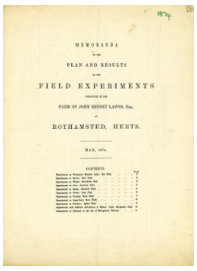
This work is licensed under a Creative Commons Attribution 4.0 International License.

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 readible, or you suspect there are some problems, please let us know and we will correct that.

Memoranda of the Field Experiments at Rothamsted May 1874



Full Table of Content

Experiments on Wheat; Broadbalk Field

Rothamsted Research

Rothamsted Research (1875) *Experiments on Wheat; Broadbalk Field ;* Memoranda Of The Field Experiments At Rothamsted May 1874, pp 4 - 4 **- DOI: https://doi.org/10.23637/ERADOC-1-238**

https://doi.org/10.23637/ERADOC-1-238

This work is licensed under a Creative Commons Attribution 4.0 International License.

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 23 years (1852 and since). Unless otherwise stated, the Manures are sown in the Autumn before the seed.

(Area under experiment, about 13 acres.)

		Produce per Acre.						
		Average per Annum, 20 Years, 1852–1871.			Thirtieth Season, 1873.			
Plots.	Manures, per acre, per annum.	Dressed Corn. Quantity.	Dressed Corn. Weight per Bushel.	Total Straw.	Dressed Corn. Quantity.	Dressed Corn. Weight per Bushel.	Total Straw.	Plots.
		Bushels.	lbs.	cwts.	Bushels.	lbs.	cwts.	
0	Superphosphate of Lime (three times as much as on No. 5 and succeeding Plots)	17¾	58⅜	15¼	15⅝	57⅝	10⅝	0
1	Sulphates of Potass, Soda, and Magnesia (twice as much as on No. 5 and succeeding Plots)	15⅛	58⅛	13⅞	10½	56⅜	8⅝	1
2	Farmyard Manure (14 tons every year)	35⅞	60	33⅞	26¾	58⅛	22	2
3	Unmanured continuously	14⅛	57½	13	11¾	57	8	3
4	Unmanured for Crop of 1852, and since; previously Superphosphate (made with Muriatic Acid), and Sulphate Ammonia	15¾	58⅜	13¾	12⅛	57⅛	8⅞	4
5 (*a* and *b*)	200 lbs. [1] Sulphate Potass, 100 lbs. [2] Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwts. Superphosphate of Lime [3]	17	58⅞	15¼	12¾	56⅞	9⅜	5 (*a* and *b*)
6 (*a* and *b*)	200 lbs. [1] Sulphate Potass, 100 lbs. [2] Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwts. Superphos., and 200 lbs. Ammonia-salts [4]	26⅜	59⅜	24½	15⅞	57	13⅝	6 (*a* and *b*)
7 (*a* and *b*)	200 lbs. [1] Sulphate Potass, 100 lbs. [2] Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwts. Superphos., and 400 lbs. Ammonia-salts	35¼	59¼	35⅜	22	57⅛	18	7 (*a* and *b*)
8 (*a* and *b*)	200 lbs. [1] Sulphate Potass, 100 lbs. [2] Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwts. Superphos., and 600 lbs. Ammonia-salts	38¼	59	41⅜	27½	56⅞	23¾	8 (*a* and *b*)
9 (*a*)	200 lbs. [1] Sulphate Potass, 100 lbs. [2] Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwts. Superphos., and 550 lbs. Nitrate Soda [5]	36¾	58⅜	41⅛	35⅞	57⅛	35⅛	9 (*a*
9 (*b*)	550 lbs. Nitrate of Soda [5]. (The Nitrate for both 9*a* and 9*b* always sown in the Spring.)	26	56⅜	28¼	21⅞	54⅞	21	9 (*b*
10 (*a*)	400 lbs. Ammonia-salts alone, for 1845, and each year since; Mineral Manure in 1844	22⅛	57⅛	21⅝	19⅝	56⅛	14⅝	10 (*a*
10 (*b*)	400 lbs. Ammonia-salts alone, for 1845, and each year since (excepting 1846 and 1850); Mineral Manure in 1844, '48, and '50	25⅞	58	24¾	20⅜	56½	14⅜	10 (*b*
11 (*a* and *b*)	400 lbs. Ammonia-salts, 3½ cwts. Superphosphate	28	57⅜	26⅜	19¼	55⅝	14⅛	11 (*a* and *b*)
12 (*a* and *b*)	400 lbs. Ammonia-salts, 3½ cwts. Superphosphate, and 366½ lbs. [6] Sulphate of Soda	33⅞	59⅛	32⅜	22⅞	56¾	17¾	12 (*a* and *b*)
13 (*a* and *b*)	400 lbs. Ammonia-salts, 3½ cwts. Superphosphate, and 200 lbs. [6] Sulphate of Potass	33⅞	59⅜	33⅞	23½	57⅜	18½	13 (*a* and *b*)
14 (*a* and *b*)	400 lbs. Ammonia-salts, 3½ cwts. Superphosphate, and 280 lbs. [6] Sulphate of Magnesia	33⅞	59¼	32⅞	24⅛	56¾	19⅛	14 (*a* and *b*)
15 (*a*)	200 lbs. [1] Sulph. Pot., 100 lbs. [2] Sulph. Sod., 100 lbs. Sulph. Mag., 3½ cwts. Superphos. [7]; 400 lbs. Amm.-salts, sown in Spring [8]	32⅞	59⅜	32½	32⅞	57⅜	26⅜	15 (*a*
15 (*b*)	200 lbs. [1] Sulph. Pot., 100 lbs. [2] Sulph. Sod., 100 lbs. Sulph. Mag., 3½ cwts. Superphos. [7]; 400 lbs. Amm.-salts, sown in Spring [9]	34	59¾	33⅞	32⅜	57⅞	28¼	15 (*b*
16 (*a* and *b*)	1852–64, 13 years, 200 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag., 3½ cwts. Superphos., and 800 lbs. Ammonia-salts; average produce 39½ bush. Corn, 46⅜ cwts. Straw. 1865 and since, unmanured; average produce (9 years, 1865–73) 17⅞ bushels Corn, 15⅜ cwts. Straw	32⅜	59	36⅛	12⅜	57⅛	10¼	16 (*a* and *b*)
(10) 17 (*a* and *b*)	400 lbs. Ammonia-salts	31⅝ [12]	59½ [12]	31¼ [12]	11¾ [14]	57½ [14]	9⅞ [14]	17 (*a* and *b*)
(10) 18 (*a* and *b*)	200 lbs. [1] Sulphate Potass, 100 lbs. [2] Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3½ cwts. Superphosphate	17⅝ [13]	58⅞ [13]	16⅛ [13]	20⅜ [15]	57½ [15]	17 [15]	18 (*a* and *b*)
19	3½ cwts. Superphosphate of Lime [11], 300 lbs. Sulphate of Ammonia, and 500 lbs. Rape-cake	30¾	58⅝	29⅛	20	56¾	16⅝	19
20	Unmanured continuously	15½ [16]	58 [16]	14½ [16]	12½	56⅞	9¾	20
21	200 lbs. [1] Sulph. Potass, 100 lbs. [2] Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwts. Superphos., and 100 lbs. Muriate Ammonia	21⅜	58¾	19½	14⅛	56⅞	11¼	21
22	200 lbs. [1] Sulph. Potass, 100 lbs. [2] Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwts. Superphos., and 100 lbs. Sulphate Ammonia	21	58⅝	19	18⅛	56⅞	14⅞	22

