

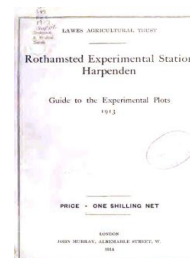
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Little Hoos Field - Residual Value of Manures

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WHEAT AFTER FALLOW

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HOOS FIELD

WHEAT AFTER FALLOW

The two half-acre plots in Hoos field are never manured, but every year one carries a wheat crop and the other is given a bare summer fallow, the treatment alternating, so that every year one plot is carrying a wheat crop following a bare fallow. By comparing the results obtained with the yield of the unmanured plot growing wheat continuously, the benefit of the bare fallow can be estimated. (See Table XXI.)

LITTLE HOOS FIELD

RESIDUAL VALUE OF MANURES

The object of the experiments in this field is to test the residual value of certain typical manures, *i.e.*, the value of the residues left in the soil after one or more crops have been grown since the time of their application. To eliminate the effect of season, the result yielded by the residue is in all cases compared with that of a new application of the same manure, as well as with a continuously unmanured check plot.

The ordinary dung is made by feeding beasts with hay and roots only, the beasts making the cake-fed dung alongside receive also an ordinary allowance of linseed and cotton cake. The two lots of dung are then laid up in heaps for a short time, and weighed out immediately before applying.

TABLE XXII.—*General Dressings of Mineral Manure on Series A to E, and of Nitrogenous Dressings on Series F to H.*

(Quantities per acre.)

Series A to E.		Series F, G, H.	
1904	3 cwt. Superphosphate.	1904	1 cwt. Sulphate Ammonia.
1905	...	1905	1 cwt. Sulphate Ammonia.
1906	3 cwt. Sulphate Potash.	1906	2 cwt. Sulphate Ammonia. 3 cwt. Sulphate Potash.
1907	3 cwt. Superphosphate.	1907	1 cwt. Sulphate Ammonia.
1908	3 cwt. Superphosphate.	1908	1 cwt. Sulphate Ammonia.
1909	3 cwt. Superphosphate.	1909	1 cwt. Sulphate Ammonia.
1910	...	1910	1 cwt. Sulphate Ammonia.
1911	3 cwt. Superphosphate. 200 lb. Sulphate Potash.	1911	1 cwt. Sulphate Ammonia. 200 lb. Sulphate Potash.
1912	...	1912	1 cwt. Nitrate Soda.

H.—*Little Hoos Field. Plan of Rotation Plots arranged to test the Residual Value of various Manures—one, two, three, and four years after their application.*

ADJOINS HOOS FIELD.	A	5 Dung (ordinary) 16 tons per acre 1907, '11, '15	4 Dung (ordinary) 16 tons per acre 1906, '10, '14	3 Dung (ordinary) 16 tons per acre 1905, '09, '13	2 (1) Dung (ordinary) 16 tons per acre 1904, '08, '12	1 Dung (ordinary) 16 tons per acre 1903, '07, '11
	B	5 Dung (Cake-fed) 16 tons per acre 1907, '11, '15	4 Dung (Cake-fed) 16 tons per acre 1906, '10, '14	3 Dung (Cake-fed) 16 tons per acre 1905, '09, '13	2 (1) Dung (Cake-fed) 16 tons per acre 1904, '08, '12	1 Dung (Cake-fed) 16 tons per acre 1903, '07, '11
	C	5 Shoddy 1 ton per acre 1907, '11, '15	4 Shoddy 1 ton per acre 1906, '10, '14	3 Shoddy 1 ton per acre 1905, '09, '13	2 Shoddy 1 ton per acre 1904, '08, '12	1 Shoddy 1 ton per acre 1903, '07, '11
	D	5 Guano 8 cwt per acre 1907, '11, '15	4 Guano 8 cwt per acre 1906, '10, '14	3 Guano 8 cwt per acre 1905, '09, '13	2 Guano 8 cwt per acre 1904, '08, '12	1 Guano 8 cwt per acre 1903, '07, '11
	E	5 Rape-cake 10 cwt per acre 1907, '11, '15	4 Rape-cake 10 cwt per acre 1906, '10, '14	3 Rape-cake 10 cwt per acre 1905, '09, '13	2 Rape-cake 10 cwt per acre 1904, '08, '12	1 Rape-cake 10 cwt per acre 1903, '07, '11
	F	5 Superphosphate 600 lb. per acre 1907, '11, '15	4 Superphosphate 600 lb. per acre 1906, '10, '14	3 Superphosphate 600 lb. per acre 1905, '09, '13	2 Superphosphate 600 lb. per acre 1904, '08, '12	1 Superphosphate 600 lb. per acre 1903, '07, '11
	G	5 Bone Meal 430 lb. per acre 1907, '11, '15	4 Bone Meal 430 lb. per acre 1906, '10, '14	3 Bone Meal 430 lb. per acre 1905, '09, '13	2 Bone Meal 430 lb. per acre 1904, '08, '12	1 Bone Meal 430 lb. per acre 1903, '07, '11
	H	5 Basic Slag 600 lb. per acre 1907, '11, '15	4 Basic Slag 600 lb. per acre 1906, '10, '14	3 Basic Slag 600 lb. per acre 1905, '09, '13	2 Basic Slag 600 lb. per acre 1904, '08, '12	1 Basic Slag 600 lb. per acre 1903, '07, '11

