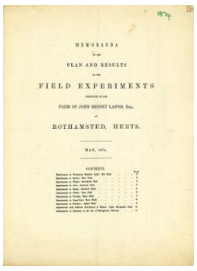
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Memoranda of the Field Experiments at Rothamsted May 1874



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Rothamsted Research

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AGDELL FIELD.

Experiments on an actual Course of Rotation—Turnips, Barley, Leguminous Crop (or Fallow), and Wheat.

These Experiments were commenced in 1848; so that the present crop (1874) is the 27th experimental one, or the third crop of the Seventh Course.
One-third of the land has been continuously unmanured; one-third manured with Superphosphate of Lime alone once every four years, that is for the turnip-crop commencing each course; and one-third manured (also for the turnip-crop only) with a complex manure, as described in the foot-note, No. 2.
In the Second, Third, Fourth, Fifth, and Sixth Courses, instead of clover, half of each plot was sown with beans, and the other half left fallow; for the third crop of the Seventh Course clover was again sown (spring 1873), on half of each plot, the other half being left fallow.
From half of each of the three plots the whole turnip-crop (roots and leaves) was removed; and on the other half the roots were eaten on the land by sheep, and the uneaten leaves spread and ploughed in. In the case of all the other crops, the total produce was removed from the land.
The abstract of the results given below relates to the portions of each plot from which the turnip-crops were entirely removed; and on which, in the second, third, fourth, fifth, and sixth courses, beans (not fallow) replaced the clover.

(Area under experiment, about 2½ acres.)

1 lb. (pound avoir.) per acre .. = (about) 1·12 Kilogramme per Hectare, or 0·57 Zollverein Pfund. per Prussian Morgen.
1 cwt. (hundredweight) per acre = (about) 125·5 Kilogrammes per Hectare, or 0·64 Centner per Pr. Morgen.

