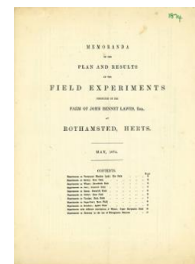


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Memoranda of the Field Experiments at Rothamsted May 1874



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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 4½ acres.)

PLOTS.	Manures, per acre, per annum.	PRODUCE PER ACRE.						PLOTS.
		Averages per Annum, over 20 Years, 1852-1871.			Twenty-second Season, 1873.			
		Quantity.	Weight per Bushel.	Total Straw.	Quantity.	Weight per Bushel.	Total Straw.	
1 O.	Unmanured continuously	20	52½	11½	14	55½	1 O.	
2 O.	3½ cwt. Superphosphate of Lime (1)	25	53½	13½	19½	57½	2 O.	
3 O.	200 lbs. Sulphate Potass, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia	22½	53	12½	15	57½	3 O.	
4 O.	200 lbs. Sulphate Potass, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, 3½ cwt. Superphosphate	27½	53½	14½	20½	59	4 O.	
1 A.	200 lbs. Ammonia-salts (2)	32½	59½	18½	32½	64½	1 A.	
2 A.	200 lbs. Ammonia-salts, and 3½ cwt. Superphosphate	47	57½	27½	50½	64½	2 A.	
3 A.	200 lbs. Ammonia-salts, 200 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Magnesia	35	57½	20½	34	64½	3 A.	
4 A.	200 lbs. Ammonia-salts, 200 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwt. Superphosphate	46½	54	28½	46½	67	4 A.	
(1) A.A.	275 lbs. Nitrate Soda	37	52	22½	37½	62½	1 A.A.	
(2) A.A.	275 lbs. Nitrate Soda, and 3½ cwt. Superphosphate	49½	53½	30½	49	65	2 A.A.	
(3) A.A.	275 lbs. Nitrate Soda, 200 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Magnesia	37½	52½	24½	33½	61	3 A.A.	
(4) A.A.	275 lbs. Nitrate Soda, 200 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwt. Superphosphate	49½	53½	32½	46½	67½	4 A.A.	
(1) A.A.S.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda (3)	38	52½	23½	45½	61	1 A.A.S.	
(2) A.A.S.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda, and 3½ cwt. Superphosphate (1)	48½	53	30½	51½	66½	2 A.A.S.	
(3) A.A.S.	275 lbs. Nitrate Soda, 400 lbs. Silicate Soda, 200 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, and 100 lbs. Sulph. Magnesia	41½	53½	25½	44½	64½	3 A.A.S.	
(4) A.A.S.	(275 lbs. Nitrate Soda, 400 lbs. Silicate Soda, 200 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Magnesia, and 3½ cwt. Superphosphate	50½	53½	33½	51½	68½	4 A.A.S.	
(1) C.	1000 lbs. Rape-cake	45½	53½	26½	47	66½	1 C.	
(2) C.	1000 lbs. Rape-cake, and 3½ cwt. Superphosphate	48½	53½	28½	48½	67	2 C.	
(3) C.	1000 lbs. Rape-cake, 200 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Magnesia	43½	53½	27½	44½	65½	3 C.	
(4) C.	1000 lbs. Rape-cake, 200 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Magnesia, 3½ cwt. Superphosphate	47½	53½	29½	46½	67½	4 C.	
(1) N.	275 lbs. Nitrate of Soda	37½	52½	22½	42½	62½	1 N.	
(2) N.	275 lbs. Nitrate of Soda	41½	52½	26½	44½	65½	2 N.	
5 O.	200 lbs. Sulphate of Potass, 3½ cwt. Superphosphate (4)	22½	53½	12½	17½	57½	5 O.	
5 A.	200 lbs. Sulphate of Potass, 3½ cwt. Superphosphate, and 200 lbs. Ammonia-salts	44½	53½	28½	42½	66½	5 A.	
M.	100 lbs. Sulphate of Soda, 100 lbs. Sulphate of Magnesia, and 3½ cwt. Superphosphate	21½	53½	12½	20	53½	M.	
6(1)	Unmanured continuously	22	52½	12½	15½	53½	7(1)	
6(2)	Ashes (burnt soil and turf)	21½	52½	12½	18½	54½	7(2)	
7(1)	Farmyard Manure 14 tons, 20 years, 1852-1871; unmanured since	48½	54½	28½	47½	69½	7(1)	
7(2)	Farmyard Manure 14 tons, every year	48½	54½	28½	47½	69½	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, 1852-37; 200 lbs. Nitrate of Soda, 400 lbs. Ammonia-salts per annum; next 10 years, 1858-67; 200 lbs. Nitrate of Soda, 400 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."
 (5) 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 ("A.A.S.") comprise, respectively, one half of the original "A.A." plots, and