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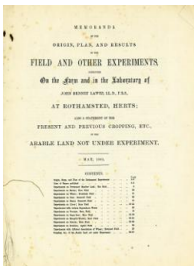
Memoranda of the Field Experiments at Rothamsted: May 1881



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Experiments on Barley; Hoos Field

Rothamsted Research

Rothamsted Research (1882) *Experiments on Barley; Hoos Field ;* Memoranda Of The Field Experiments At Rothamsted: May 1881, pp 10 - 10 **- DOI: https://doi.org/10.23637/ERADOC-1-245**

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. The crop of the present year, 1881, is, therefore, the 30th Barley crop in succession. 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. 14 Years, 1852–65.	14 Years, 1866–79.	28 Years, 1852–79.	Weight per Bushel. 14 Years, 1852–65.	14 Years, 1866–79.	28 Years, 1852–79.	Total Straw. 14 Years, 1852–65.	14 Years, 1866–79.	28 Years, 1852–79.	Twenty-ninth Season, 1880. Dressed Corn. Quantity.	Weight per Bushel.	Total Straw.	Plots.
		Bushels.	Bushels.	Bushels.	lbs.	lbs.	lbs.	Cwts.	Cwts.	Cwts.	Bushels.	lbs.	Cwts.	
1 O.	Unmanured continuously	21⅜	14	17⅞	52	52¼	52⅛	12⅜	8½	10⅜	18¾	51½	9⅞	1 O.
2 O.	3½ cwts. Superphosphate of Lime (1)	27⅜	18¼	23	52⅜	53½	53⅛	14⅜	9¼	11⅞	28⅜	54¼	13½	2 O.
3 O.	200 lbs. (2) Sulphate Potass, 100 lbs. (3) Sulphate Soda, 100 lbs. Sulphate Magnesia	24⅜	15⅛	19⅜	52⅜	52⅞	52⅜	13¼	8⅛	10⅜	23¾	51⅞	10⅞	3 O.
4 O.	200 lbs. (2) Sulphate Potass, 100 lbs. (3) Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwts. Superphosphate	30⅛	18⅜	24¼	52⅝	53⅜	53⅛	15½	9⅜	12⅜	30⅛	53⅜	13½	4 O.
1 A.	200 lbs. Ammonia-salts (4)	34¼	26⅛	30¼	51⅜	52⅜	52⅛	19½	14⅜	17⅛	33⅞	51⅞	15⅛	1 A.
2 A.	200 lbs. Ammonia-salts, and 3½ cwts. Superphosphate	48½	41	44⅜	52⅜	53⅞	53½	28½	22⅝	25½	55⅜	53½	26¼	2 A.
3 A.	200 lbs. Ammonia-salts, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia	36½	29⅝	33	52¼	53⅛	52¾	21⅜	16⅜	19¼	38⅛	52½	18⅝	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.	47⅜	40¾	44¼	53⅛	55	54⅛	29¼	24¾	27	54¾	54¼	29½	4 A.
(5) 1 AA.	275 lbs. Nitrate Soda	39½	28⅛	34	51½	52¼	51⅞	23½	16¾	20	38¼	51⅜	18⅝	1 AA.
(5) 2 AA.	275 lbs. Nitrate Soda, and 3½ cwts. Superphosphate	50⅜	42¾	46½	52¼	54⅜	53⅜	31⅜	25¼	28⅜	57¼	53¾	29⅝	2 AA.
(5) 3 AA.	275 lbs. Nitrate Soda, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia	39¾	29½	34⅝	51⅜	53¼	52⅜	25⅜	18⅜	21⅞	41¼	50¼	21⅜	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.	50⅜	42⅜	46⅝	52¼	55	53⅜	34½	25⅜	30	59⅜	53½	32⅝	4 AA.
(6) 1 AAS.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda (6)	39½	34⅛	35	55⅛	53¼	53½	24¼	19⅝	20⅛	44½	52⅝	21⅛	1 AAS.