Years.	Description of Crop.	Produce per Acre. Plot 1. Unmanured continuously. Corn[3] (or Roots).	Straw (or Leaf).	Total Produce.[4]	Plot 2. Superphosphate of Lime,[1] alone, for the Turnip Crops only. Corn[3] (or Roots).	Straw (or Leaf).	Total Produce.[4]	Plot 3. Complex Manure,[2] for the Turnip Crops only. Corn[3] (or Roots).	Straw (or Leaf).	Total Produce.[4]
1st Course, 1848–51.										
1848	Norfolk White Turnips	65¼ cwts.	45¾ cwts.	111¼ cwts.	225¾ cwts.	106½ cwts.	332 cwts.	218 cwts.	151¼ cwts.	369¼ cwts.
1849	Barley	44⅞ bush.	2983 lbs.	5656 lbs.	29⅝ bush.	2111 lbs.	3841 lbs.	28⅞ bush.	2088 lbs.	3794 lbs.
1850	Clover (calcd. as hay)	..	..	54 cwts.	..	..	57¾ cwts.	..	..	63 cwts.
1851	Wheat	28½ bush.	3431 lbs.	5389 lbs.	28 bush.	3371 lbs.	5253 lbs.	28⅞ bush.	3552 lbs.	5500 lbs.
2nd Course, 1852–55.										
1852	Swedish Turnips	26 cwts.	4¾ cwts.	30½ cwts.	223¼ cwts.	20¼ cwts.	243½ cwts.	396½ cwts.	36¼ cwts.	433 cwts.
1853	Barley	34⅜ bush.	2430 lbs.	4465 lbs.	28⅝ bush.	1873 lbs.	3560 lbs.	38½ bush.	2604 lbs.	4873 lbs.
1854	Beans	5⅛ bush.	1055 lbs.	1445 lbs.	5⅝ bush.	1103 lbs.	1534 lbs.	9⅝ bush.	1355 lbs.	2065 lbs.
1855	Wheat	35¼ bush.	3619 lbs.	5839 lbs.	35¼ bush.	3325 lbs.	5789 lbs.	37⅜ bush.	3942 lbs.	6371 lbs.
3rd Course, 1856–59.										
1856	Swedish Turnips	32 cwts.	2½ cwts.	34½ cwts.	136 cwts.	7⅞ cwts.	143⅞ cwts.	333½ cwts.	12¼ cwts.	346¼ cwts.
1857	Barley	48⅛ bush.	2600 lbs.	5337 lbs.	29¼ bush.	1475 lbs.	3076 lbs.	48 bush.	2435 lbs.	5163 lbs.
1858	Beans	6¼ bush.	1100 lbs.	1515 lbs.	6⅜ bush.	1155 lbs.	1605 lbs.	12⅜ bush.	1520 lbs.	2357 lbs.
1859	Wheat	35¼ bush.	4030 lbs.	6262 lbs.	34⅝ bush.	3930 lbs.	6120 lbs.	39⅝ bush.	4610 lbs.	7154 lbs.
4th Course, 1860–63.										
1860	Swedish Turnips	1 cwt.	(6¼ lbs.)	1 cwt.	29¼ cwts.	1¼ cwt.	30¾ cwts.	87¼ cwts.	3¼ cwts.	90½ cwts.
1861	Barley	38⅛ bush.	2522 lbs.	4718 lbs.	30⅜ bush.	2000 lbs.	3775 lbs.	60⅛ bush.	3940 lbs.	7391 lbs.
1862	Beans	29 bush.	1840 lbs.	3661 lbs.	29⅝ bush.	2150 lbs.	4040 lbs.	43⅛ bush.	3280 lbs.	5990 lbs.
1863	Wheat	44⅝ bush.	3457 lbs.	6330 lbs.	34⅛ bush.	3390 lbs.	5519 lbs.	46⅛ bush.	4597 lbs.	7626 lbs.
5th Course, 1864–67.										
1864	Swedish Turnips	8¾ cwts.	0¾ cwt.	9½ cwts.	68 cwts.	4¾ cwts.	72¾ cwts.	176¼ cwts.	8¾ cwts.	185 cwts.
1865	Barley	39 bush.	2154 lbs.	4182 lbs.	33½ bush.	1615 lbs.	3394 lbs.	47½ bush.	2595 lbs.	5148 lbs.
1866	Beans	10⅛ bush.	1013 lbs.	1689 lbs.	7⅜ bush.	978 lbs.	1463 lbs.	20⅛ bush.	1990 lbs.	3343 lbs.
1867	Wheat	21 bush.	2143 lbs.	3473 lbs.	19¾ bush.	1966 lbs.	3222 lbs.	23⅜ bush.	3003 lbs.	4567 lbs.
6th Course, 1868–71.										
1868	Swedish Turnips	Failed, and ploughed up.			Failed, and ploughed up.			Failed, and ploughed up.		
1869	Barley	24⅛ bush.	1948 lbs.	3358 lbs.	28¾ bush.	2025 lbs.	3686 lbs.	42⅞ bush.	3309 lbs.	5800 lbs.
1870	Beans	13⅜ bush.	738 lbs.	1591 lbs.	15⅜ bush.	768 lbs.	1778 lbs.	24⅜ bush.	1056 lbs.	2664 lbs.
1871	Wheat	20⅛ bush.	2793 lbs.	4092 lbs.	23⅝ bush.	3043 lbs.	4521 lbs.	23 bush.	3440 lbs.	4883 lbs.
7th Course, 1872–75.										
1872	Swedish Turnips	34½ cwts.	8¾ cwts.	42⅞ cwts.	170⅛ cwts.	17⅜ cwts.	188 cwts.	339⅞ cwts.	35⅜ cwts.	375⅝ cwts.
1873	Barley	23½ bush.	1343 lbs.	2717 lbs.	20¾ bush.	1565 lbs.	2875 lbs.	31¼ bush.	1723 lbs.	3573 lbs.
1874	Clover			cwts.			cwts.			cwts.
1875	Wheat									
Summary—Average of the First 6 Courses, 1848–1871.										
1848, '52, '56, '60, '64	Swedish Turnips	26¾ cwts.	10½ cwts.	37¼ cwts.	136¼ cwts.	28 cwts.	164½ cwts.	242½ cwts.	42¾ cwts.	285 cwts.
1849, '53, '57, '61, '65, '69	Barley	38⅜ bush.	2440 lbs.	4619 lbs.	30 bush.	1850 lbs.	3555 lbs.	44⅜ bush.	2829 lbs.	5362 lbs.
1850, '54, '58, '62, '66, '70	Clover, 1850 (calcd. as hay)	..	..	54 cwts.	..	..	57¾ cwts.	..	..	63 cwts.
	Beans	12¾ bush.	1149 lbs.	1930 lbs.	13 bush.	1231 lbs.	2084 lbs.	22¾ bush.	1840 lbs.	3284 lbs.
1851, '55, '59, '63, '67, '71	Wheat	30⅞ bush.	3248 lbs.	5238 lbs.	29⅜ bush.	3205 lbs.	5087 lbs.	33⅜ bush.	3874 lbs.	6017 lbs.

(1) First Course—100 lbs. Bone-ash, and 100 lbs. Sulphuric Acid (sp. gr. 1·7); Second Course—160 lbs. Bone-ash, 120 lbs. Sulphuric Acid; Third, Fourth, Fifth, Sixth, and Seventh Courses—200 lbs. Bone-ash, and 150 lbs. Sulphuric Acid, *per acre*.

(2) First Course—100 lbs. Pearl-ash, 100 lbs. Bone-ash, 100 lbs. Sulphuric Acid, 100 lbs. Sulphate of Ammonia, 100 lbs. Muriate of Ammonia, and 1000 lbs. Rape-Cake; Second Course—300 lbs. Sulphate of Potass, 100 lbs. Sulphate of Soda, 100 lbs. Sulphate of Magnesia, 160 lbs. Bone-ash, 120 lbs. Sulphuric Acid, 100 lbs. Sulpbate of Ammonia, 100 lbs. Muriate of Ammonia, and 2000 lbs. Rape-cake; Third, Fourth, Fifth, Sixth, and Seventh Courses—300 lbs. Sulphate of Potass, 200 lbs. Sulphate of Soda, 100 lbs. Sulphate of Magnesia, 200 lbs. Bone-ash, 150 lbs. Sulphuric Acid, 100 lbs. Sulphate of Ammonia, 100 lbs. Muriate of Ammonia, and 2000 lbs. Rape-cake, *per acre*.

(3) The quantities given in *Bushels* represent the *Dressed* Corn only.

(4) The "Total Produce" of the Corn-crops includes Dressed Corn, Offal Corn, and Total Straw.

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