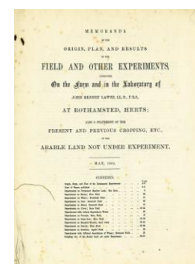


Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Memoranda of the Field Experiments at Rothamsted: May 1881



[Full Table of Content](#)

Experiments on Wheat; Broadbalk Field

Rothamsted Research

Rothamsted Research (1882) *Experiments on Wheat; Broadbalk Field* ; Memoranda Of The Field Experiments At Rothamsted: May 1881, pp 11 - 11 - DOI:
<https://doi.org/10.23637/ERADOC-1-245>

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 30 years (1852 and since). The Crop of the present year, 1881, is, therefore, the 38th Wheat Crop in succession. From the commencement of the experiments in 1843-4 up to 1876-7 inclusive, the mineral manures, the ammonia-salts, and rape-cake, &c., if any, were sown in the autumn, before the seed; in 1845, when, owing to the wet autumn and winter, all the manures were spring-sown; and for the crops of 1873, 4, 5, 6, and 7, the ammonia-salts were applied to Plot 15 every top-dressed in the spring. Nitrate of soda has, however, always been sown in the autumn, and for the great loss of the nitrogen of the manures by drainage, especially in wet winters, it has been decided to apply only the mineral manures (and Farmyard-manure) in the autumn, and the ammonia-salts, as well as the nitrate, in the spring; excepting on Plot 19, where, for comparison, the ammonia-salts are sown in the autumn. This plan was adopted for the first time for the crop of 1878.

(Area under experiment, about 13 acres.)

PLOTS.	PRODUCE PER ACRE.																
	Average per Annum.						Thirty-Seventh Season, 1880.										
	Dressed Corn.			Total Straw.			Dressed Corn.			Total Straw.							
	Quantity.	Weight per Bushel.	1843-44.	1844-45.	1845-46.	1846-47.	Quantity.	Weight per Bushel.	1879-80.	1880-81.	1881-82.	1882-83.					
0	Superphosphate of Lime (three times as much as on No. 5 and succeeding Plots)	Bushels.	18	14 1/2	13 1/2	12 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	13 1/2	11 1/2	11 1/2	0
1	Sulphates of Potash, Soda, and Magnesia (twice as much as on No. 5 and succeeding Plots)	Bushels.	16	10 1/2	13 1/2	12 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	1
2	Farmyard Manure (14 tons every year)	Bushels.	15 1/2	11	13 1/2	12 1/2	Bushels.	59 1/2	59 1/2	59 1/2	59 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	2
3	Unmanured continuously	Bushels.	16 1/2	11 1/2	14 1/2	13 1/2	Bushels.	57 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	3
4	Unmanured for Crop of 1852, and since; previously Superphosphate (made with Muratic Acid), and Sulphate Ammonia	Bushels.	18	12 1/2	15 1/2	14 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	4
5 (a and b)	200 lbs. of Sulphate Potash, 100 lbs. of Sulphate Soda, 100 lbs. Sulphate Mag., 3 1/2 cwt. Superphos., 200 lbs. Ammonia-salts	Bushels.	28 1/2	19 1/2	24	24	Bushels.	59 1/2	59 1/2	59 1/2	59 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	5 (a and b)
6 (a and b)	200 lbs. of Sulphate Potash, 100 lbs. of Sulphate Soda, 100 lbs. Sulphate Mag., 3 1/2 cwt. Superphos., 400 lbs. Ammonia-salts	Bushels.	37 1/2	28	35 1/2	35 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	6 (a and b)
7 (a and b)	200 lbs. of Sulphate Potash, 100 lbs. of Sulphate Soda, 100 lbs. Sulphate Mag., 3 1/2 cwt. Superphos., 600 lbs. Ammonia-salts	Bushels.	36 1/2	26 1/2	34 1/2	34 1/2	Bushels.	57 1/2	57 1/2	57 1/2	57 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	7 (a and b)
8 (a and b)	200 lbs. of Sulphate Potash, 100 lbs. of Sulphate Soda, 100 lbs. Sulphate Mag., 3 1/2 cwt. Superphos., 550 lbs. Nitrate Soda	Bushels.	26 1/2	21 1/2	24 1/2	24 1/2	Bushels.	56 1/2	56 1/2	56 1/2	56 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	8 (a and b)
9 (a and b)	200 lbs. of Sulphate Potash, 100 lbs. of Sulphate Soda, 100 lbs. Sulphate Mag., 3 1/2 cwt. Superphos., 550 lbs. Nitrate Soda	Bushels.	23 1/2	18 1/2	21 1/2	21 1/2	Bushels.	57 1/2	57 1/2	57 1/2	57 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	9 (a and b)
10 (a and b)	400 lbs. Ammonia-salts alone, for 1845, and each year since; Mineral Manure in 1844	Bushels.	27 1/2	19 1/2	22 1/2	22 1/2	Bushels.	57 1/2	57 1/2	57 1/2	57 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	10 (a and b)
11 (a and b)	400 lbs. Ammonia-salts, 3 1/2 cwt. Superphosphate	Bushels.	30	22 1/2	26 1/2	26 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	11 (a and b)
12 (a and b)	400 lbs. Ammonia-salts, 3 1/2 cwt. Superphosphate, and 366 1/2 lbs. of Sulphate of Soda	Bushels.	35 1/2	26 1/2	31 1/2	31 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	12 (a and b)
13 (a and b)	400 lbs. Ammonia-salts, 3 1/2 cwt. Superphosphate, and 280 lbs. of Sulphate of Potash	Bushels.	35 1/2	27 1/2	31 1/2	31 1/2	Bushels.	59 1/2	59 1/2	59 1/2	59 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	13 (a and b)
14 (a and b)	400 lbs. Ammonia-salts, 3 1/2 cwt. Superphosphate, and 280 lbs. of Sulphate of Magnesia	Bushels.	35 1/2	27 1/2	31 1/2	31 1/2	Bushels.	59 1/2	59 1/2	59 1/2	59 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	14 (a and b)
15 (a and b)	200 lbs. of Sulph. Pot., 100 lbs. of Sulph. Sod., 100 lbs. Sulph. Mag., 3 1/2 cwt. Superphos., 400 lbs. Amm.-salts, in Autumn	Bushels.	33 1/2	27 1/2	30 1/2	30 1/2	Bushels.	59 1/2	59 1/2	59 1/2	59 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	15 (a and b)
16 (a and b)	200 lbs. of Sulph. Pot., 100 lbs. of Sulph. Sod., 100 lbs. Sulph. Mag., 3 1/2 cwt. Superphos., 400 lbs. Amm.-salts, in Autumn	Bushels.	35 1/2	28 1/2	31 1/2	31 1/2	Bushels.	59 1/2	59 1/2	59 1/2	59 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	16 (a and b)
17 (a and b)	1852-64, 13 years, 200 lbs. Sulph. Potash, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag., 3 1/2 cwt. Superphos., and 800 lbs. Ammonia-salts; average produce 39 1/2 bush. Corn, 45 1/2 cwt. Superphos., 13 bush. Straw	Bushels.	39	13 1/2	15 1/2	15 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	17 (a and b)
18 (a and b)	1855 and since, unmanured; average produce (10 years, 1855-64) 14 1/2 bushels Corn, 13 cwt. Superphos., 100 lbs. Sulphate Ammonia	Bushels.	18 1/2	13	15 1/2	15 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	18 (a and b)
19	200 lbs. of Sulphate Potash, 100 lbs. of Sulphate Soda, 100 lbs. Sulphate Mag., and 3 1/2 cwt. Superphosphate	Bushels.	32 1/2	24 1/2	28 1/2	28 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	19
20	1878-9, and since, 1700 lbs. Rape-cake; 1852-78, 3 1/2 cwt. Superph. Lime, 300 lbs. Sulph. Am., and 500 lbs. Rape-cake, in Autumn	Bushels.	15 1/2	10 1/2	13 1/2	13 1/2	Bushels.	57 1/2	57 1/2	57 1/2	57 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	20
21	Unmanured continuously	Bushels.	22	17	19 1/2	19 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	21
22	200 lbs. of Sulph. Potash, 100 lbs. of Sulph. Soda, 100 lbs. Sulph. Mag., 3 1/2 cwt. Superphos., 100 lbs. Sulphate Ammonia	Bushels.	21 1/2	18	19 1/2	19 1/2	Bushels.	58 1/2	58 1/2	58 1/2	58 1/2	Cwts.	11 1/2	12 1/2	11 1/2	11 1/2	22

