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Memoranda of the Plan and Results of the Rothamsted Field Experiments, June 1862



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Experiments on Oats; Hoos Field

Rothamsted Research

Rothamsted Research (1862) *Experiments on Oats; Hoos Field* ; Memoranda Of The Plan And Results Of The Rothamsted Field Experiments, June 1862, pp 3 - 3 - DOI:

<https://doi.org/10.23637/ERADOC-1-230>

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, for the growing (11th) Barley crop—1862. 1 Acre = (about) 0.40 Hectare. 1 Bushel... .. = (about) 0.36 Hectolitre. 1 lb. (pound, avoird.) = (about) 0.45 Kilogramme. 1 Bushel per acre = (nearly) 0.9 Hectolitre per Hectare. 1 lb. per acre .. = 1.12 Kilogramme per Hectare. | Average Produce per Acre, per Annum, during Ten Years, 1851-61. | |
|----------|--|---|-------------|
| | | Dressed Corn. | Total Corn. |
| 1 O. | Unmanured, continuously | Bushels. | lbs. |
| 2 O. | Superphosphate of Lime (1) | 22½ | 1281 |
| 3 O. | Mixed Alkalies (2) | 28 | 1562 |
| 4 O. | ditto | 24½ | 1396 |
| | ; and "Superphosphate of Lime" | 30½ | 1712 |
| 6 1 | Unmanured, continuously | 25 | 1414 |
| 7 | Ashes (burnt soil, turf, and weeds) | 24 | 1352 |
| | Farm-yard dung (14 tons every year) | 45 | 2541 |
| 1 A. | 200 lbs. Ammonia-Salts (3) | 33½ | 1908 |
| 2 A. | ditto | 45½ | 2563 |
| 3 A. | ; and "Superphosphate of Lime" | 35 | 1989 |
| 4 A. | ; "Superphosphate of Lime"; and "Mixed Alkalies" | 46½ | 2593 |
| 1 A.A. | 200 lbs. (4) ditto | 39½ | 2244 |
| 2 A.A. | ditto | 49 | 2744 |
| 3 A.A. | ; "Superphosphate of Lime"; and "Mixed Alkalies" | 38½ | 2190 |
| 4 A.A. | ; "Superphosphate of Lime"; and ditto | 50 | 2772 |
| 1 C. | 1000 lbs. (5) Rapecake | 47 | 2619 |
| 2 C. | 1000 lbs. (6) ditto | 47½ | 2677 |
| 3 C. | 1000 lbs. (6) ditto | 44 | 2480 |
| 4 C. | 1000 lbs. (6) ditto | 47½ | 2652 |
| 1 N. (6) | 275 lbs. Nitrate of Soda | 37½ (6) | 2125 (6) |
| 2 N. (6) | ditto | 42½ (6) | 2376 (6) |
| 5 O. | 200 lbs. (9) Sulphate of Potass | 24½ (11) | 1373 (11) |
| 5 A. | ditto | 44½ (11) | 2470 (11) |
| M. | 100 lbs. each, Sulph. Soda and Sulph. Magnesia; and | 22½ (12) | 1262 (12) |
| | ; and "Superphosphate of Lime" (10) | | |
| | ditto | | |
| | ; and 200 lbs. "Ammonia-Salts" | | |
| | ditto | | |

(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 muriate of commerce.
 (4) 2000 lbs. per annum for the first six years, and 1000 lbs. only, each year since.
 (5) 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.
 (6) 350 lbs. nitrate of soda for 1853-4-5-6, and 7; and 275 lbs. only each year since.
 (7) 300 lbs. per annum for the first six years, and 200 lbs. each year since.
 (8) Average of 7 years only.
 (9) Average of 9 years only.
 (10) Ammonia-salts also the first year, but not since.
 (11) Average of 9 years only.
 (12) Average of 9 years only.