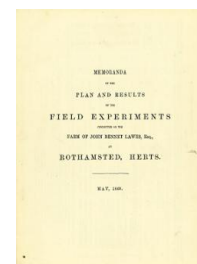


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Memoranda of the Plan and Results of the Field Experiments, May 1869



[Full Table of Content](#)

Experiments on Barley; Hoos Field

Rothamsted Research

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EXPERIMENTS ON THE GROWTH OF **BARLEY** YEAR AFTER YEAR ON THE SAME LAND, WITHOUT MANURE, AND WITH DIFFERENT KINDS OF MANURE, HOOS FIELD.

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 ; eighteenth Season—1869.	PRODUCE PER ACRE:					
		Average per Annum, over 17 Years, 1852-1868.			Seventeenth Season, 1868.		
		Dressed Corn.		Total Straw.	Dressed Corn.		Total Straw.
		Quantity.	Weight per Bushel.	lbs. cwt.	Quantity.	Weight per Bushel.	lbs. cwt.
1 O.	Unmanured continuously	20½	52½	12½	10½	54½	11½
2 O.	Superphosphate of Lime (1)	26½	53	14	18½	55½	9½
3 O.	Mixed Alkalies (2)	23½	52½	12½	14½	55½	8½
4 O.	Ditto	28½	53	14½	17½	55½	10
1 A.	200 lbs. Ammonia-salts (3)	32½	51½	18½	20½	53½	12½
2 A.	ditto	47½	53	28	37½	54½	19½
3 A.	ditto	35½	52½	20½	25	54½	15
4 A.	ditto	46½	53½	23½	34½	55½	15
1 AA.	275 lbs. Nitrate of Soda	37½	51½	22	27	53½	14½
2 AA.	ditto	49½	52½	30½	44	55½	21½
3 AA.	ditto	38	52	24½	27½	55½	16½
4 AA.	ditto	50½	52½	33	45½	56	25½
1 AAS.	275 lbs. and "Superphosphate of Lime"	38½	51½	23	29½	54½	17
2 AAS.	ditto and "Mixed Alkalies"	49½	52½	31	45	55½	23½
3 AAS.	ditto and "Mixed Alkalies"	40½	52½	25½	36½	56½	22
4 AAS.	ditto and "Mixed Alkalies"	50½	52½	33½	46½	56½	26½
1 C.	1000 lbs. Rape-cake	45½	53½	27½	37	56½	19½
2 C.	ditto	47½	53½	29½	35½	56½	18½
3 C.	ditto	49½	53½	27½	35½	55½	13½
4 C.	ditto	47½	53	28½	36½	55½	21
1 N.	275 lbs. Nitrate of Soda	37½	52½	23½	25½	53½	19
2 N.	ditto	41½	52½	26½	25½	55½	17½
5 O.	200 lbs. Sulphate of Potash	23½	53	12½	15	56½	8½
5 A.	200 lbs. Sulphate of Potash	44½	53½	28	36½	57½	20½
5 M.	100 lbs. each, Sulph. Soda and Sulph. Magnesia; and ditto	22½	53½	12½	14½	54	11
6 ⁽¹⁾	Unmanured continuously	23	52½	12½	15½	53½	10½
7	Ashes (burnt soil, turf, and weeds)	22½	52½	12½	16	53½	11
	Farm-yard dung (14 tons every year)	48	54	28½	48½	57	24½

(1) 200 lbs. Bone-ash, 150 lbs. Sulphuric acid (sp. gr. 1.7).
 (2) 200 lbs. Sulphate of Potash, 100 lbs. Sulphate of Soda, and 100 lbs. Sulphate of Magnesia (for the first six years, 300 lbs., 200 lbs., and 100 lbs., respectively).
 (3) Equal parts Sulphate and Muriate of Ammonia of Commerce.
 (4) First 6 years 1852-7, 400 lbs. Ammonia-salts per annum; next 10 years 1858-67, 200 lbs. Ammonia-salts per annum; Nitrate of Soda commenced in 1868. 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; the 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 remaining halves; and, for the sake of comparison with the latter, the average produce is given for the whole period of 17 years, 1852-1868.
 (6) 2000 lbs. Rape-cake per annum for the first six years, and 1000 lbs. only, each year since.
 (7) 300 lbs. Sulphate of Potash, 200 lbs. Bone-ash, and 150 lbs. Sulphuric acid (sp. gr. 1.7), without Nitrate of Soda, the first year (1852); Nitrate alone each year since.
 (8) 550 lbs. Nitrate of Soda for 1853-4-5-6, and 7; and 275 lbs. only each year since.
 (9) 300 lbs. per annum for the first six years, and 200 lbs. each year since.
 (10) Ammonia-salts also the first year, but not since.
 (11) Average of 16 years only.
 (12) Average of 16 years only.
 (13) Average of 14 years only.