(1) 300 lbs. per annum for Crop of 1858, and previously.
 (2) 200 lbs. per annum for Crop of 1858, 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) 147 lbs. Ammonia-salts, in all cases, equal parts Sulphate and Muric Acid of Ammonia of Commerce.
 (5) 147 lbs. Ammonia-salts, in all cases, equal parts Sulphate and Muric Acid of Ammonia of Commerce.
 (6) 147 lbs. Ammonia-salts, in all cases, equal parts Sulphate and Muric Acid of Ammonia of Commerce.
 (7) For 1878 and previously, made with Muric Acid instead of Sulphuric Acid.
 (8) For 1872 and previously, 400 lbs. Sulphate Ammonia, sown in the Autumn; for 1873, 4, 5, 6, and 7, 400 lbs. Ammonia-salts, sown in the Spring; for 1878 and since, 400 lbs. Sulphate Ammonia, sown in the Autumn.
 (9) For 1872 and previously, 300 lbs. Sulphate Ammonia and 500 lbs. Rape-cake, sown in the Autumn; for 1873, 4, 5, 6, and 7, 400 lbs. Ammonia-salts, sown in the Spring; for 1878 and since, 400 lbs. Ammonia-salts, sown in the Autumn.
 (10) 300 lbs. per annum for Crop of 1858, and previously.
 (11) 200 lbs. per annum for Crop of 1858, and previously.
 (12) 200 lbs. per annum for Crop of 1858, and previously.
 (13) 200 lbs. per annum for Crop of 1858, and previously.
 (14) 200 lbs. per annum for Crop of 1858, and previously.
 (15) 200 lbs. per annum for Crop of 1858, and previously.
 (16) 200 lbs. per annum for Crop of 1858, and previously.
 (17) 200 lbs. per annum for Crop of 1858, and previously.
 (18) 200 lbs. per annum for Crop of 1858, and previously.
 (19) 200 lbs. per annum for Crop of 1858, and previously.
 (20) 200 lbs. per annum for Crop of 1858, and previously.
 (21) 200 lbs. per annum for Crop of 1858, and previously.
 (22) 200 lbs. per annum for Crop of 1858, and previously.