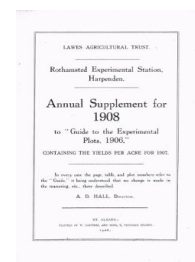


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LAWES AGRICULTURAL TRUST.

Rothamsted Experimental Station,
Harpenden.

Annual Supplement for 1908

to "Guide to the Experimental
Plots, 1906,"

CONTAINING THE YIELDS PER ACRE FOR 1907.

In every case the page, table, and plot numbers refer to the "Guide," it being understood that no change is made in the manuring, etc., there described.

A. D. HALL, DIRECTOR.

ST. ALBANS :

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1908.

METEOROLOGICAL RECORDS, 1907.

(See "Guide," page 16, Table IX.)

	Rain.			Drainage through soil.			Bright Sun- shine.	Temperature.	
	Total Fall.		No. of Rainy Days.					Max.	Min.
	5-inch Funnel Gauge.	¹⁰⁰⁰ th Acre Gauge.	¹⁰⁰⁰ th Acre Gauge.	20 ins. deep.	40 ins. deep.	60 ins. deep.			
	Inches.	Inches.	No.	Inches.	Inches.	Inches.	Hours.	°F.	°F.
January	1.236	1.254	10	0.863	0.956	0.966	66.5	41.9	32.0
February	1.452	1.476	15	0.958	1.047	1.025	85.2	41.8	30.7
March	1.285	1.312	13	0.057	0.155	0.107	206.4	52.9	32.2
April	2.855	2.846	17	0.567	0.539	0.509	143.2	53.9	37.7
May	2.377	2.396	18	0.288	0.384	0.356	164.4	59.5	42.9
June... ..	2.484	2.609	20	0.358	0.391	0.366	160.1	62.5	48.4
July	2.165	2.209	16	0.276	0.259	0.236	170.6	65.1	48.9
August	1.682	1.802	14	0.003	0.016	0.013	174.5	66.6	50.2
September	0.721	0.778	8	...	...	...	185.1	65.9	46.8
October	4.876	4.890	23	2.943	2.830	2.713	97.3	56.1	42.2
November	2.424	2.439	18	1.910	1.982	1.940	58.0	49.4	37.8
December	3.435	3.396	20	3.064	3.201	3.165	45.8	45.0	34.9
Total or Mean	26.992	27.407	192	11.287	11.760	11.396	1557.1	55.1	40.4

MANGEL WURZEL. BARN FIELD, 1907.

(See "Guide," page 11, Table VI.)

Strip.	Strip Manures.	Cross-dressings.				
		O.	N.	A.	A C.	C.
		None.	Nitrate of Soda.	Ammonium Salts.	Rape-cake & Ammonium Salts.	Rape Cake.
		Tons.	Tons.	Tons.	Tons.	Tons.
1	Dung only	{R. 26.00 L. 3.64	{41.42 4.64	{33.52 5.27	{34.29 4.90	{35.02 5.17
2	Dung, Super., Potash	{R. 26.52 L. 3.33	{42.13 4.61	{41.68 6.64	{43.52 7.08	{40.74 5.34
4	Complete Minerals	{R. 5.95 L. 1.09	{30.46 35.15 4.00 4.94	{26.68 3.42	{40.97 5.25	{33.09 4.11
5	Superphosphate only	{R. 6.21 L. 1.17	{24.62 3.42	{10.88 2.86	{11.26 2.18	{15.43 2.18
6	Super. and Potash	{R. 5.78 L. 1.05	{25.05 3.14	{25.22 3.44	{35.88 5.68	{28.15 2.84
7	Super., Sulph. Mag. & Chloride Sodium	{R. 6.59 L. 1.27	{26.54 3.75	{26.52 3.44	{34.38 5.29	{30.59 3.76
8	None ...	{R. 5.15 L. 1.06	{18.60 3.84	{9.87 3.03	{10.90 2.26	{13.24 2.40

HAY. THE PARK GRASS PLOTS, 1907.

(See "Guide," page 19, Table XI.)

Plot.	Manuring.	Yield of Hay per acre.		
		1st Crop.	2nd Crop.	Total.
		Cwt.	Cwt.	Cwt.
3	Unmanured	21.3	1.8	23.1
12	Unmanured (1)	25.3	4.3	29.6
2	Ammonium salts alone (1)	26.1	2.2	28.3
1	Superphosphate of Lime	34.4	5.3	39.7
4-1	Mineral Manure without Potash	25.0	2.0	27.0
8	Complete Mineral Manure	36.3	5.9	42.2
7	As 7, 1869 and since (2)	57.2	13.2	70.4
6	As 7, 1876 and since (3)	49.6	13.0	62.6
15	Superphosphate and Potash, 1898 and since	46.0	11.7	57.7
5	Nitrate of Soda alone	24.5	2.1	26.6
17	Superphosphate and Amm.-salts	38.8	7.9	46.7
4-2	Mineral Manure (without Potash) and Amm.-salts	40.6	1.9	42.5
10	Complete Mineral Manure and Amm.-salts	50.0	4.7	54.7
9	Dung and Fish Guano, once in 4 yrs.	65.0	7.9	72.9
13	Complete Mineral Manure and extra Amm.-salts	52.2	15.5	67.7
11-1	As 11-1, and Silicate Soda	46.7	24.0	70.7
11-2	Complete Mineral Manure and Nit. Soda=43 lb. N.	68.3	29.2	97.5
16	Do. do. do. and Nit. Soda=86 lb. N.	50.4	12.2	62.6
14		51.2	13.3	64.5

Quick Lime (ground), at the rate of 2000 lb. per acre, applied to the South half of plots 1 to 4-2, 7 to 11-2, 13 and 16, in January, 1907.

