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Memoranda of the Plan and Results of the Field Experiments, May 1870

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Experiments on Barley; Hoos Field

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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 44 acres.)

Plots.		Manures, per acre; eighteenth Season—1869.	PRODUCE PER ACRE.					
			Average per Annum, over 17 Years, 1852-1868.			Dressed Corn.		
			Quantity.	Weight per Bushel.	Total Straw.	17th Season; 1868.	18th Season; 1869.	19th Season; 1870.
1 O.	1 acre	0-40 Hectare ..	20½	52½	12½	10½	15½	13½
2 O.	1 bushel	0-36 Hectolitre ..	26½	53	14	18½	18½	18
3 O.	1 lb. (pound avoirdupois) ..	0-45 Kilogramme ..	23½	52½	12½	14½	18½	16½
4 O.	1 cwt. (hundredweight) ..	51-0 Kilogrammes ..	28½	53	14½	17½	22½	18½
	1 bushel per acre ..	0-9 Hectolitre per Hectare ..	32½	51½	18½	20½	27½	27½
	1 lb. per acre ..	1-12 Kilogramme per Hectare ..	47½	53½	28	37½	41½	48½
	1 cwt. per acre ..	125-5 Kilogrammes per Hectare ..	46½	53½	28½	34½	49½	30½
		Manures, per acre; eighteenth Season—1869.						
1 A.	200 lbs. Ammonia-salts ⁽¹⁾	and "Superphosphate of Lime"	37½	51½	22	27	32½	29½
2 A.	200 lbs. ditto	and "Superphosphate of Lime"	43½	53½	30½	44	48½	46½
3 A.	200 lbs. ditto	and "Mixed Alkalies"	38	52	24½	27½	33½	32½
4 A.	200 lbs. ditto	and "Superphosphate of Lime"	50½	53½	33	45½	49½	44½
1 AA.	275 lbs. Nitrate of Soda ..	and "Superphosphate of Lime"	38½	51½	23	29½	34½	35
2 AA.	275 lbs. ditto	and "Superphosphate of Lime"	49½	53½	31	45	49½	44½
3 AA.	275 lbs. ditto	and "Mixed Alkalies"	40½	52½	25½	36½	40½	42½
4 AA.	275 lbs. ditto	and "Superphosphate of Lime"	50½	53½	33½	46½	51½	47½
1 AAS.	1000 lbs. Rape-cake ..	and "Superphosphate of Lime"	45½	53½	27½	37	42½	41½
2 AAS.	1000 lbs. ditto	and "Superphosphate of Lime"	47½	53½	28½	38½	43½	41½
3 AAS.	1000 lbs. ditto	and "Mixed Alkalies"	43½	53½	27½	35½	38½	38½
4 AAS.	1000 lbs. ditto	and "Superphosphate of Lime"	47½	53	29½	36½	50½	43½
1 N.	275 lbs. Nitrate of Soda ..	and "Superphosphate of Lime"	37½	52½	23	25½	35½	34½
2 N.	275 lbs. ditto	and "Superphosphate of Lime"	41½	52½	26	25½	38½	40½
5 O.	200 lbs. Sulphate of Potass ..	and "Superphosphate of Lime"	22½	53	13½	15	23½	14½
5 A.	200 lbs. ditto	and "Superphosphate of Lime"	44½	53½	28	36½	49½	41½
5 M.	100 lbs. each, Sulph. Soda and Sulph. Magnesia; and	and 200 lbs. "Ammonia-salts"	22½	53	12½	14½	16½	16½
6 ⁽¹⁾	Unmanured continuously		23	52½	12½	15½	14½	15½
7	Asbes (burnt soil, turf and weeds)		22½	52½	12½	16	15½	15½
	Farm-yard dung (14 tons every year)		48	54	28½	48½	46½	47½

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 Murate 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.

(¹³) Average of 14 years only.