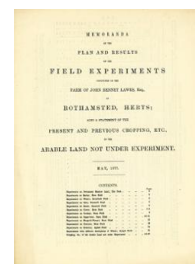


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Experiments on Wheat; Broadbalk Field

Rothamsted Research

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BROADBALK FIELD.

EXPERIMENTS ON THE GROWTH OF WHEAT YEAR AFTER YEAR ON THE SAME LAND; WITHOUT MANURE, AND WITH DIFFERENT KINDS OF MANURE. 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 Manure on the same Plots each year—especially during the last 26 years (1852 and since). Unless otherwise stated, the Manures are sown in the Autumn before the seed.

(Area under experiment, about 13 acres.)

PLOTS.	PRODUCE PER ACRE.												THIRTY-THIRD SEASON, 1876.		PLOTS.					
	AVERAGE PER ANNUM.												Quantity.	Total Straw.						
	DRESSED CORN.																			
	WEIGHT PER BUSHEL.																			
0	18 1/2	16 1/2	15 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	4 1/2	3 1/2	2 1/2	1 1/2	0 1/2	0	
1	16 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	4 1/2	3 1/2	2 1/2	1 1/2	0 1/2	0	1	1	
2	35 1/2	32 1/2	30 1/2	28 1/2	26 1/2	24 1/2	22 1/2	20 1/2	18 1/2	16 1/2	14 1/2	12 1/2	10 1/2	8 1/2	6 1/2	4 1/2	2 1/2	0 1/2	2	
3	15 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	4 1/2	3 1/2	2 1/2	1 1/2	0 1/2	0	3	3	
4	17 1/2	16 1/2	15 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	4 1/2	3 1/2	2 1/2	1 1/2	0 1/2	4	
5 (a and b)	18 1/2	16 1/2	15 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	4 1/2	3 1/2	2 1/2	1 1/2	0 1/2	5 (a and b)	
6 (a and b)	28 1/2	26 1/2	24 1/2	22 1/2	20 1/2	18 1/2	16 1/2	14 1/2	12 1/2	10 1/2	8 1/2	6 1/2	4 1/2	2 1/2	0 1/2	0	0	6 (a and b)	6	
7 (a and b)	36 1/2	34 1/2	32 1/2	30 1/2	28 1/2	26 1/2	24 1/2	22 1/2	20 1/2	18 1/2	16 1/2	14 1/2	12 1/2	10 1/2	8 1/2	6 1/2	4 1/2	0 1/2	7 (a and b)	
8 (a and b)	34 1/2	32 1/2	30 1/2	28 1/2	26 1/2	24 1/2	22 1/2	20 1/2	18 1/2	16 1/2	14 1/2	12 1/2	10 1/2	8 1/2	6 1/2	4 1/2	2 1/2	0 1/2	8 (a and b)	
9 { a } { b }	34 1/2	32 1/2	30 1/2	28 1/2	26 1/2	24 1/2	22 1/2	20 1/2	18 1/2	16 1/2	14 1/2	12 1/2	10 1/2	8 1/2	6 1/2	4 1/2	2 1/2	0 1/2	9 { a } { b }	
10 { a } { b }	22 1/2	21 1/2	20 1/2	19 1/2	18 1/2	17 1/2	16 1/2	15 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	10 { a } { b }	
11 (a and b)	29 1/2	27 1/2	25 1/2	23 1/2	21 1/2	19 1/2	17 1/2	15 1/2	13 1/2	11 1/2	9 1/2	7 1/2	5 1/2	3 1/2	1 1/2	0 1/2	0	0	11 (a and b)	
12 (a and b)	35 1/2	33 1/2	31 1/2	29 1/2	27 1/2	25 1/2	23 1/2	21 1/2	19 1/2	17 1/2	15 1/2	13 1/2	11 1/2	9 1/2	7 1/2	5 1/2	3 1/2	1 1/2	0 1/2	12 (a and b)
13 (a and b)	34 1/2	32 1/2	30 1/2	28 1/2	26 1/2	24 1/2	22 1/2	20 1/2	18 1/2	16 1/2	14 1/2	12 1/2	10 1/2	8 1/2	6 1/2	4 1/2	2 1/2	0 1/2	0	13 (a and b)
14 (a and b)	35 1/2	33 1/2	31 1/2	29 1/2	27 1/2	25 1/2	23 1/2	21 1/2	19 1/2	17 1/2	15 1/2	13 1/2	11 1/2	9 1/2	7 1/2	5 1/2	3 1/2	1 1/2	0 1/2	14 (a and b)
15 { a } { b }	33 1/2	31 1/2	29 1/2	27 1/2	25 1/2	23 1/2	21 1/2	19 1/2	17 1/2	15 1/2	13 1/2	11 1/2	9 1/2	7 1/2	5 1/2	3 1/2	1 1/2	0 1/2	0	15 { a } { b }
16 (a and b)	38 1/2	36 1/2	34 1/2	32 1/2	30 1/2	28 1/2	26 1/2	24 1/2	22 1/2	20 1/2	18 1/2	16 1/2	14 1/2	12 1/2	10 1/2	8 1/2	6 1/2	4 1/2	0 1/2	16 (a and b)
17 (a and b)	18 1/2	16 1/2	15 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	4 1/2	3 1/2	2 1/2	1 1/2	0 1/2	0	17 (a and b)
18 (a and b)	32 1/2	30 1/2	28 1/2	26 1/2	24 1/2	22 1/2	20 1/2	18 1/2	16 1/2	14 1/2	12 1/2	10 1/2	8 1/2	6 1/2	4 1/2	2 1/2	0 1/2	0	0	18 (a and b)
19	28 1/2	26 1/2	24 1/2	22 1/2	20 1/2	18 1/2	16 1/2	14 1/2	12 1/2	10 1/2	8 1/2	6 1/2	4 1/2	2 1/2	0 1/2	0	0	0	0	19
20	15 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	4 1/2	3 1/2	2 1/2	1 1/2	0 1/2	0	0	0	20
21	22 1/2	21 1/2	20 1/2	19 1/2	18 1/2	17 1/2	16 1/2	15 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	4 1/2	21
22	21 1/2	20 1/2	19 1/2	18 1/2	17 1/2	16 1/2	15 1/2	14 1/2	13 1/2	12 1/2	11 1/2	10 1/2	9 1/2	8 1/2	7 1/2	6 1/2	5 1/2	4 1/2	0 1/2	22

