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Yields of the Field Experiments 1898

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Oats; Geescrofts Field

Rothamsted Research

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EXPERIMENTS ON THE GROWTH OF OATS YEAR AFTER YEAR ON THE SAME

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.

(Area under experiment,

PLOTS.	MANURES, PER ACRE, PER ANNUM.	PRODUCE PER ACRE.					
		1ST SEASON, 1869.			2ND SEASON, 1870.		
		Dressed Grain.		Total Straw.	Dressed Grain.		Total Straw.
		Quantity.	Weight per Bushel.		Quantity.	Weight per Bushel.	
1	Unmanured	Bushels. 36 $\frac{3}{8}$	lbs. 36 $\frac{3}{8}$	cwts. 19 $\frac{1}{4}$	Bushels. 16 $\frac{3}{8}$	lbs. 35	cwts. 9 $\frac{1}{8}$
2	{ 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3 $\frac{1}{2}$ cwts. Superphosphate of Lime ⁽¹⁾ }	45	38 $\frac{1}{2}$	24 $\frac{1}{2}$	19 $\frac{1}{8}$	35 $\frac{1}{8}$	9 $\frac{5}{8}$
3	400 lbs. Ammonium-salts ⁽²⁾	56 $\frac{1}{8}$	37 $\frac{1}{2}$	36 $\frac{1}{8}$	30	34 $\frac{1}{8}$	17 $\frac{1}{2}$
4	{ 400 lbs. Ammonium-salts, 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3 $\frac{1}{2}$ cwts. Superphosphate .. }	75 $\frac{1}{4}$	39 $\frac{1}{4}$	54	50 $\frac{3}{8}$	36	28 $\frac{5}{8}$
5	550 lbs. Nitrate of Soda ⁽³⁾	62 $\frac{1}{4}$	38 $\frac{1}{2}$	42 $\frac{3}{4}$	36 $\frac{1}{2}$	35 $\frac{1}{4}$	23
6	{ 550 lbs. Nitrate of Soda, 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3 $\frac{1}{2}$ cwts. Superphosphate .. }	69 $\frac{3}{8}$	38 $\frac{1}{2}$	49 $\frac{1}{8}$	50	35 $\frac{3}{4}$	28 $\frac{3}{4}$

SECOND 5 YEARS ; MINERAL MANURES AS BEFORE,

		6TH SEASON, 1874.			7TH SEASON, 1875.		
		Bushels.	lbs.	cwts.	Bushels.	lbs.	cwts.
1	Unmanured	12	31 $\frac{1}{2}$	7	12 $\frac{1}{2}$	29 $\frac{3}{8}$	5 $\frac{1}{8}$
2	{ 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3 $\frac{1}{2}$ cwts. Superphosphate of Lime ⁽¹⁾ }	13 $\frac{3}{8}$	31 $\frac{1}{2}$	6 $\frac{1}{2}$	13 $\frac{1}{8}$	29 $\frac{3}{8}$	6 $\frac{1}{8}$
3	200 lbs. Ammonium-salts ⁽²⁾	37 $\frac{1}{4}$	33 $\frac{1}{4}$	22 $\frac{7}{8}$	30 $\frac{3}{8}$	32 $\frac{1}{8}$	15 $\frac{3}{8}$
4	{ 200 lbs. Ammonium-salts, 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3 $\frac{1}{2}$ cwts. Superphosphate .. }	46 $\frac{3}{8}$	34 $\frac{5}{8}$	24 $\frac{5}{8}$	30 $\frac{5}{8}$	34 $\frac{1}{8}$	20 $\frac{1}{4}$
5	275 lbs. Nitrate of Soda ⁽³⁾	35 $\frac{1}{8}$ ⁽⁴⁾	30 ⁽⁴⁾	16 $\frac{1}{2}$ ⁽⁴⁾	23 $\frac{1}{2}$ ⁽⁴⁾	31 $\frac{1}{4}$ ⁽⁴⁾	11 $\frac{3}{8}$ ⁽⁴⁾
6	{ 275 lbs. Nitrate of Soda, 200 lbs. Sulphate Potash, 100 lbs. Sulphate Soda, 100 lbs. Sulphate Magnesia, and 3 $\frac{1}{2}$ cwts. Superphosphate .. }	28 $\frac{1}{4}$ ⁽⁴⁾	33 $\frac{1}{2}$ ⁽⁴⁾	16 $\frac{5}{8}$ ⁽⁴⁾	28 $\frac{5}{8}$ ⁽⁴⁾	33 $\frac{5}{8}$ ⁽⁴⁾	14 $\frac{1}{2}$ ⁽⁴⁾

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

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

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

(35)

FIELD.

LAND; WITHOUT MANURE, AND WITH DIFFERENT DESCRIPTIONS OF MANURE.

The first Experimental Oat Crop was in 1869; the last in 1878, since which, owing to the wetness and the foulness of the land for several years, it was left fallow; and the experiment is now discontinued. Description of Oats—Black Tartarian every year excepting 1874, when White Tartarian were sown.

$\frac{3}{4}$ acre.)