1 acre	= (about)	0·40 Hectare	or 1·59 Prussian Morgen.
1 bushel	= (about)	0·36 Hectolitre	or 0·66 Prussian Scheffel.
1 lb. (pound avoir.)	= (about)	0·45 Kilogramme	or 0·91 Zollverein Pfund.
1 cwt. (hundredweight)	= (about)	51·0 Kilogrammes	or 1·02 Centner.
1 bushel per acre	= (about)	0·9 Hectolitre per Hectare	or 0·42 Pr. Scheffel per Pr. Morgen.
1 lb. per acre	= (about)	1·12 Kilogramme per Hectare	or 0·57 Zollv. Pfd. per Pr. Morgen.
1 cwt. per acre	= (about)	125·5 Kilogrammes per Hectare	or 0·64 Centner per Pr. Morgen.

(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) The "Ammonia-salts," in all cases, equal parts Sulphate and Muriate of Ammonia of Commerce.
(5) 9*a* 475 lbs. Nitrate Soda in 1852, 275 lbs. in 1853 and 1854, 550 lbs. each year since; 9*b* 475 lbs. in 1852, 550 lbs. each year since; 550 lbs. is reckoned to contain the same amount of Nitrogen as 400 lbs. "Ammonia-salts."
(6) For 1858, and previously—1½ time as much.
(7) For 1872 and previously, made with Muriatic instead of Sulphuric Acid.
(8) For 1872 and previously, 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.
(10) The Manures of Plots 17 and 18 are, year by year, transposed.
(11) Made with Muriatic instead of Sulphuric Acid.
(12) Average of 20 years' Ammonia-salts, alternated with Mineral Manures.
(13) Average of 20 years' Mineral Manures, alternated with Ammonia-salts.
(14) Plots 17 had the Mineral Manures for the Crop of 1873.
(15) Plots 18 had the Ammonia-salts for the Crop of 1873.
(16) Average of 19 years only; as, in 1868, owing to a mistake in carting, the produce could not be ascertained.

The Plots marked "(*a* and *b*)" are divided into duplicate portions, "*a*" and "*b*," respectively, which are manured alike; excepting that, for the crops of 1864-5-6 and 7, the "*a*" portions of plots 5, 6, 7, 8, 9, 16, and 17 (or 18), received a mixture of soluble Silicates in addition to the other Manures, but, hitherto, without any material effect; and 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).