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Yields of the Field Experiments 1878

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Experiments on Potatoes; Hoos Field

Rothamsted Research

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EXPERIMENTS ON POTATOES.—HOOS FIELD; commencing 1876.

The Land had been under experiments with Wheat, differently manured, from 1856 to 1874; and was fallowed in 1875. Plots 1, 2, 3, and 4 had been unmanured for the Wheat. Plots 5 and 6 had received the same quantity of Ammonia-salts alone every year for the Wheat, as Plot 5 now receives for potatoes: Plot 6 now receiving the same amount of nitrogen, but as Nitrate of Soda, instead of Ammonia-salts. Plots 7 and 8 received the same amount of complex mineral manure, and Ammonia-salts, for the Wheat, as Plot 7 now receives for potatoes; and Plot 8 now receives the same complex mineral manures, and the same amount of nitrogen, but as Nitrate of Soda instead of Ammonia-salts. Plots 9 and 10 received the same complex mineral manures alone for the Wheat as Plot 10 now receives for potatoes; Plot 9 now receives superphosphate only (?). Description of Potatoes, "Rock." Rows 25 inches apart; 12 inches from plant to plant in the rows.

| PLOTS. | MANURES PER ACRE PER ANNUM. | PRODUCE PER ACRE. | | | | |
|--------|-----------------------------|-------------------|--------|-----------|--------|-------|
| | | Tubers. | | | | Tops. |
| | | Good. | Small. | Diseased. | TOTAL. | |

FIRST SEASON, 1876. Potatoes planted, June 10-13; Crop taken up, Oct. 30-31.

| | | | | | | |
|----|--|------------|------------|------------|------------|---|
| 1 | Unmanured | Tons. cwt. | Tons. cwt. | Tons. cwt. | Tons. cwt. | |
| 2 | Farmyard Manure (14 tons) | 3 6½ | 0 5½ | 0 5½ | 3 17½ | |
| 3 | Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) | 3 18½ | 0 4 | 0 3½ | 4 5½ | Withered, not weighed, each lot spread on its own Plot and ploughed in. |
| 4 | Farmyard Manure (14 tons), 3½ cwt. Superphosphate, and 550 lbs. Nitrate of Soda | 4 14½ | 0 6½ | 0 5½ | 5 6½ | |
| 5 | 400 lbs. Ammonia-salts (?) | 5 8½ | 0 5½ | 0 19½ | 6 14½ | |
| 6 | 550 lbs. Nitrate of Soda | 2 5½ | 0 6½ | 0 6 | 2 18 | |
| 7 | 400 lbs. Ammonia-salts, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | 3 2 | 0 5½ | 0 9½ | 3 17½ | |
| 8 | 550 lbs. Nitrate of Soda, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | 6 12½ | 0 9½ | 1 0 | 8 2 | |
| 9 | 3½ cwt. Superphosphate | 6 17½ | 0 10 | 1 8½ | 8 15½ | |
| 10 | 3½ cwt. Superphosphate, 300 lbs. Sulphate Potass, 100 lbs. Sulphate Soda, and 100 lbs. Sulphate Magnesia | 4 18½ | 0 8½ | 0 13½ | 6 1 | |
| | | 5 3½ | 0 6½ | 0 19½ | 6 3½ | |

SECOND SEASON, 1877. Potatoes planted, April, 27-28; Crop taken up, Oct. 8-10.

| | | | | | | |
|----|--|------------|------------|------------|------------|---|
| 1 | Unmanured | Tons. cwt. | Tons. cwt. | Tons. cwt. | Tons. cwt. | |
| 2 | Farmyard Manure (14 tons) | 2 11½ | 0 6½ | 0 2½ | 3 0½ | Withered, not weighed, each lot spread on its own Plot, (Oct. 14th) blew all off, before ploughing. |
| 3 | Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) | 5 0½ | 0 11½ | 0 6 | 5 18 | |
| 4 | Farmyard Manure (14 tons), 3½ cwt. Superphosphate, and 550 lbs. Nitrate of Soda | 4 13½ | 0 7½ | 0 4 | 5 4½ | |
| 5 | 400 lbs. Ammonia-salts (?) | 6 18½ | 0 7 | 0 17½ | 8 3½ | |
| 6 | 550 lbs. Nitrate of Soda | 3 9½ | 0 7½ | 0 4 | 4 1 | |
| 7 | 400 lbs. Ammonia-salts, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | 4 14½ | 0 6½ | 0 5½ | 5 7½ | |
| 8 | 550 lbs. Nitrate of Soda, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | 6 12 | 0 11½ | 0 14½ | 7 17½ | |
| 9 | 3½ cwt. Superphosphate | 7 8½ | 0 8½ | 0 16½ | 8 13½ | |
| 10 | 3½ cwt. Superphosphate, 300 lbs. Sulphate Potass, 100 lbs. Sulphate Soda, and 100 lbs. Sulphate Magnesia | 2 12½ | 0 11½ | 0 1½ | 3 6 | |
| | | 3 6½ | 0 7½ | 0 1½ | 3 15½ | |