- (1) Received Farmyard Dung, 8 yrs., 1856-63. (3) Nitrate of Soda alone previously.
 (2) Ammonium salts alone, previous to 1869.

BOTANICAL COMPOSITION, PER CENT.

First Crop, 1907.

(See "Guide," page 20, Table XII.)

Plot.	Manuring.	Gramineæ.	Leguminosæ.	Other Orders.
		Per cent.	Per cent.	Per cent.
3	Unmanured	51.6	6.2	42.2
4-1	Superphosphate of Lime	54.4	5.2	40.4
8	Mineral Manure without Potash	44.8	15.2	40.0
7	Complete Mineral Manure	53.3	29.3	17.4
6	As 7, 1869 and since (2)	44.9	38.7	16.4
15	As 7, 1876 and since (3)	37.8	49.9	12.3

WHEAT. BROADBALK FIELD, 1907.

(See "Guide," page 26, Table XIV.)

Plot.	Manuring.	Dressed Grain.		Straw.
		Yield.	Weight per Bushel.	
		Bushels.	lbs.	Cwt.
2	Farmyard Manure	33.7	60.5	56.6
3	Unmanured	9.1	60.7	9.8
5	Complete Mineral Manure	11.5	60.6	15.1
6	As 5, and single Amm.-salts	23.9	60.4	31.4
7	As 5, and double do.	33.6	60.5	55.8
8	As 5, and treble do.	34.7	59.4	71.6
9	As 5, and single Nitrate Soda	30.2	60.5	46.0
10	Double Amm.-salts alone	27.6	60.2	33.1
11	As 10, and Superphosphate	32.1	60.7	40.5
12	„ and Super and Sulph. Soda	41.6	60.9	51.3
13	„ and Super and Sulph. Potash	34.7	60.2	57.3
14	„ and Super and Sulph. Mag.	36.6	60.9	46.9
15	Double Amm.-salts in Autumn, and Minerals	33.1	61.6	48.6
16	Double Nitrate and Minerals	34.7	60.4	65.7
17	} Minerals alone, or Double Amm.-salts alone, in alternate years }	*10.9	61.3	13.0
18		†31.0	60.7	44.3
19	Rape Cake alone	29.0	60.3	39.3

* Produce by Minerals. † Produce by Ammonium-salts.

BARLEY. HOOS FIELD, 1907.

(See "Guide," page 33, Table XVI.)

Plot.	Manuring.	Dressed Grain.		Straw.
		Yield.	Weight per Bushel.	
		Bushels.	lbs.	Cwt.
1 O	No Minerals, and no Nitrogen	7.7	53.5	6.8
2 O	Superphosphate only	13.0	56.5	9.2
3 O	Alkali salts only	8.1	54.3	14.8
4 O	Complete Minerals	13.2	55.0	24.3
1 A	Amm.-salts only	19.9	53.6	14.2
2 A	Superphos. and Amm.-salts	28.4	55.2	20.0
3 A	Alkali salts and Amm.-salts	20.1	54.4	15.8
4 A	Complete Minerals and Amm.-salts.	32.7	55.4	25.5
1 N	Nitrate of Soda alone	22.3	54.0	17.2
2 N	Superphos. and Nitrate Soda	29.0	56.1	25.4
3 N	Alkali salts and Nitrate Soda	21.2	55.0	15.9
4 N	Complete Minerals and Nitrate Soda	31.7	56.1	27.2
1 C	Rape Cake alone	29.1	55.3	21.2
2 C	Superphos. and Rape Cake	28.8	56.1	21.6
3 C	Alkali salts and Rape Cake	26.3	55.9	19.9
4 C	Complete Minerals and Rape Cake	31.1	56.7	23.4
7-1	Unmanured (after Dung, 1852-71)	15.5	55.3	18.4
7-2	Farmyard Dung	42.1	57.1	38.0

BARLEY. HOOS FIELD, 1907.

(Previous cropping: Potatoes, 1876-1901; Barley, 1902 and 1903;
Oats, 1904; Barley, 1905 and 1906).

(See "Guide," page 40, Table XIX.)

Plot.	Manures applied to the Potatoes, 1876-1901. Unmanured since.	Dressed Grain.		Straw.	Total Produce.
		Yield.	Weight per Bushel.		
		Bushels.	lbs.	Cwt.	lbs.
1	Unmanured	6.2	56.0	4.2	838
2	Unmanured 1882 and since, previously Dung alone ...	10.3	57.3	7.0	1400
3	Dung 1883-1901	18.9	56.7	15.4	2855
4	Dung 1883-1901	19.1	56.8	14.9	2818

WHEAT AFTER FALLOW (without manure 1851 and since).

