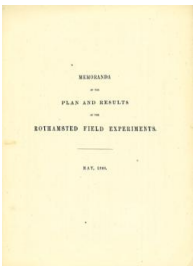
Memoranda of the Plan and Results of the Rothamsted Field Experiments, May 1866



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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 6¾ acres.)

		Produce per Acre, weighed as Hay.	
Plots.	Manures, per acre; eleventh season—1866.	Average per Annum; 10 Years 1856–1865.	Tenth Season; 1865.
		Cwts.	Cwts.
1	200 lbs. Ammonia-salts [1] [also 14 tons Farmyard Manure per acre per annum, for 8 years, 1856–1863]	49½ (7)	32¼
2	Unmanured, 1864 and since [14 tons Farmyard Manure per acre per annum, for 8 years, 1856–1863]	43 (7)	25½
3	Unmanured, continuously	22½	11½
4a	Superphosphate of Lime [2]	24½ (8)	11
4b	ditto ; and 400 lbs. "Ammonia-salts"	39¾ (8)	26
5	400 lbs. "Ammonia-salts"	30½	15½
[13] 6	400 lbs. ditto	31½	16
7	Sulphates of Potass, Soda, and Magnesia [4] ; and "Superphosphate of Lime"	34	22¾
[3] 8	Sulphates of Soda and Magnesia [5] ; ditto	33¾	17
9	Sulphates of Potass, Soda, and Magnesia [4] ; ditto ; and 400 lbs. "Ammonia-salts"	53½	34½
[3] 10	Sulphates of Soda and Magnesia [5] ; ditto ; 400 lbs. "Ammonia-salts"	52¾	32¾
11	Sulphates of Potass, Soda, and Magnesia [4] ; ditto ; 800 lbs. [6] "Ammonia-salts"	61¾	52
11a	Sulphates of Potass, Soda, and Magnesia [4] ; ditto ; 800 lbs. [6] "Ammonnia-salts ; and 200 lbs. each, Silicate of Soda and Silicate of Lime	66½ [9]	55¾
12	Unmanured, continuously	25	17¼
13	Sulphates of Potass, Soda, and Magnesia [4] ; "Superphosphate of Lime" ; 400 lbs. "Ammonia-salts;" and 2000 lbs. Cut Wheat-straw	54½	41¼
14	Sulphates of Potass, Soda, and Magnesia [4] ; "Superphosphate of Lime" ; and 550 lbs. Nitrate of Soda	53	47¼
15	none ; none ; 550 lbs. ditto	36 (10)	28¼
16	Sulphates of Potass, Soda, and Magnesia [4] ; "Superphosphate of Lime" ; and 275 lbs. ditto	45¼ (10)	36¾
17	none ; none ; 275 lbs. ditto	34½	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)	...	21¼

1 acre = (about)	0·40 Hectare or 1·59 Prussian Morgen.
1 lb. (pound avoir.) = (about)	0·45 Kilogramme or 0·91 Zollverein Pfund.
1 cwt. (hundredweight) = (about)	51·0 Kilogrammes or 1·02 Centner.
1 ton = (about)	1016·0 Kilogrammes or 20·33 Centner.
1 lb. per acre = (about)	1·12 Kilogramme per Hectare or 0·57 Zollv. Pfd. per Pr. Morgen.
1 cwt. per acre = (about)	125·5 Kilogrammes per Hectare or 0·64 Centner per Pr. Morgen.

(1) Equal parts Sulphate and Muriate of Ammonia of Commerce.
(2) 200 lbs. Bone-ash, 150 lbs. Sulphuric Acid (Sp. gr. 1·7).
(3) 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.
(4) 300 lbs. Sulphate of Potass, 100 lbs. Sulphate of Soda (200 lbs. 1856–1863), and 100 lbs. Sulphate of Magnesia.
(5) 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).
(6) 800 lbs. in 1856–7–8; only 400 lbs. in 1859–60–61; and 800 lbs. since.
(7) Average of 8 years only, 1856–1863.
(8) Average of 7 years only, 1859-1865.
(9) Average of 4 years only, the application of Silicates not being commenced until 1862.
(10) Average of 8 years only, as these experiments did not commence until 1858.