(6) 2 AAS.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda, and 3½ cwts Superphosphate (1)	51⅛	43⅝	44⅜	54⅜	54⅞	54⅞	28⅜	26¾	27	61½	53½	32⅝	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.	45½	38½	39¼ (12)	56	54	54¼ (12)	25¾	22⅝	23 (12)	48½	52⅝	23⅜	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	54⅞	45¾	46¾	55	55	55	33⅛	29	29⅝	59⅛	53¼	33⅞	4 AAS.
(7) 1 C.	1000 lbs. Rape-cake	46⅞	39	43	52⅜	54⅜	53⅜	28½	22	25⅛	50¼	54½	24	1 C.
(7) 2 C.	1000 lbs. Rape-cake, and 3½ cwts. Superphosphate	48½	40¾	44½	52⅜	55	53⅞	30	22⅞	26⅜	56	54⅛	28⅞	2 C.
(7) 3 C.	1000 lbs. Rape-cake, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia	44⅜	37⅛	41¼	52⅜	54⅜	53⅜	28¼	22	25⅛	51⅜	54⅜	27⅝	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.	48¼	42¼	45¼	52½	5	53¾	30¾	24¼	27½	55	54½	32⅜	4 C.
(8) 1 N.	275 lbs. Nitrate of Soda	38¾	31⅝	35⅛ (13)	52⅞	52⅜	52⅛ (13)	23⅝	19	21⅛ (13)	39	53⅜	16⅜	1 N.
(8) 2 N.	275 lbs. (9) Nitrate of Soda	43	35¼	39 (13)	51⅞	53⅝	52⅜ (13)	27¼	21	24⅛ (13)	46	53⅜	21⅜	2 N.
5 O.	200 lbs. (2) Sulphate of Potass, 3½ cwts. Superphosphate (10)	24⅛	15⅞	19⅞ (13)	52⅜	53¼	53⅛ (13)	13⅜	8⅜	10⅜ (13)	21⅞	52⅜	7⅞	5 O.
5 A.	200 lbs. (2) Sulphate of Potass, 3½ cwts. Superphosphate, and 200 lbs. (11) Ammonia-salts	45⅜	38⅜	42 (13)	52⅞	54⅞	53⅞ (13)	29	23⅞	26⅛ (13)	54⅜	51⅜	36⅛	5 A.
M.	100 lbs. Sulphate of Soda, 100 lbs. Sulphate of Magnesia, and 3½ cwts. Superphosphate	22¼	17¼	19¼ (14)	53⅛	53½	53⅜ (14)	12⅞	10	11⅜ (14)	30⅜	53¾	14⅜	M.
6 (1)	Unmanured continuously	24⅓	14¼	19½	52⅛	52⅜	52¼	13⅜	8⅜	10⅞	21½	50⅞	10¼	1 6
6 (2)	Ashes (burnt soil and turf)	23⅜	15¼	19⅜	52¼	52¾	52½	12¾	8½	10⅜	25⅜	52¼	9⅜	2 6
7 (1)	Farmyard Manure 14 tons, 20 yrs., 1852–71, av. prod. 48¾ bush.; unmanured since, av. prod., 9 yrs., 1872–80, 34⅜ bush.	48¼	33¾	44⅛ (15)	54⅜	53¾	54¼ (15)	28¼	19⅛	25⅝ (16)	41¾	54½	19	1 7
7 (2)	Farmyard Manure 14 tons, every year; av. produce, 20 years, 1852–71, 48¼ bush.; 9 years, 1872–80, 49¾ bush.	48¼	48⅛	48¼	53⅜	55	54¼	28⅜	20⅜	28⅝	65¼	52¾	35⅜	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) By mistake 400 lbs. in 1880.

(12) Averages of 2 years, 14 years, and 16 years.

(13) Averages of 13 years, 14 years, and 27 years.

(14) Averages of 8 years, 13 years, and 21 years, (not 8, 14, and 22 years, as the produce of 1879 was not weighed, owing to the foulness of the plot, from the wet season).

(15) Averages of 20 years (with dung), 8 years (unmanured), and 28 years.

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