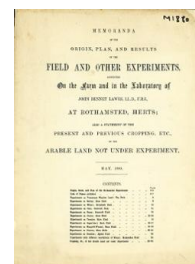


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ROTHAMSTED
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Memoranda of the Field Experiments at Rothamsted: May 1880



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Experiments on Permanent Meadow Land; the Park

Rothamsted Research

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THE PARK.

EXPERIMENTS WITH DIFFERENT MANURES ON PERMANENT MEADOW LAND.

The Land has probably been laid down with Grass for some centuries. No fresh seed has been artificially sown within the last 40 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 year after year to the same Plot.

During the first 19 years of the experiments, 1856-1874, the first crop only, each year, was mown, made into hay, removed from the land, and weighed. As a rule, the second crop was fed-off by sheep having no other food, the object being not to disturb the condition of the manuring. Frequently, however, the animals suffered considerably; and in 1866, 1870, 1873, and 1874, the second crops (and third, if any) were cut, and spread on the respective Plots. In the twentieth season, 1875, the second crops being unusually heavy, and the weather favourable, they were, for the first time, cut, weighed as hay, and removed. In 1876 they were cut and spread on the Plots. In 1877 and 1878 the second crops were again made into hay, weighed, and removed; and it is intended, in future, to adopt this plan, whenever the weather will permit. In 1879 the second crops were cut, sampled, carted, and weighed, green; the dry matter in the weighed samples was determined, and the produce reckoned into hay by adding one-fourth to the calculated dry matter per acre.

(Area under experiment, about 7 acres.)

1 ton, (found avo.)	.. .. .	or	1.59 Prussian Morgen.
1 lb. (hundredweight)	.. .. .	or	0.91 Zollverein Pfund.
1 cwt. (hundredweight)	.. .. .	or	1.02 Centner.
1 ton, .. .. .	.. .. .	or	20.33 Centner.
1 lb. per acre .. .. .	.. .. .	or	0.57 Zoll. Pfd. per Pr. Morgen.
1 cwt. per acre .. .. .	.. .. .	or	0.64 Centner per Pr. Morgen.
1 ton per acre .. .. .	.. .. .	or	12.82 Centner per Pr. Morgen.

Manures, per acre, per Annum.

PLOTS.	PRODUCE PER ACRE, WEIGHED AS HAY.												PLOTS.
	Average per Annum. (First Crops only.)						Twenty-third Season, 1878.			Twenty-fourth Season, 1879.			
	10 Years, 1866-67, 1866-75.	10 Years, 1866-75.	20 Years, 1866-75.	First Crop.	Second Crop.	Total.	First Crop.	Second Crop.	Total.	First Crop.	Second Crop.	Total.	
1	48½	37½	43	30½	17½	48½	43½	15	48½	43½	15	56½	1
2	41½	32	36½	21	15½	36½	33½	12½	36½	33½	12½	46	2
3	22½	20	21½	16½	13½	29½	27	11½	29½	27	11½	38½	3
4	23½	21½	22½	19½	15½	34½	29½	11½	41	41	56½	11 4	4
5	33½	30½	32½	21½	18½	36	28	8	36	36	36	56½	2 5
6	30½	22	26½	17½	13½	36	43	8	43	43	43	56½	6
7	31½	30½	30½	37	18½	55½	48	11½	55½	48	11½	56½	5
8	33½	36½	35½	35	22½	57½	40½	14	54½	40½	14	54½	7
9	33½	26½	30½	22½	17½	40	30½	9½	40½	30½	9½	40½	8
10	53½	48½	51	56	24½	80½	68½	14½	83	68½	14½	83	9
11	52½	39½	46½	41	22	63	51	14½	65½	51	14½	65½	10
12	61½	53½	57½	51½	41½	93	64½	21½	86	64½	21½	86	11
13	63½	61½	62½	60	38	98	67	21½	88½	67	21½	88½	2 11
14	25	22½	24	16½	16	32½	28½	9½	37½	28½	9½	37½	12
15	55½	59½	57½	55	29½	84½	66½	16½	83	66½	16½	83	13
16	53½	60½	57	48	15½	63½	53½	15½	68½	53½	15½	68½	14
17	36½	35	35½	25½	21½	46½	34½	11	45½	34½	11	45½	15
18	45½	47½	46½	42½	20½	63½	48	11½	59½	48	11½	59½	16
19	34½	33½	33½	27½	14½	41½	37½	9½	47	37½	9½	47	17
20	21	23½	24	34½	17½	51½	47	11	58	47	11	58	18
	38½	38½	38½	39½	17½	56½	47½	9	56½	47½	9	56½	19
	36½	36½	36½	42½	14	56½	48	10	58	48	10	58	20

(7) The application of Silicates did not commence until 1862; 9 years (1862-1870), 200 lbs. Silicate Lime, and 200 lbs. Silicate Soda; 1871, and 11 years, 400 lbs. Silicate Soda.
 (8) 550 lbs. Nitrate of Soda is reckoned to contain the same amount of Nitrogen as 400 lbs. of "Ammonia-salts."
 (9) The manures specified were first applied in 1859 (previously, 1856-7 and 8, Sawdust only).
 (10) Averages of 8 years, 10 years, and 18 years, as these experiments did not commence until 1858.
 (11) Averages of (1 year), 10 years, and 11 years, as the experiment only commenced in 1865.
 (12) Averages of 4 years only, 1872-75.