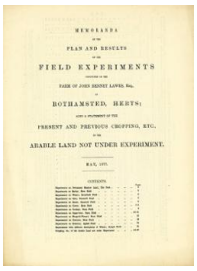
Memoranda of the Field Experiments at Rothamsted: May 1877



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Rothamsted Research

Rothamsted Research (1878) *Experiments on Barley; Hoos Field ;* Memoranda Of The Field Experiments At Rothamsted: May 1877, pp 3 - 3 **- DOI: https://doi.org/10.23637/ERADOC-1-241**

HOOS FIELD.

Experiments on the Growth of BARLEY year after year on the same Land, without Manure, and with different kinds of Manure.

Previous Cropping—1847, Swedish Turnips, with Dung and Superphosphate of Lime, the Roots carted off; 1848, Barley; 1849, Clover; 1850, Wheat; 1851, Barley manured with Ammonia-salts. First Experimental Barley Crop in 1852. Barley every year since; and, unless stated to the contrary in the Table, or in the foot-notes, the same Manure has been applied year after year to the same Plot.

(Area under experiment, about 4¼ acres.)

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.

Plots.	Manures, per acre, per annum.	Produce per Acre. Average per Annum. Dressed Corn. Quantity. 12 Years, 1852–63.	Quantity. 12 Years, 1864–75.	Quantity. 24 Years, 1852–75.	Weight per Bushel. 12 Years, 1852–63.	Weight per Bushel. 12 Years, 1864–75.	Weight per Bushel. 24 Years, 1852–75.	Total Straw. 12 Years, 1852–63.	Total Straw. 12 Years, 1864–75.	Total Straw. 24 Years, 1852–75.	Twenty-Fifth Season, 1876. Dressed Corn. Quantity.	Twenty-Fifth Season, 1876. Dressed Corn. Weight per Bushel.	Twenty-Fifth Season, 1876. Total Straw.	Plots.
		Bushels.	Bushels.	Bushels.	lbs.	lbs.	lbs.	Cwts.	Cwts.	Cwts.	Bushels.	lbs.	Cwts.	
1 O.	Unmanured continuously	21⅞	15⅞	18⅞	51½	53¼	52½	12⅞	9⅛	11	12¾	51¾	7½	1 O.
2 O.	3½ cwts. Superphosphate of Lime (1)	27⅞	20¾	24¼	52¼	54⅜	53¼	14¾	10⅛	12⅜	16⅛	52¼	8½	2 O.
3 O.	200 lbs. (2) Sulphate Potass, 100 lbs. (3) Sulphate Soda, 100 lbs. Sulphate Magnesia	24⅝	17¾	21⅛	52	54¼	53⅛	13½	9¼	11⅜	12⅜	53	6½	3 O.
4 O.	200 lbs. (2) Sulphate Potass, 100 lbs. (3) Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwts. Superphosphate	30⅜	21½	25⅞	52½	54½	53½	15⅞	10⅞	13⅜	15⅜	52½	9⅛	4 O.
1 A.	200 lbs. Ammonia-salts (4)	34¼	29	31⅝	51¼	53¼	52¼	19⅞	15¾	17⅞	21	51½	12½	1 A.
2 A.	200 lbs. Ammonia-salts, and 3½ cwts. Superphosphate	47⅜	45⅜	46⅜	52¼	54⅝	53½	28¾	24½	26⅝	33¼	52½	19⅜	2 A.
3 A.	200 lbs. Ammonia-salts, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia	36¼	32⅝	34⅜	51½	54¼	52⅞	22⅜	17¾	20	23½	53¼	13½	3 A.
4 A.	200 lbs. Ammonia-salts, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Mag., 3½ cwts. Superphos.	47⅛	44	45½	52⅝	55⅝	54¼	29⅜	26½	27⅞	35¾	55½	20¾	4 A.
(5) 1 AA.	275 lbs. Nitrate Soda	39⅞	32¼	36	51	53⅜	52¼	23⅞	18⅜	21⅛	19⅜	50¼	14	1 AA.
(5) 2 AA.	275 lbs. Nitrate Soda, and 3½ cwts. Superphosphate	50⅛	47⅛	48⅝	51¾	55	53⅜	31⅞	27⅛	29½	31⅝	52½	21	2 AA.
(5) 3 AA.	275 lbs. Nitrate Soda, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia	39¾	32⅞	36⅜	51¼	53⅞	52½	25⅞	20	23	22¾	53	20	3 AA.
(5) 4 AA.	275 lbs. Nitrate Soda, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Mag., 3½ cwts. Superphos.	50⅝	46⅜	48½	51¾	55½	53⅝	34⅝	28	31¼	36⅜	55⅞	21½	4 AA.
(6) 1 AAS.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda (6)	..	37⅜	..	..	54¼	..	..	21⅜	..	25¼	52¼	16½	1 AAS.
(6) 2 AAS.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda, and 3½ cwts Superphosphate (1)	..	47½	..	..	55⅜	..	..	27⅝	..	35⅝	54¼	21⅝	2 AAS.
(6) 3 AAS.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Mag.	..	42	..	..	54¾	..	..	24⅞	..	28⅞	53¾	18¼	3 AAS.
(6) 4 AAS.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Mag. and 3½ cwts. Superphosphate	..	48⅝	..	..	55¼	..	..	30⅝	..	41⅛	56½	25½	4 AAS.
(7) 1 C.	1000 lbs. Rape-cake	47	42	44½	52¼	55⅜	53¾	29	22¾	25⅞	36⅜	54¼	21¾	1 C.
(7) 2 C.	1000 lbs. Rape-cake, and 3½ cwts. Superphosphate	48¼	44¼	46¼	52⅜	55½	54	30½	24¼	27⅜	34½	54½	20⅝	2 C.
(7) 3 C.	1000 lbs. Rape-cake, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia	44⅛	41¼	42⅝	52¼	55½	53⅞	28½	23½	26	31	54½	17⅞	3 C.
(7) 4 C.	1000 lbs. Rape-cake, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Mag., 3½ cwts. Superphos.	47⅞	45½	46¾	52⅛	55½	53¾	31	25¾	28⅜	35	56⅛	19⅞	4 C.
(8) 1 N.	275 lbs. Nitrate of Soda	38¾	35⅜	37 (11)	51⅝	53⅝	52¾ (11)	24⅛	20⅞	22½ (11)	25½	53⅛	16⅛	1 N.
(8) 2 N.	275 lbs. (9) Nitrate of Soda	43⅛	39⅛	41 (11)	51¼	54⅜	52⅞ (11)	27¾	23	25⅜ (11)	29⅛	53¾	18¼	2 N.
5 O.	200 lbs. (2) Sulphate of Potass, 3½ cwts. Superphosphate (10)	24⅜	18⅝	21⅜ (11)	52⅛	54⅞	53½ (11)	13⅜	9⅝	11½ (11)	11	53¾	7⅜	5 O.
5 A.	200 lbs. (2) Sulphate of Potass, 3½ cwts. Superphosphate, and 200 lbs. Ammonia-salts	45⅛	42¼	43⅝ (11)	52¼	55½	54 (11)	29	25¾	27⅜ (11)	34¾	55½	20⅞	5 A.
M.	100 lbs. Sulphate of Soda, 100 lbs. Sulphate of Magnesia, and 3½ cwts. Superphosphate	22⅝	18½	19⅞ (12)	52⅜	54⅛	53½ (12)	13¼	10⅝	11½ (12)	15⅝	53⅛	8⅞	M.
6 1	Unmanured continuously	24¾	16⅝	20⅝	51⅝	53½	52½	13¾	9½	11⅝	12¼	51½	7⅜	1 6
6 2	Ashes (burnt soil and turf)	24	18	22	51⅞	53¾	52¾	13	9¾	11⅜	10⅛	52⅜	6½	2 6
7 1	Farmyard Manure 14 tons, 20 years, 1852–1871; unmanured since	48¼	41⅛	47⅛ (13)	54¼	54¾	54⅜ (13)	28¼	22⅞	27⅜ (13)	31⅛	56⅜	19⅛	1 7
7 2	Farmyard Manure 14 tons, every year; av. produce, 20 years, 1852–71, 48¼ bush.; 4 years, 1872–5, 50¾ bush.	46⅝	50¾	48¾	53¼	55½	54⅛	27⅞	29⅝	28¾	45⅛	55½	30⅜	2 7

