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



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Rothamsted Research

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OF MANURE. Experiments on the Growth of WHEAT year after year on the same Land; without Mandre, and with different kinds

BROADBALK FIELD.

year-First Experimental Wheat Crop in 1844. Wheat every year since; and, with some exceptions, nearly the same description of Manure on the same Plots each Previous Cropping-1839, Turnips, with Farmyard Manure; 1840, Barley; 1841, Peas; 1842, Wheat; 1843, Oats; the last four Grops Unmanured. (Area under experiment, about 13 acres.) especially during the last 14 years.

		n, 1865	Total		104 104 94	27 2 94 103	10½ 18 32¾ 41	413 28 214 24	222 222 200 200 200 200 200 200 200 200	28 304	253	134 254	263	113	13
	PRODUCE PER ACRE.	cond Seaso	Corn.	Weight per Bushel.	1bs. 59 59	613 603 604	61 61 613 613 612	61 594 594 594	57 4 60 61 60 60	60 2 61 <u>3</u>	613	$60\frac{3}{4}\binom{9}{10}$	583	₹09	58
		Twenty-second Season, 1865	Dressed Corn.	Quantity.	Bushels, 15½ 12½	37 ¹ 13 ¹ 148	144, 25 404, 43,	44 259 30 144 20 25 25 25 25 25 25 25 25 25 25 25 25 25	3.03.03.03.03.03.03.03.03.03.03.03.03.03	351 361	324	$\frac{17}{31\frac{1}{2}(10)}$	324	153	18 <u>4</u> 19 <u>4</u>
		m, over 1865.		Total Straw.	cwts. 15 <u>\$</u> 15	34 144 148	161 261 373 422 422	208 208 208 208 208 208 208 208 208 208	83 83 83 84 10 10 84 14 14	331 351	45	33 (7) 17 (8)	31	143	204 20
		Average per Annum, over 14 Years, 1852-1865.	Corn.	Weight per Bushel,	lbs. 58 57 8	593 574 574	559 251 559 251 559 251	572 564 573 573	70 70 70 70 60 88 9 88 814814 814	59 594	584	59 (7) 58½(8)	585	573	13 13 80 80 144 14
		Average 14 Yea	Dressed Corn.	Quantity.	Bushels. 18 16	35 15 16 16 16	28 28 8 9 7 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2001 2001 2001 2001 2001	30 354-48 3184-48	35 35 44 44	39	$32\frac{3}{4}(7)$ $18\frac{3}{4}(8)$	324	154	22 213
	(about) 0.40 Hectare or	und avoir.) = (about) undredweight) = (about) nor acre = (about)	= (about) 1.12 Kilogramme per Hectare or	Manures, per acre; twenty-third season—1866.	Superphosphate of Lime (three times as much as on No. 5 and succeeding Plots)	Farm-yard dung (14 tons every year) Unmanured continuously Unmanured for Crop of 1852, and since (previously Superphosphate and Anmonia-salts)	Mixed Alkalies ⁽¹⁾ ; and Superphosphate of Lime ⁽²⁾ ; and 200 lbs. Amnonia-salts ⁽³⁾ ;, ditto ditto; and 400 lbs. ditto ditto; and 600 lbs. ditto, ditto	ditto ; and 550 lbs. Nitrate of Soda one incone in	366½ lbs.(4) Sulphate of Soda "Superphosphate of Lime" and 400 lbs. ditto and 400 lbs. ditto and 400 lbs. ditto 200 lbs.(4) Sulphate of Potass ditto and 400 lbs.	"Mixed Alkalies"; ditto(5); and 400 lbs. ditto ; and 500 lbs. Rape-cake ditto ; and 500 lbs. Rape-cake	none ; none (none ; 400 lbs. "Ammonia-Salts"	none ; ditto(5) ; 300 lbs. "Ammonia-salts"; and 500 lbs. Rape-cake	Unmanured continuously	"Mixed Alkalies"; "Superphosphate of Lime"; and 100 lbs. Muriate Ammonia
		PLOTS.			0 1	01 to 41	$\begin{array}{c} 5 & (a \text{ and } b) \\ 6 & (a \text{ and } b) \\ 7 & (a \text{ and } b) \\ 8 & (a \text{ and } b) \end{array}$	$\begin{array}{c} 9 \left\{ \begin{matrix} a \\ b \end{matrix} \right. \\ 10 \left\{ \begin{matrix} a \end{matrix} \right. \end{array}$	11 $(a \text{ and } b)$ 12 $(a \text{ and } b)$ 13 $(a \text{ and } b)$ 14 $(a \text{ and } b)$	$15 \begin{Bmatrix} a \\ b \end{Bmatrix}$	16 $(a \text{ and } b)$	(6) $\left\{ 17 \left(a \text{ and } b \right) \right\}$	19	20	21 22

(2) Since 1858, 200 lbs. Sulphate of Potass, 100 lbs. Sulphate of Soda, and 100 lbs. Sulphate of Magnesia; for Crop of 1857-8, and previously, 300 lbs., and 100 lbs., respectively.

(2) 200 lbs. Bone-ash, 150 lbs. Sulphatic acid (sp. gr. 1-7);
(3) The Manures of 17 and 18 alternate.
(4) Average of 14 years' Ammonia-salts alternated with Mineral Manures.
(5) Average of 14 years' Ammonia-salts alternated with Ammonia-salts for the Crop of 1865.
(6) Average of 14 years' Mineral Manures alternated with Ammonia-salts for the Crop of 1865.
(7) Plots 1865.
(8) Average of 14 years' Mineral Manures alternated with Ammonia-salts for the Crop of 1865.
(9) Plots 1865.
(10) Plots and b) "are divided into duplicate portions, "a" a" and "b", respectively, which are manured alike; excepting that, for the crop of 1864, and since, the "a" portions of plots 5, 6, 7, 8, 9, 16, and 17 (or 18), have received a mixture of soluble Silicates in addition to the other Manures, but, hitherto, without any material effect.