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Memoranda of the Plan and Results of the Rothamsted Field Experiments, June 1862



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Experiments on Wheat: Broadbalk

Rothamsted Research

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EXPERIMENTS ON THE GROWTH OF **WHEAT** YEAR AFTER YEAR ON THE SAME LAND; WITHOUT MANURE, AND WITH DIFFERENT KINDS OF MANURE.

BROADBALK FIELD.

Previous Cropping—1839, Turnips, with Farmyard Manure; 1840, Barley; 1841, Peas; 1842, Wheat; 1843, Oats. The last four Crops Unmanured.
First Experimental Wheat Crop in 1844. Wheat every year since; and with some exceptions, nearly the same description of Manures on the same Plots each year—especially during the last 10 years.

(Area under experiment, about 13 acres).

PLOTS.	Manures, per acre, for the growing (19th) Wheat-crop—1852.	Average Produce per Acre, per Annum, during the last ten Years, 1852-61.		
	1 acre 1 bushel 1 lb. (pound, avoird.) 1 bushel per acre 1 lb. per acre = (about) 0.40 Hectare. = (about) 0.36 Hectolitre. = (about) 0.45 Kilogramme. = (nearly) 0.9 Hectolitre per Hectare. = 1.12 Kilogramme per Hectare.	Dressed Corn.	Total Corn.	Total Straw.
0	Superphosphate of Lime (three times as much as on No. 5 and succeeding Plots).	bushels.	lbs.	lbs.
1	Mixed Alkalies (twice as much as on No. 5 and succeeding Plots).	17½	1106	1829
2	Farm-yard dung (14 tons every year).	16	995	1771
3	Unmanured, continuously.	34½	2145	3795
4	Unmanured for Crop of 1852, and since (previously Superphosphate and Ammonia-salts).	15½	944	1663
5 (a-b)	Mixed Alkalies (1)	16½	1051	1747
6 (a-b)	ditto	18½	1149	1919
7 (a-b)	ditto ; and 200 lbs. Ammonia-salts. ⁽²⁾	27½	1697	2946
8 (a-b)	ditto ; and 400 lbs. ditto.	34½	2158	4076
9 { a	ditto ; and 550 lbs. Nitrate of Soda.	36	2251	4530
b	ditto ; and 550 lbs. ditto.	31½	1967	4075
10 { a	none since 1844	24½	1509	3080
b	none (except 1844, '48, & '50) ; none since 1844, '48, & '50) ; 400 lbs. "Ammonia-salts."	21	1318	2516
11 (a-b)	none	25½	1586	2984
12 (a-b)	366½ lbs. (6) Sulphate of Soda	28½	1757	3159
13 (a-b)	200 lbs. (6) Sulphate of Potass	33½	2086	3832
14 (a-b)	280 lbs. (6) Sulphate of Magnesia ;	33	2078	3847
15 { a	"Mixed Alkalies"	33½	2094	3916
b	ditto ⁽⁷⁾	32	2007	3699
16 (a-b)	ditto ⁽⁸⁾ ; and 400 lbs. ditto ; and 500 lbs. Rape-cake.	33½	2108	3946
17 (a-b)	ditto ; and 800 lbs. ditto.	37	2322	5044
18 (a-b)	none ; "Superphosphate of Lime" ;	31½ ⁽⁹⁾	1993 ⁽⁹⁾	3718 ⁽⁹⁾
19	ditto ⁽⁹⁾ ; 300 lbs. "Ammonia-salts" ; and 500 lbs. Rape-cake.	18½ ⁽¹⁰⁾	1174 ⁽¹⁰⁾	2001 ⁽¹⁰⁾
20	Unmanured continuously.	31	1966	3508
21	"Mixed Alkalies"	15½	991	1758
22	ditto	21½	1329	2344
		21	1300	2283

(1) Since 1858, 200 lbs. Sulphate of Potass, 100 lbs. Sulphate of Soda, and 100 lbs. Sulphate of Magnesia ; for Crop of 1857-8, and previously, 300 lbs., 200 lbs., and 100 lbs., respectively.

(2) 200 lbs. Bone-ash, 150 lbs. Sulphuric acid (Sp. gr. 1.7). (3) Equal parts Sulphate and Murate of Ammonia. (4, 5, 6) For 1858, and previously 1½ time as much.

(7) The Manures of 17 and 18 alternate. (8) With Hydrochloric instead of Sulphuric Acid. (9) Average of 10 years' Ammonia-salts alternated with Mineral Manures.

(10) Average of 10 years' Mineral Manures alternated with Ammonia-salts.