay  
on limed plots

<sup>1</sup> 1911 omitted. 1919 dressing not given until 1920 and amount increased by  $\frac{1}{4}$  to allow for the extra year.























TABLE 6B,  
NUMBER OF SPECIES AND PERCENTAGE OF EACH SPECIES AND GROUP OF SPECIES,  
FARMYARD MANURE

Species	Every fourth year with Fish Guano alternately after cut wheat straw, minerals and ammonium salts, 1845-1904													Every fourth year, after Super, Sulphate of Potash and Nitrate of Soda, 33 years 1872-1904																																
	UNLIMITED				LIMITED				UNLIMITED					LIGHT LIME				HEAVY LIME				UNLIMITED				LIGHT LIME				HEAVY LIME																
Plot number	1914	1919	1944	1948	1914	1919	1944	1948	1914	1919	1923	1926	1928	1948	1914	1919	1923	1926	1928	1948	1914	1919	1923	1926	1928	1948	1914	1919	1923	1926	1928	1948	1914	1919	1923	1926	1928	1948	1914	1919	1923	1926	1928	1948		
<b>GRAMINAE</b>																																														
Number of species	10	11	12	9	10	11	9	12	14	13	12	12	12	13	14	13	13	13	13	14	14	14	14	14	14	12	12	12	12	14	14	13	13	13	13	13	13	13	13	13	13	13	13	13		
1. <i>Agrostis vulgaris</i>	11.8	11.0	8.4	15.7	2.3	3.3	-	0.1	7.6	7.5	14.3	5.8	11.9	14.7	5.1	4.3	10.3	2.4	0.5	4.1	4.5	6.6	10.5	4.1	4.1	4.1	12.7	4.2	2.5	12.7	4.2	2.5	5.3	1.2	0.1	5.3	1.2	0.1	5.3	1.2	0.1	5.3	1.2	0.1		
2. <i>Arrhenatherum avenaceum</i>	18.5	22.2	56.7	31.9	18.3	35.3	5.8	10.4	13.4	22.3	16.1	33.2	6.2	16.1	42.6	35.1	14.6	21.1	16.7	11.1	30.3	20.4	46.2	39.2	39.2	16.9	30.6	21.9	16.9	30.6	21.9	25.2	24.1	-	25.2	24.1	-	25.2	24.1	-	25.2	24.1	-			
3. <i>Briza media</i>	4.0	5.2	4.8	6.2	1.5	2.0	0.5	0.3	1.0	4.3	11.6	11.6	7.3	9.4	7.9	1.3	0.7	14.3	4.6	4.6	5.3	1.3	1.3	15.1	15.1	12.4	8.7	21.7	12.4	8.7	21.7	2.0	3.8	3.8	2.0	3.8	3.8	2.0	3.8	3.8	2.0	3.8	3.8			
4. <i>Anthoxanthum odoratum</i>	24.4	17.3	0.9	3.4	40.3	20.9	5.9	20.1	3.9	3.2	2.0	3.5	1.7	6.6	3.2	3.0	8.7	6.1	3.1	6.3	10.2	7.7	6.6	4.0	4.0	4.7	4.1	1.9	4.7	4.1	1.9	5.3	2.6	3.3	5.3	2.6	3.3									
5. <i>Avena flexuosa</i>	0.1	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
6. <i>Avena trivittata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
7. <i>Bromus mollis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
8. <i>Bromus cristatus</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
9. <i>Cynodon dactylon</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
10. <i>Cynodon cristatus</i>	7.0	0.2	6.7	9.1	6.4	10.9	6.6	21.5	12.0	15.7	5.3	9.6	3.3	0.1	11.0	10.9	3.7	9.1	13.6	9.9	12.5	6.0	7.0	14.7	14.7	4.1	7.1	14.4	4.1	7.1	14.4	2.7	5.6	14.2	2.7	5.6	14.2	-	-	-	-	-	-			
11. <i>Dactylis glomerata</i>	14.6	5.5	3.6	4.0	10.7	4.7	1.1	0.9	21.0	6.1	13.3	8.1	9.8	14.8	3.7	5.0	16.6	13.9	4.5	22.2	4.4	13.9	5.3	3.7	3.7	14.9	6.5	2.8	14.9	6.5	2.8	21.1	9.0	4.9	21.1	9.0	4.9	-	-	-	-	-	-			
12. <i>Festuca pratensis</i>	14.6	7.2	2.7	2.5	14.4	6.4	1.7	4.4	3.5	2.1	3.4	4.9	1.3	2.1	2.6	1.7	0.2	0.9	0.2	0.9	0.2	0.2	0.4	0.4	0.2	0.9	0.2	0.2	0.4	0.4	1.1	1.0	1.0	1.1	1.0	1.0	1.9	3.7	5.0	1.9	3.7	5.0				
13. <i>Holcus lanatus</i>	0.2	1.7	1.5	0.9	1.1	3.9	1.4	1.8	0.3	0.5	0.6	0.3	0.7	2.7	1.1	0.9	2.2	1.4	1.9	0.5	0.6	0.2	0.2	0.4	0.4	1.3	1.1	0.7	1.3	1.1	0.7	0.4	2.0	2.9	0.4	2.0	2.9	3.0	3.0	3.0	3.0	3.0	3.0			
14. <i>Lolium perenne</i>	0.1	0.4	0.4	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
15. <i>Poa pratensis</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
16. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
17. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
18. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
19. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
20. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
21. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
22. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
23. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
24. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
25. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
26. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
27. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
28. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
29. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
30. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
31. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
32. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
33. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
34. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
35. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
36. <i>Poa annua</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
<b>LEGUMINOSAE</b>																																														
Number of species	1	1	1	2	1	1	4	3	4	2	2	2	4	2	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
1. <i>Lathyrus pratensis</i>	0.5	0.1	0.3	0.5	0.9	0.8	0.9	7.9	9.2	6.0	7.3	1.6	13.5	9.3	1.5	7.4	15.5	1.0	7.5	6.4	4.7	1.9	2.6	4.3	4.3	9.9	1.0	2.1	9.9	1.0	2.1	5.9	5.1	8.8	5.9	5.1	8.8									
2. <i>Trifolium repens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
3. <i>Trifolium repens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
4. <i>Trifolium repens</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-																											