PRODUCE PER ACRE.

3RD SEASON, 1871.			4TH SEASON, 1872.			5TH SEASON, 1873.			AVERAGE PER ANNUM 5 YEARS, 1869-1873.		
Dressed Grain.		Total Straw.	Dressed Grain.		Total Straw.	Dressed Grain.		Total Straw.	Dressed Grain.		Total Straw.
Quantity.	Weight per Bushel.		Quantity.	Weight per Bushel.		Quantity.	Weight per Bushel.		Quantity.	Weight per Bushel.	
Bushels.	lbs.	cwts.	Bushels.	lbs.	cwts.	Bushels.	lbs.	cwts.	Bushels.	lbs.	cwts.
20 $\frac{1}{2}$	33 $\frac{1}{2}$	11 $\frac{1}{2}$	15	36 $\frac{1}{2}$	7 $\frac{1}{2}$	10 $\frac{1}{2}$	27 $\frac{1}{2}$	5 $\frac{1}{2}$	19 $\frac{1}{2}$	33 $\frac{1}{2}$	10 $\frac{1}{2}$
22	35 $\frac{1}{2}$	13 $\frac{1}{2}$	19 $\frac{1}{2}$	37 $\frac{1}{2}$	10 $\frac{1}{2}$	17	28 $\frac{1}{2}$	8 $\frac{1}{2}$	24 $\frac{1}{2}$	35	13 $\frac{1}{2}$
57 $\frac{1}{2}$	36 $\frac{3}{4}$	40 $\frac{3}{4}$	55 $\frac{1}{2}$	37 $\frac{1}{2}$	30 $\frac{3}{4}$	36 $\frac{1}{2}$	32 $\frac{1}{2}$	16 $\frac{1}{2}$	47	35 $\frac{1}{2}$	28 $\frac{1}{2}$
58 $\frac{1}{2}$	35 $\frac{3}{4}$	50	62 $\frac{1}{2}$	39 $\frac{1}{2}$	45 $\frac{1}{2}$	48 $\frac{1}{2}$	34 $\frac{1}{2}$	27 $\frac{1}{2}$	59	37	41 $\frac{1}{2}$
55	36 $\frac{3}{4}$	34 $\frac{1}{2}$	42 $\frac{1}{2}$	36 $\frac{3}{4}$	20 $\frac{1}{2}$	39 $\frac{1}{2}$	30 $\frac{1}{2}$	16 $\frac{1}{2}$	47 $\frac{1}{2}$	35 $\frac{1}{2}$	27 $\frac{1}{2}$
60 $\frac{1}{2}$	33 $\frac{1}{2}$	48 $\frac{1}{2}$	44 $\frac{1}{2}$	37 $\frac{1}{2}$	24	63 $\frac{1}{2}$	33 $\frac{1}{2}$	24	57 $\frac{1}{2}$	35 $\frac{1}{2}$	35

AMMONIUM-SALTS AND NITRATE OF SODA ONLY HALF AS MUCH AS PREVIOUSLY.

8TH SEASON, 1876 (*).			9TH SEASON, 1877 (*). FALLOW.			10TH SEASON, 1878.			AVERAGE PER ANNUM 4 YEARS, 1874, '5, '6, and '8.		
Bushels.	lbs.	cwts.	Bushels.	lbs.	cwts.	Bushels.	lbs.	cwts.	Bushels.	lbs.	cwts.
8 $\frac{1}{2}$	32	2 $\frac{1}{2}$	..	..	..	22 $\frac{1}{2}$	32	8 $\frac{1}{2}$	13 $\frac{1}{2}$	31 $\frac{1}{2}$	6
7 $\frac{1}{2}$	30	2 $\frac{1}{2}$	..	..	..	17 $\frac{1}{2}$	35 $\frac{1}{2}$	8 $\frac{1}{2}$	13 $\frac{1}{2}$	31 $\frac{1}{2}$	6 $\frac{1}{2}$
17 $\frac{1}{2}$	34 $\frac{1}{2}$	6	..	..	..	30	32 $\frac{1}{2}$	12 $\frac{1}{2}$	28 $\frac{1}{2}$	33 $\frac{1}{2}$	14 $\frac{1}{2}$
29 $\frac{1}{2}$	35 $\frac{1}{2}$	12 $\frac{1}{2}$	..	..	..	45 $\frac{1}{2}$	37	22 $\frac{1}{2}$	38	35 $\frac{1}{2}$	20
12 $\frac{3}{4}$	30 $\frac{1}{2}$	3 $\frac{1}{2}$	..	..	..	34 $\frac{1}{2}$	34 $\frac{1}{2}$	12 $\frac{1}{2}$	26 $\frac{1}{2}$	31 $\frac{1}{2}$	11 $\frac{1}{2}$
19 $\frac{1}{2}$	33 $\frac{1}{2}$	8	..	..	..	37	36 $\frac{1}{2}$	17 $\frac{1}{2}$	28 $\frac{1}{2}$	34 $\frac{1}{2}$	14

(*) 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.

(*) 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.

The experiments were discontinued after 1878.

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