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ROTHAMSTED RESEARCH

Yields of the Field Experiments 1875

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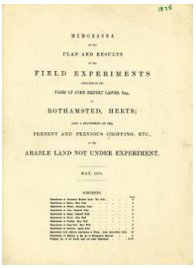

Experiments on Barley; Hoos Field

Rothamsted Research

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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.)

		Produce per Acre.						
		Average per Annum, over 20 Years, 1852–1871.			Twenty-third Season, 1874.			
		Dressed Corn.			Dressed Corn.			
Plots.	Manures, per acre, per annum.	Quantity.	Weight per Bushel.	Total Straw.	Quantity.	Weight per Bushel.	Total Straw.	Plots.
		Bushels.	lbs.	cwts.	Bushels.	lbs.	cwts.	
1 O.	Unmanured continuously	20	52¾	11¾	17⅜	54¾	8¾	1 O.
2 O.	3½ cwts. Superphosphate of Lime (1)	25½	53¼	13⅜	21½	55	9⅜	2 O.
3 O.	200 lbs. (2) Sulphate Potass, 100 lbs. (3) Sulphate Soda, 100 lbs. Sulphate Magnesia	22⅜	53	12¼	18	56½	7¾	3 O.
4 O.	200 lbs. (2) Sulphate Potass, 100 lbs. (3) Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwts. Superphosphate	27½	53⅜	14⅜	19¼	56⅜	8⅛	4 O.
1 A.	200 lbs. Ammonia-salts (4)	32⅔	52⅛	18⅓	23⅛	54⅝	12½	1 A.
2 A.	200 lbs. Ammonia-salts, and 3½ cwts. Superphosphate	47	53½	27⅜	42⅜	54¾	20⅜	2 A.
3 A.	200 lbs. Ammonia-salts, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia	35	52¾	20⅓	30⅜	55¾	15⅜	3 A.
4 A.	200 lbs. Ammonia-salts, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwts. Superphosphate	46¼	54	28½	45¼	57⅜	28⅞	4 A.
(5) 1 AA.	275 lbs. Nitrate Soda	37	52	22⅛	30¼	55	15	1 AA.
(5) 2 AA.	275 lbs. Nitrate Soda, and 3½ cwts. Superphosphate	49¼	53⅜	30½	53¾	54	27⅜	2 AA.
(5) 3 AA.	275 lbs. Nitrate Soda, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia	37⅜	52½	24⅜	32	55¾	18½	3 AA.
(5) 4 AA.	275 lbs. Nitrate Soda, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwts. Superphosphate	49¾	53⅜	32⅜	51⅜	57	27⅞	4 AA.
(6) 1 AAS.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda (6)	38¾	52½	23⅛	37½	55¾	20⅞	1 AAS.
(6) 2 AAS.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda, and 3½ cwts Superphosphate (1)	48⅜	53⅜	30⅜	51¾	56⅜	28¼	2 AAS.
(6) 3 AAS.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, and 100 lbs. Sulph. Magnesia	41¼	52⅜	25⅞	41⅝	55¼	25⅜	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. Magnesia, and 3½ cwts. Superphosphate	50⅜	53⅜	33⅜	54¼	56¾	33¾	4 AAS.
(7) 1 C.	1000 lbs. Rape-cake	45½	53¾	26⅞	47⅛	57¼	24⅛	1 C.
(7) 2 C.	1000 lbs. Rape-cake, and 3½ cwts. Superphosphate	46¾	53⅞	28⅜	49⅝	57⅞	24⅜	2 C.
(7) 3 C.	1000 lbs. Rape-cake, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia	43⅝	53¾	27⅛	45⅝	57¼	23¾	3 C.
(7) 4 C.	1000 lbs. Rape-cake, 200 lbs. (2) Sulph. Potass, 100 lbs. (3) Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwts. Superphosphate	47⅜	53⅜	29½	49¼	57	24¾	4 C.
(8) 1 N.	275 lbs. Nitrate of Soda	37⅜ (11)	52⅝ (11)	22⅞ (11)	35⅜	55½	19	1 N.
(8) 2 N.	275 lbs. (9) Nitrate of Soda	41⅜ (11)	52⅝ (11)	26⅛ (11)	42⅝	56¾	23¼	2 N.
5 O.	200 lbs. (2) Sulphate of Potass, 3½ cwts. Superphosphate (10)	22¾ (11)	53½ (11)	12⅜ (11)	17	56½	8⅜	5 O.
5 A.	200 lbs. (2) Sulphate of Potass, 3½ cwts. Superphosphate, and 200 lbs. Ammonia-salts	44⅛ (11)	53¾ (11)	28 (11)	42⅛	57¾	25⅜	5 A.
M.	100 lbs. Sulphate of Soda, 100 lbs. Sulphate of Magnesia, and 3½ cwts. Superphosphate	21½ (12)	53¼ (12)	12⅜ (12)	18¼	55	9¼	M.
6 1	Unmanured continuously	22	52½	12⅜	16½	54¾	8¾	1
6 2	Ashes (burnt soil and turf)	21⅞	52⅜	12⅛	20	56	9½	2 } 6
7 1	Farmyard Manure 14 tons, 20 years, 1852–1871; unmanured since	48¼	54⅜	28¼	46½	57⅝	26⅛	7
7 2	Farmyard Manure 14 tons, every year				64½	57½	37¼	

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) 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; and, for the sake of comparison with the latter, the *average produce* is given for the whole period of 20 years, 1852–1871.

(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) Average of 19 years only.

(12) Average of 14 years only.

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