(1) The "Superphosphate of Lime" is, in all cases, made from 200 lbs. Bone-ash, 150 lbs. Sulphuric acid sp. gr. 1·7 (and water).
(2) 300 lbs. per annum for the first six years, 1852–7.
(3) 200 lbs. per annum for the first six years, 1852–7.
(4) The "Ammonia-salts"—in all cases equal parts Sulphate and Muriate of Ammonia of Commerce.
(5) First 6 years, 1852–7, instead of Nitrate of Soda, 400 lbs. Ammonia-salts per annum; next 10 years, 1858–67, 200 lbs. Ammonia-salts per annum; 1868, and since, 275 lbs. Nitrate of Soda per annum. 275 lbs. Nitrate of Soda is reckoned to contain the same amount of Nitrogen as 200 lbs. "Ammonia-salts."
(6) The application of Silicates did not commence until 1864; in 1864-5-6 and 7, 200 lbs. Silicate of Soda and 200 lbs. Silicate of Lime were applied per acre, but in 1868, and since, 400 lbs. Silicate of Soda, and no Silicate of Lime. These plots ("AAS") comprise, respectively, one half of the original "AA" plots, and, excepting the addition of the Silicates, have been, and are, in other respects, manured in the same way as the "AA" plots.
(7) 2000 lbs. Rape-cake per annum for the first six years, and 1000 lbs. only, each year since.
(8) 300 lbs. Sulphate of Potass, and 3½ cwts. Superphosphate of Lime, without Nitrate of Soda, the first year (1852); Nitrate alone each year since.
(9) 550 lbs. Nitrate of Soda for 1853-4-5-6, and 7; and 275 lbs. only, each year since.
(10) Ammonia-salts also the first year, but not since.
(11) Averages of 11 years, 12 years, and 23 years.
(12) Averages of 6 years, 12 years, and 18 years.
(13) Averages of 20 years (with dung), 4 years (unmanured), and 24 years.

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