HOOS FIELD, 1907.

(See "Guide," page 41, Table 20).

Dressed Grain	{	Yield—14.3 bushels.
	{	Weight per bushel—58.6 lbs.
Straw		19.5 cwt.
Total Produce		3094 lbs.

INOCULATION OF LEGUMINOUS PLANTS. HOOS FIELD.

(See "Guide" page 40, and plan page 37).

PRODUCE OF RED CLOVER (HAY) IN 1907.

1. EFFECT OF INOCULATING THE SOIL.

Plot.	Soil inoculated with---	Mean of Plots 6, 8, and 10 1st and 2nd Crops.
A ...	Hiltner's Preparation from Munich ...	Cwt. 66.1
B ...	Moore's Preparation from the United States ...	57.4
C ...	Soil from a field which had carried Red Clover in 1904 ...	59.0
D ...	Left uninoculated ...	56.6

2. EFFECT OF PAST MANURING.

Plot.		Mean of Plots, A, B, C, D, 1st and 2nd Crops.
6	Nitrate of Soda 1876-1901, since unmanured ...	Cwt. 58.7
8	Nitrate of Soda and Mixed Minerals 1876-1901, since unmanured ...	64.5
10	Mixed Minerals only 1876-1901, since unmanured ...	56.2

3. DETAILS OF THE ABOVE.

Plot.	1st Crop.	2nd Crop.	Total.
	Cwt.	Cwt.	Cwt.
6 A	42.0	20.6	62.6
6 B	40.5	18.4	58.9
6 C	40.5	18.1	58.6
6 D	36.0	18.9	54.9
8 A	45.0	27.0	72.0
8 B	39.0	21.5	60.5
8 C	40.5	23.1	63.6
8 D	40.5	21.3	61.8
10 A	37.5	26.1	63.6
10 B	33.0	19.8	52.8
10 C	34.5	20.5	55.0
10 D	33.0	20.3	53.3

LITTLE HOOS FIELD, 1904-07.

RESIDUAL VALUE OF VARIOUS MANURES.

(See "Guide," pages 41 and 42).

TOTAL PRODUCE—Grain and Straw or Roots and Leaves, per acre.

Series and Plot.	Manuring.	Swedes 1904.	Barley 1905.	Mangels 1906.	Spring Wheat 1907.
A 1	Unmanured	Tons. 10.3	lbs. 2323	Tons. 17.1	lbs. 3650
2	Dung (ordinary), 1904 only	13.1	4649	18.2	4673
3	" " 1905 "	8.8	3501	17.5	5393
4	" " 1906 "	8.8	2269	18.2	5471
5	" " 1907 "	9.8	2402	14.9	6903
B 1	Dung (cake-fed), 1904 only	15.7	4177	19.4	4319
2	Unmanured	10.0	2417	16.2	4025
3	Dung (cake-fed), 1905 only	9.5	5530	18.5	5497
4	" " 1906 "	11.4	2772	25.6	6489
5	" " 1907 "	9.4	2649	14.4	9407
C 1	Shoddy, 1904 only	14.7	3656	21.0	4667
2	" " 1905 "	11.1	4363	23.6	4550
3	Unmanured	10.6	2588	17.7	4334
4	Shoddy, 1906 only	10.7	2512	24.2	6231
5	" " 1907 "	10.3	2615	16.9	7495
D 1	Guano, 1904 only	14.6	2550	20.1	4056
2	" " 1905 "	11.0	5176	19.7	4165
3	" " 1906 "	10.9	2857	25.6	4846
4	Unmanured	10.6	2985	18.7	4618
5	Guano, 1907 only	10.6	2680	17.4	7375
E 1	Rape-cake, 1904 only	14.1	2674	17.8	3887
2	" " 1905 "	11.2	4185	17.9	4326
3	" " 1906 "	9.5	2645	22.7	4584
4	" " 1907 "	10.5	2734	19.4	6619
5	Unmanured	10.8	2769	19.5	4527
F 1	Unmanured	11.7	3132	22.9	4749
2	Superphosphate, 1904 only	12.2	3025	23.2	5064
3	" " 1905 "	10.2	3949	23.6	4956
4	" " 1906 "	9.7	3913	24.1	5419
5	" " 1907 "	9.7	4221	23.6	5698
G 1	Bone Meal, 1904 only	12.9	3176	23.1	5203
2	" " 1905 "	10.1	3636	22.1	5821
3	Unmanured	10.2	3495	20.6	5491
4	Bone Meal, 1906 only	9.9	3450	22.6	6043
5	" " 1907 "	9.2	3525	22.1	6276
H 1	Basic Slag, 1904 only	11.8	4400	20.5	6285
2	" " 1905 "	10.4	4002	21.3	5930
3	" " 1906 "	9.4	3662	21.4	5860
4	" " 1907 "	9.1	3624	17.0	5816
5	Unmanured	8.6	3293	17.4	5933