Each Plot has received Superphosphate and Sulphate Potash as set out in Table XXII.

Each Plot has received both Nitrogenous and Mineral Manures as set out in Table XXII.

Adjoins Broadbalk Field.

Area of each plot, $\frac{1}{8}$ th acre.

Series A	deals with the residual effects of	Ordinary Dung.
" B	"	"
" C	"	"
" D	"	"
" E	"	"
" F	"	"
" G	"	"
" H	"	"

In each series the manure is applied to one plot in 1904 and each successive fourth year, to another plot in 1905 and each successive fourth year, to a third plot in 1906 and each successive fourth year, and to a fourth plot in 1907 and each successive fourth year.

All the plots in the Series A to E, which deal with Nitrogenous Manures, receive, as necessary, equal amounts of Phosphates and Potash. Similarly, all the plots in the Series F, G, H, dealing with Phosphatic Manures, receive equal dressings of Nitrogenous or Potassic Manures as required.

(1) In 1912 only 10 tons 8 cwt. per acre of ordinary and cake-fed Dung respectively was applied, instead of 16 tons as in previous years.

(2) In 1908 and since, the Nitrogenous Manures applied to the plots of Series C, D, and E have been as follows—

Series C.	Shoddy, 957 lb.	= 50 lb. N. per acre.
" D.	Peruvian Guano, 777 lb.	= 50 lb. N. "
" E.	Rape Cake, 1036 lb.	= 50 lb. N. "



Check plots receiving in Series A to E no Nitrogen throughout, Series F to H, no Phosphates throughout.

RESIDUAL VALUE OF VARIOUS MANURES

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TABLE XXIII.—*Total Produce, Grain and Straw, or Roots and Leaves, per acre.*