THIRD SEASON, 1878. Potatoes planted, April 29. Crop taken up.

| | | | | | | |
|----|--|------------|------------|------------|------------|---|
| 1 | Unmanured | Tons. cwt. | Tons. cwt. | Tons. cwt. | Tons. cwt. | |
| 2 | Farmyard Manure (14 tons) | 2 11½ | 0 8½ | 0 2 | 2 17½ | W. Howard weighed, each lot spread on its own Plot and ploughed in. |
| 3 | Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) | 4 11 | 0 11½ | 0 8½ | 5 11½ | |
| 4 | Farmyard Manure (14 tons), 3½ cwt. Superphosphate, and 550 lbs. Nitrate of Soda | 5 18½ | 0 11½ | 0 13½ | 7 6 | |
| 5 | 400 lbs. Ammonia-salts (?) | 6 11½ | 0 11½ | 1 0 6½ | 8 9½ | |
| 6 | 550 lbs. Nitrate of Soda | 2 11½ | 0 8½ | 0 5½ | 3 10½ | |
| 7 | 400 lbs. Ammonia-salts, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | 3 11½ | 0 7½ | 0 4½ | 4 13½ | |
| 8 | 550 lbs. Nitrate of Soda, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | 4 11½ | 0 7½ | 0 1 17½ | 5 13½ | |
| 9 | 3½ cwt. Superphosphate | 4 11½ | 0 7½ | 0 1 3½ | 5 11 0½ | |
| 10 | 3½ cwt. Superphosphate, 300 lbs. Sulphate Potass, 100 lbs. Sulphate Soda, and 100 lbs. Sulphate Magnesia | 3 11 0½ | 0 7½ | 0 1 15½ | 4 11 0½ | |
| | | 3 11 0½ | 0 8½ | 0 4 4½ | 4 11 0½ | |

FOURTH SEASON, 1879.

| | | | | | |
|----|--|------------|------------|------------|------------|
| 1 | Unmanured | Tons. cwt. | Tons. cwt. | Tons. cwt. | Tons. cwt. |
| 2 | Farmyard Manure (14 tons) | | | | |
| 3 | Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) | | | | |
| 4 | Farmyard Manure (14 tons), 3½ cwt. Superphosphate, and 550 lbs. Nitrate of Soda | | | | |
| 5 | 400 lbs. Ammonia-salts (?) | | | | |
| 6 | 550 lbs. Nitrate of Soda | | | | |
| 7 | 400 lbs. Ammonia-salts, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | | | | |
| 8 | 550 lbs. Nitrate of Soda, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | | | | |
| 9 | 3½ cwt. Superphosphate | | | | |
| 10 | 3½ cwt. Superphosphate, 300 lbs. Sulphate Potass, 100 lbs. Sulphate Soda, and 100 lbs. Sulphate Magnesia | | | | |

FIFTH SEASON, 1880.

| | | | | | |
|----|--|------------|------------|------------|------------|
| 1 | Unmanured | Tons. cwt. | Tons. cwt. | Tons. cwt. | Tons. cwt. |
| 2 | Farmyard Manure (14 tons) | | | | |
| 3 | Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) | | | | |
| 4 | Farmyard Manure (14 tons), 3½ cwt. Superphosphate, and 550 lbs. Nitrate of Soda | | | | |
| 5 | 400 lbs. Ammonia-salts (?) | | | | |
| 6 | 550 lbs. Nitrate of Soda | | | | |
| 7 | 400 lbs. Ammonia-salts, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | | | | |
| 8 | 550 lbs. Nitrate of Soda, 3½ cwt. Superphos., 300 lbs. Sulph. Potass, 100 lbs. Sulph. Soda, 100 lbs. Sulph. Mag. | | | | |
| 9 | 3½ cwt. Superphosphate | | | | |
| 10 | 3½ cwt. Superphosphate, 300 lbs. Sulphate Potass, 100 lbs. Sulphate Soda, and 100 lbs. Sulphate Magnesia | | | | |

(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 Muriate Ammonis of Commerce.

(3) The complex mineral manure having been sown in October, 1874, but the Wheat not put in, and therefore no crop taken in 1875, no mineral manures are sown afresh on Plots 7, 8, 9, and 10, for the first crop of potatoes, 1876.