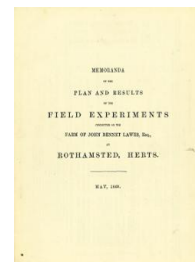


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# Memoranda of the Plan and Results of the Field Experiments, May 1869



[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:				Total Straw.
		Average per Annum, over 17 Years, 1852-1868.		Seventeenth Season, 1868.		
		Quantity.	Weight per Bushel.	Quantity.	Weight per Bushel.	
1 O.	Unmanured continuously	Bushels.	lbs.	Bushels.	lbs.	Total Straw.
2 O.	Superphosphate of Lime (1)	20½	52½	10½	54½	cwts.
3 O.	Mixed Alkalies (2)	26½	53	18½	55½	11½
4 O.	Ditto	23½	52½	14½	55½	9½
		28½	53	17½	55½	10
1 A.	200 lbs. Ammonia-salts (3)	32½	51½	20½	53½	12½
2 A.	ditto	47½	53	37½	54½	19½
3 A.	and "Superphosphate of Lime"	35½	52½	25½	54½	15
4 A.	and "Superphosphate of Lime" ; and "Mixed Alkalies"	46½	53½	34½	55½	16
	and "Superphosphate of Lime" ; and ditto	37½	51½	27	53½	14½
1 AA.	275 lbs. Nitrate of Soda ..	49½	52½	44	56½	21½
2 AA.	ditto	38	52	27½	55½	16
3 AA.	and "Superphosphate of Lime" ; and "Mixed Alkalies"	50½	52½	45½	56	25½
4 AA.	and "Superphosphate of Lime" ; and ditto	38½	51½	29½	54½	17
1 AAS.	275 lbs. and "Superphosphate of Lime" ; and 400 lbs. Silicate of Soda (4)	49½	52½	45	56½	22
2 AAS.	ditto	40½	52½	36½	56½	22
3 AAS.	ditto	50½	52½	46½	56½	26½
4 AAS.	ditto	38½	51½	29½	54½	17
1 C.	1000 lbs. Rape-cake ..	45½	53½	37	56½	19½
2 C.	ditto	47½	53½	35½	56½	18½
3 C.	and "Superphosphate of Lime" ; and "Mixed Alkalies"	49½	53½	37½	55½	19½
4 C.	and "Superphosphate of Lime" ; and ditto	47½	53	36½	55½	21
1 N.	275 lbs. Nitrate of Soda ..	37½ (11)	52½ (11)	25½	55½	19
2 N.	ditto	41½	52½ (11)	26½	55½	17½
5 O.	200 lbs. (5) Sulphate of Potass ..	23½ (12)	53 (12)	15	56½	8½
5 A.	200 lbs. (6) ditto ..	44½ (13)	53½ (13)	36½	57½	20½
5 M.	100 lbs. each, Sulph. Soda and Sulph. Magnesia ; and ditto ..	22½ (14)	53 (14)	14½	54	11
6 (1)	Unmanured continuously ..	23	52½	15½	53½	10½
7	Ashes (burnt soil, turf, and weeds) ..	22½	52½	16	53½	11
	Farm-yard dung (14 tons every year) ..	48	54	48½	57	24½

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.

(1) 200 lbs. Bone-ash, 150 lbs. Sulphuric acid (sp. gr. 1.7).

(2) 200 lbs. Sulphate of Potass, 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

(6) 2000 lbs. Rape-cake per annum for the first six years, and 1000 lbs. only, each year since.

(7) 300 lbs. Sulphate of Potass, 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.