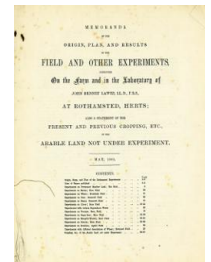


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Memoranda of the Field Experiments at Rothamsted: May 1881

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Experiments on Oats; Geescroft Field

Rothamsted Research

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(12)

GEESCHROFT FIELD.

EXPERIMENTS ON THE GROWTH OF OATS YEAR AFTER YEAR ON THE SAME LAND; WITHOUT MANURE, AND WITH DIFFERENT KINDS OF MANURE.

Previous Cropping—1847 and 1848, Clover, Experimental Manures; 1849—1859, Beans, Experimental Manures; 1860, Fallow; 1861 and 1862, Wheat, Unmanured; 1863, Fallow; 1864, Beans, Dunged; 1865, Wheat, Unmanured; 1866, Beans, Unmanured; 1867 and 1868, Wheat, Unmanured.

The first Experimental Oat Crop was in 1869; the last in 1878, since which time, owing to the wetness and the foulness of the land, it has been left fallow.
(Area under Experiment, $\frac{1}{2}$ acre.)

Plots.		MANURES, PER ACRE, PER ANNUM.		PRODUCE PER ACRE.												AVERAGE PER ANNUM 5 YEARS, 1869-1873.				
				1st SEASON, 1869.			2nd SEASON, 1870.			3rd SEASON, 1871.			4th SEASON, 1872.					5th SEASON, 1873.		
				Dressed Corn.		Total Straw.	Dressed Corn.		Total Straw.	Dressed Corn.		Total Straw.	Dressed Corn.		Total Straw.			Dressed Corn.		Total Straw.
				Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.			Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.
1	Unmanured	36½	36½	19½	cwts. 9½	Bushels. 16½	lbs. 35	20½	33½	11½	cwts. 7½	Bushels. 15	lbs. 36½	10½	27½	13½	cwts. 6½			
2	{ 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3½ cwts. Superphosphate of Lime }	45	38½	24½	9½	18½	35½	22	35½	13½	10½	19½	37½	10½	17	28½	8½			
3	400 lbs. Ammonia-salts }	56½	37½	36½	17½	30	34½	57½	36½	40½	30½	55½	37½	36½	32½	47	35½			
4	{ 400 lbs. Ammonia-salts, 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3½ cwts. Superphosphate }	75½	39½	54	28½	50½	36	58½	35½	50	45½	62½	39½	48½	34½	59	41½			
5	550 lbs. Nitrate of Soda }	62½	38½	42½	23	36½	33½	55	36½	34½	20½	42½	36½	39½	30½	47½	27½			
6	{ 550 lbs. Nitrate of Soda, 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3½ cwts. Superphosphate }	69½	38½	49½	28½	50	35½	60½	33½	48½	24	44½	37½	63½	33½	57½	35			

SECOND 5 YEARS ; MINERAL MANURES AS BEFORE, AMMONIA-SALTS AND NITRATE OF SODA ONLY HALF AS MUCH AS PREVIOUSLY.

Plots.		MANURES, PER ACRE, PER ANNUM.		PRODUCE PER ACRE.												AVERAGE PER ANNUM 4 YEARS, 1874, 5, 6, and 8.				
				6th SEASON, 1874.			7th SEASON, 1875.			8th SEASON, 1876.			9th SEASON, 1877 (FALLOW).					10th SEASON, 1878.		
				Dressed Corn.		Total Straw.	Dressed Corn.		Total Straw.	Dressed Corn.		Total Straw.	Dressed Corn.		Total Straw.			Dressed Corn.		Total Straw.
				Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.	Weight per Bushel.			Quantity, Bushels.	Weight per Bushel.	Quantity, Bushels.
1	Unmanured	12	31½	7	12½	29½	8½	32	24½	..	..	..	..	22½	32	13½	6			
2	{ 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3½ cwts. Superphosphate of Lime }	13½	31½	6½	13½	29½	7½	30	2½	..	..	..	..	17½	35½	13½	6½			
3	200 lbs. Ammonia-salts }	37½	33½	22½	15½	32½	17½	34½	6	..	..	..	..	30	32½	28½	14½			
4	{ 200 lbs. Ammonia-salts, 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3½ cwts. Superphosphate }	46½	34½	24½	20½	34½	29½	35½	12½	..	..	..	..	45½	37	38	20			
5	275 lbs. Nitrate of Soda }	35½	30	16½	11½	31½	12½	30½	3½	..	..	..	..	34½	34½	26½	11½			
6	{ 275 lbs. Nitrate of Soda, 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3½ cwts. Superphosphate }	28½	33½	16½	14½	33½	19½	33½	8	..	..	..	..	37	36½	28½	14½			

(1) "Superphosphate of Lime"—in all cases, made from 200 lbs. Bone-ash, 150 lbs. Sulphuric Acid sp. gr. 1.7 (and water).

(2) "Ammonia-salts"—in each case, equal parts Sulphate and Nitrate of Ammonia of Commerce.

(3) 550 lbs. Nitrate of Soda is reckoned to contain the same amount of Nitrogen as 400 lbs. "Ammonia-salts."

(4) On these plots, where large quantities of Nitrate of Soda had been applied year after year, the land, though more worked, was so wet that it could not be got into favourable condition for sowing, and the plant was very irregular.

(5) Owing to the extremely wet condition of the land, especially on the Nitrate plots, it was not sown until April 6, and then with a very unfavourable seed bed; and there being a heavy fall of snow a week later, the plant came up very irregularly, and much of it perished from standing surface-water.

(6) Owing to the very wet winter, 1876-7, the land could not be worked in time for sowing, and was therefore left fallow in 1877; no manures being applied.