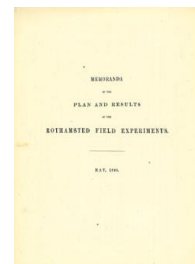


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# Memoranda of the Plan and Results of the Rothamsted Field Experiments, May 1866



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## Experiments on Permanent Meadow Land; the Park

### Rothamsted Research

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EXPERIMENTS WITH DIFFERENT MANURES ON PERMANENT MEADOW LAND.  
THE PARK.

The Land has probably been laid down with Grass for some centuries. No fresh seed has been artificially sown within the last 30 years certainly, nor is there record of any having been sown since the Grass was first laid down. The experiments commenced in 1856, at which time the character of the herbage appeared uniform over all the Plots. Excepting as explained in the Table, and in the foot-notes, the same description of Manure has been applied to the same Plots year after year.

(Area under experiment, about 6½ acres.)

PLOTS.	1 acre .. 1 lb. (pound avoird.) .. 1 cwt. (hundredweight) .. 1 ton .. 1 lb. per acre .. 1 cwt. per acre ..	= (about) 0.40 Hectare = (about) 0.45 Kilogramme .. = (about) 51.0 Kilogrammes .. = (about) 1016.0 Kilogrammes .. = (about) 1.12 Kilogramme per Hectare .. = (about) 125.5 Kilogrammes per Hectare or	* 0.40 Hectare .. or 1.59 Prussian Morgen. 0.45 Kilogramme .. or 0.91 Zollverein Pfund. 51.0 .. or 1.02 Centner. 1016.0 .. or 20.33 Centner. 1.12 Kilogramme per Hectare or 0.57 Zollv. Pfd. per Pr. Morgen. 125.5 Kilogrammes per Hectare or 0.64 Centner per Pr. Morgen.	Produce per Acre, weighed as Hay.	
				Average per Annum; 10 Years 1856-1865.	Tenth Season; 1865.
Manures, per acre; eleventh season—1866.					
1	200 lbs. Ammonia-salts <sup>(1)</sup> [also 14 tons Farmyard Manure per acre per annum, for 8 years, 1856-1863]	..	..	..	Cwts. 49½ 32¼
2	Unmanured, 1864 and since [14 tons Farmyard Manure per acre per annum, for 8 years, 1856-1863]	..	..	..	43 } (7) 22½
3	Unmanured, continuously	..	..	..	11½
4 <sup>(a)</sup>	Superphosphate of Lime <sup>(2)</sup>	..	..	..	24½ } (8) 39½ } (9)
5	ditto	..	..	..	30½
6	400 lbs. "Ammonia-salts"	..	..	..	31½
7	400 lbs. ditto	..	..	..	34
8	Superphosphate of Lime <sup>(3)</sup> and "Superphosphate of Lime"	..	..	..	33½
9	Sulphates of Soda and Magnesia <sup>(4)</sup>	..	..	..	58½
10	Sulphates of Potass, Soda, and Magnesia <sup>(5)</sup>	..	..	..	52½
11	Sulphates of Soda and Magnesia <sup>(6)</sup>	..	..	..	61½
11a	Sulphates of Potass, Soda, and Magnesia <sup>(7)</sup>	..	..	..	66½ } (10) 55½
12	Unmanured, continuously	..	..	..	25
13	Sulphates of Potass, Soda, and Magnesia <sup>(8)</sup> ; "Superphosphate of Lime"	..	..	..	54½
14	Sulphates of Potass, Soda, and Magnesia <sup>(9)</sup> ; "Superphosphate of Lime"	..	..	..	53
15	none	..	..	..	36
16	Sulphates of Potass, Soda, and Magnesia <sup>(10)</sup> ; "Superphosphate of Lime"	..	..	..	45½ } (11) 34½
17	none	..	..	..	28½
18	Mixture supplying the quantity of Potass, Soda, Lime, Magnesia, Phosphoric Acid, Silica, and Nitrogen contained in 1 ton of hay (commencing in 1865)	..	..	..	21½

(1) Equal parts Sulphate and Muriate of Ammonia of Commerce.  
 (2) Plots 6, 8, and 10, had, besides the Manures specified, 2000 lbs. Sawdust per acre per annum for 7 years, 1856-1862, but without effect.  
 (3) 300 lbs. Sulphate of Potass, 100 lbs. Sulphate of Soda (200 lbs. 1856-1863), and 100 lbs. Sulphate of Magnesia.  
 (4) 250 lbs. Sulphate of Soda (500 lbs. in 1862 and 1863), and 100 lbs. Sulphate of Magnesia (Sulphate of Potass also as on Plots 7, &c., 1856-1861).  
 (5) 800 lbs. in 1856-7-8; only 400 lbs. in 1859-60-61; and 800 lbs. since.  
 (6) Average of 8 years only, 1856-1863.  
 (7) Average of 4 years only, the application of Sulphates not being commenced until 1862.  
 (8) Average of 8 years only, as these experiments did not commence until 1858.