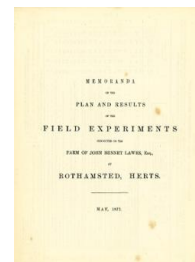


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ROTHAMSTED
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Memoranda of the Field Experiments at Rothamsted, May 1872



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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 foot-notes, the same Manure has been applied year after year to the same Plot.

(Area under experiment, about 4½ acres.)

PLOTS.	Manures, per acre, per annum.	PRODUCE PER ACRE.				
		Average per Annum, over 20 Years, 1852-1871.		Twentieth Season, 1871.		
		Dressed Corn.	Total Straw.	Dressed Corn.	Total Straw.	
1 O.	Unmanured continuously	Bushels.	cwts.	Bushels.	lbs.	1 O.
2 O.	34 cwts Superphosphate of Lime (1)	20	11½	16½	55	2 O.
3 O.	200 lbs. (2) Sulphate Potass, 100 lbs. (3) Sulphate Soda, 100 lbs. Sulphate Magnesia	25½	13½	23½	56	3 O.
4 O.	200 lbs. (4) Sulphate Potass, 100 lbs. (5) Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwts. Superphosphate	22½	12½	19½	55½	4 O.
1 A.	200 lbs. Ammonia-salts (6)	32½	18½	36½	55½	1 A.
2 A.	200 lbs. Ammonia-salts, and 3½ cwts. Superphosphate	47	27½	43½	55	2 A.
3 A.	200 lbs. Ammonia-salts, 200 lbs. (7) Sulph. Potass, 100 lbs. (8) Sulph. Soda, 100 lbs. Sulph. Magnesia	35	20½	38½	56½	3 A.
4 A.	200 lbs. Ammonia-salts, 200 lbs. (9) Sulph. Potass, 100 lbs. (10) Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwts. Superphosphate	46½	28½	40½	56½	4 A.
1 AA.	275 lbs. Nitrate Soda	37	22½	39½	54	1 AA.
2 AA.	275 lbs. Nitrate Soda, and 3½ cwts. Superphosphate	49½	30½	46½	56	2 AA.
3 AA.	275 lbs. Nitrate Soda, 200 lbs. (11) Sulph. Potass, 100 lbs. (12) Sulph. Soda, 100 lbs. Sulph. Magnesia	37½	24½	36½	53	3 AA.
4 AA.	275 lbs. Nitrate Soda, 200 lbs. (13) Sulph. Potass, 100 lbs. (14) Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwts. Superphosphate	48½	32½	46	56½	4 AA.
1 AAS.	275 lbs. Nitrate Soda, and 400 lbs. Silicate of Soda (15)	37	21½	45½	54½	1 AAS.
2 AAS.	275 lbs. Nitrate Soda, 3½ cwts. Superphosphate (16) and 400 lbs. Silicate of Soda	47½	29	49½	55½	2 AAS.
3 AAS.	275 lbs. Nitrate Soda, 200 lbs. (17) Sulph. Potass, 100 lbs. (18) Sulph. Soda, 100 lbs. Sulph. Magnesia, and 400 lbs. Silicate Soda	48½	25½	48½	53	3 AAS.
4 AAS.	275 lbs. Nitrate Soda, 200 lbs. (19) Sulph. Potass, 100 lbs. (20) Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwts. Superphosphate, and 400 lbs. Silicate Soda	50	31½	49	55½	4 AAS.
1 C.	1000 lbs. Rape-cake	45½	26½	44	56½	1 C.
2 C.	1000 lbs. Rape-cake, and 3½ cwts. Superphosphate	46½	28½	41½	56	2 C.
3 C.	1000 lbs. Rape-cake, 200 lbs. (21) Sulph. Potass, 100 lbs. (22) Sulph. Soda, 100 lbs. Sulph. Magnesia	45½	27½	45½	56½	3 C.
4 C.	1000 lbs. Rape-cake, 200 lbs. (23) Sulph. Potass, 100 lbs. (24) Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwts. Superphosphate	47½	29½	47½	56½	4 C.
1 N.	275 lbs. Nitrate of Soda	37½ (11)	22½ (11)	43½	54½	1 N.
2 N.	275 lbs. Nitrate of Soda	41½	26½ (11)	45½	54½	2 N.
5 O.	200 lbs. (25) Sulphate of Potass, 3½ cwts. Superphosphate (26)	22½ (11)	12½ (11)	20	55½	5 O.
5 A.	200 lbs. (27) Sulphate of Potass, 3½ cwts. Superphosphate, and 200 lbs. Ammonia-salts	44½ (11)	28 (11)	44½	55½	5 A.
M.	200 lbs. Sulphate of Soda, 100 lbs. Sulphate of Magnesia, and 3½ cwts. Superphosphate	21½ (12)	12½ (12)	22½	55	M.
6(1)	Unmanured continuously	22	12½	18½	55½	1(1)
6(2)	Ashes (burnt soil, turf, and weeds)	22	12½	24½	54½	2(1)
7(1)	Farmyard Manure 14 tons, 20 years, 1852-1871; unmanured since	48½	28½	54½	56½	7(1)
7(2)	Farmyard Manure 14 tons, every year	48½	28½	54½	56½	7(2)

(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 Nitrate 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.