Series and Plot.	Manuring.	Swedes, 1904.	Barley, 1905.	Mangolds, 1906.	Spring Wheat, 1907.	Swedes, 1908.	Barley, 1909.	Wheat, 1910.	Mangolds, 1911.	Wheat, 1912.*
		Tons.	Lb.	Tons.	Lb.	Tons.	Lb.	Lb.	Tons.	Bush.
A 1	Unmanured	10.3	2323	17.1	3650	14.0	3792	2270	11.6	19.4
2	Dung, ordinary (1904, '8, '12)	13.1	4649	18.2	4673	19.1	5123	2572	13.9	34.3
3	" " (1905 & '9)	8.8	3501	17.5	5393	14.5	5544	2681	14.1	26.9
4	" " (1906 & '10)	8.8	2269	18.2	5471	15.5	4057	2406	12.5	29.2
5	" " (1907 & '11)	9.8	2402	14.9	6908	17.3	4581	2358	15.8	26.8
B 1	Dung, cake-fed (1904, '8, '12)	15.7	4177	19.4	4319	22.4	5362	2386	14.1	35.6
2	Unmanured	10.0	2417	16.2	4025	14.3	3862	2261	12.0	21.8
3	Dung, cake-fed (1905 & '9)	9.5	5530	18.5	5497	14.2	6641	2921	14.2	29.4
4	" " (1906 & '10)	11.4	2772	25.6	6489	16.9	4400	3502	14.4	26.5
5	" " (1907 & '11)	9.4	2649	14.4	9407	19.0	4298	2369	17.1	31.4
C 1	Shoddy (1904, '8, & '12)	14.7	3656	21.0	4667	19.7	3969	2295	11.4	28.4
2	" " (1905 & '9)	11.1	4363	23.6	4550	16.3	4558	2387	11.6	26.1
3	Unmanured	10.6	2588	17.7	4334	15.1	3850	2561	11.7	24.2
4	Shoddy (1906 & '10)	10.7	2512	24.2	6231	19.1	4466	3461	14.0	30.4
5	" " (1907 & '11)	10.3	2615	16.9	7495	22.2	5448	2560	14.7	29.8
D 1	Guano (1904, '8, & '12)	14.6	2550	20.1	4056	20.9	3608	1742	10.5	28.8
2	" " (1905 & '9)	11.0	5176	19.7	4165	15.3	6834	2114	11.5	24.1
3	" " (1906 & '10)	10.9	2857	25.6	4846	15.9	4053	3392	11.1	22.5
4	Unmanured	10.6	2985	18.7	4618	17.4	4510	2739	11.8	26.9
5	Guano (1907 & '11)	10.6	2680	17.4	7375	15.7	4014	2374	14.2	26.3
E 1	Rape Cake (1904, '8, & '12)	14.1	2674	17.8	3887	19.7	3750	2180	10.7	27.7
2	" " (1905 & '9)	11.2	4185	17.9	4326	15.1	5203	2242	11.7	22.3
3	" " (1906 & '10)	9.5	2645	22.7	4584	14.5	3866	3486	11.5	22.2
4	" " (1907 & '11)	10.5	2734	19.4	6619	15.2	4661	2516	14.5	25.1
5	Unmanured	10.8	2769	19.5	4527	14.7	4155	2784	12.7	21.1
F 1	Unmanured	11.7	3132	22.9	4749	14.1	4814	3166	8.7	31.6
2	Superphosphate (1904, '8, '12)	12.2	3025	23.2	5064	16.9	4726	3223	10.9	33.4
3	" " (1905 & '9)	10.2	3949	23.6	4956	14.6	4973	2922	11.7	31.9
4	" " (1906 & '10)	9.7	3913	24.1	5419	16.0	5280	2682	12.8	34.9
5	" " (1907 & '11)	9.7	4221	23.6	5698	16.4	5641	3190	14.2	35.4
G 1	Bone-Meal (1904, '8, & '12)	12.9	3176	23.1	5203	16.7	4445	3345	9.9	32.8
2	" " (1905 & '9)	10.1	3636	22.1	5821	14.3	4922	3657	9.9	32.7
3	Unmanured	10.2	3495	20.6	5491	12.7	4247	3701	9.2	29.0
4	Bone-Meal (1906 & '10)	9.9	3450	22.6	6043	14.2	4711	3263	10.5	31.8
5	" " (1907 & '11)	9.2	3525	22.1	6273	19.9	5285	3512	12.6	34.4
H 1	Basic Slag (1904, '8, '12)	11.8	4400	20.5	6285	13.8	4182	3564	11.5	35.7
2	" " (1905 & '9)	10.4	4002	21.3	5930	13.6	4530	3596	12.0	33.7
3	" " (1906 & '10)	9.4	3662	21.4	5860	13.6	4431	3943	12.5	29.1
4	" " (1907 & '11)	9.1	3624	17.0	5816	14.4	3860	3804	12.0	32.5
5	Unmanured	8.6	3293	17.4	5933	11.4	4511	4005	10.5	30.1

The yields on the plots to which the manure was applied in any given year are printed in heavier type.

* Dressed Grain only.