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# Memoranda of the Plan and Results of the Rothamsted Field Experiments, May 1866



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## 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, with one or two exceptions, the same Manures on the same Plots each year.

(Area under experiment, about 4½ acres.)

PLOTS.	Manures, per acre; fifteen Year Season—1866.	PRODUCE PER ACRE.			
		Average per Annum, over 14 Years, 1852-1865.		Fourteenth Season, 1865.	
		Dressed Corn.	Total Straw.	Dressed Corn.	Total Straw.
		Quantity, Bushel.	Weight per Bushel.	Quantity, Bushel.	Weight per Bushel.
1 O.	Unmanured continuously	Bushels.	lbs.	Bushels.	lbs.
2 O.	Superphosphate of Lime (1)	21½	52	18	54
3 O.	Mixed Alkalies (2)	27½	53½	22½	53½
4 O.	Ditto	30½	52½	22	54½
6(1)	Unmanured continuously	24½	52½	21	53½
7	Ashes (burnt soil, turf, and weeds)	48½	52½	52½	54½
1 A.	Farm-yard dung (14 tons every year)	23½	52½	21	53½
2 A.	200 lbs. Ammonia-salts (3)	48½	52½	52½	54½
3 A.	ditto	24½	52½	21	53½
4 A.	ditto	48½	52½	52½	54½
1 A.A.	200 lbs. Superphosphate of Lime	34½	51½	29½	53½
2 A.A.	and "Superphosphate of Lime"	48½	52½	48½	54½
3 A.A.	and "Mixed Alkalies"	36½	51½	33½	54½
4 A.A.	and "Superphosphate of Lime"; and ditto	47½	52½	46½	53½
1 A.A.	200 lbs. ditto	30½	51½	33½	53½
2 A.A.	and "Superphosphate of Lime"	50½	52½	47½	54½
3 A.A.	and "Mixed Alkalies"	39½	51½	34½	54½
4 A.A.	and "Superphosphate of Lime"; and ditto	51	52½	49	53½
1 A.A.S.	200 lbs. (4) Rape-cake	39½	55½	35	54½
2 A.A.S.	200 lbs. (5) ditto	51	54½	47½	52½
3 A.A.S.	200 lbs. (6) ditto	45½	56	41	54½
4 A.A.S.	200 lbs. (7) ditto	54½	55	50½	53½
1 C.	1000 lbs. (8) Nitrate of Soda	46½	52½	45	53½
2 C.	1000 lbs. (9) ditto	48½	52½	46½	53½
3 C.	1000 lbs. (10) ditto	44½	52½	48½	53½
4 C.	1000 lbs. (11) ditto	48½	52½	48½	53½
1 N. (12)	275 lbs. Sulphate of Potash	38½ (11)	52½ (11)	37	54
2 N. (13)	275 lbs. (12) ditto	43 (11)	52 (11)	39½	53½
5 O.	200 lbs. (14) Sulphate of Potash	24½ (12)	52½ (12)	23	54½
M.	100 lbs. each, Sulph. Soda and Sulph. Magnesia; and 200 lbs. Ammonia-salts (15)	46½ (13)	52½ (13)	48½	54½
		25½ (13)	52½ (13)	19½	54½

(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. 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) 400 lbs. per annum for the first six years, and 200 lbs. only each year since.  
 (5) The application of Silicates did not commence until 1864, so that the average produce given applies to two years only (1864 and 1865). These Silicated plots ("AAS") comprise, respectively, one half of the original "AA" plots, and, as will be seen, they continue to be, in other respects, manured in the same way as the remaining halves.  
 (6) 2000 lbs. 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) Ammonia-salts also the first year, but not since.  
 (10) Average of 13 years only.  
 (11) Average of 11 years only.  
 (12) Average of 13 years only.  
 (13) Average of 11 years only.