(1) Made with Muratic instead of Sulphuric Acid.
 (2) Averages of Mineral Manures, alternated with Ammonia-salts.
 (3) Averages of Ammonia-salts, alternated with Mineral Manures.
 (4) Plots 17 had the Ammonia-salts for the Crop of 1876.
 (5) Plots 18 had the Mineral Manures for the Crop of 1876.
 (6) Averages of 12 years, 11 years, and 25 years only; as, in 1868, owing to a mistake in carting, the produce was not recorded.
 (7) Plots 17 and 18 were divided into duplicates, "a" and "b," respectively, which are named after the crops of 1864-65 and 7, the "a" portions of the crops of 1867, 8, 9, 10, and 11, and the "b" portions of the crops of 1868, 9, 10, 11, 12, 13, 14, and 15, and the "a" portions of the crops of 1872, 13, 14, and 17 (or 18); also for the crops of 1868, and since, cut straw (that produced in the previous season) has been applied (instead of Silicates) on the "a" portions of plots 5, 6, 7, 8, 11, 12, 13, 14, and 17 (or 18); also for the crop of 1874, and since, the straw of the previous season has been cut up and applied to the "a" portion of plot 15.

(1) 300 lbs. per annum for Crop of 1858, and previously.
 (2) 200 lbs. per annum for Crop of 1855, and previously.
 (3) "Superphosphate of Lime" in all cases, excepting for Plot 19, made from 200 lbs. Bone-ash, 150 lbs. Sulphuric acid sp. gr. 1.7 (and water).
 (4) The "Ammonia-salts," in all cases, equal parts Sulphate and Murate of Ammonia of Commerce.
 (5) 30, 475 lbs. Nitrate Soda in 1852, 1853, and 1854. 30, 475 lbs. Nitrate in 1852, 350 lbs. each year since. 350 lbs. Nitrate in 1853, and 400 lbs. in 1854.
 (6) For 1858, and previously, made with Muratic instead of Sulphuric Acid.
 (7) For 1872, and previously, 400 lbs. Sulphate Ammonia, sown in the Autumn.
 (8) For 1872 and previously, 300 lbs. Sulphate Ammonia and 500 lbs. Rape-cake, sown in the Autumn.
 (9) The Manures of Plots 17 and 18 are, year by year, transposed.