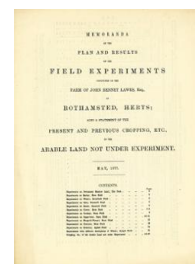


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# Memoranda of the Field Experiments at Rothamsted: May 1877



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## Experiments on Mangold-wurzel; Barn-field

### Rothamsted Research

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EXPERIMENTS ON MANGOLD WURZEL.—BARN FIELD (after SUGAR-BEET); commencing 1876.

The arrangement of the Plots is precisely the same as previously for Sugar-beet, excepting that Plot 9, which was unmanured for Sugar-beet, and also previously for Swedes, is now added as a manured Plot. With this exception, the manures are also substantially the same as previously for Sugar-beet; in fact, precisely the same as for the Sugar-beet in 1872 and 1873. Seed, Yellow Globe; dibbled on ridges, rows 26 inches apart; plants 11 inches apart in the rows (?). Area under experiment about 8 acres. Roots all carted off, Leaves weighed, spread on the respective Plots, and ploughed in.

PLOTS.	MANURES PER ACRE PER ANNUM.	PRODUCE PER ACRE.									
		SERIES 1.		SERIES 2. As Series 1, and Cross-dressed with 550 lbs. Nitrate Soda.		SERIES 3. As Series 1, and Cross-dressed with 400 lbs. "Ammonia- salts."		SERIES 4. As Series 1, and Cross-dressed with 2000 lbs. Rape-cake and 400 lbs. "Am- monia-salts."		SERIES 5. As Series 1, and Cross-dressed with 2000 lbs. Rape-cake.	
FIRST SEASON, 1876.											
		Roots.	Leaves.	Roots.	Leaves.	Roots.	Leaves.	Roots.	Leaves.	Roots.	Leaves.
1	Farmyard Manure (14 tons) .. .. .	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.
2	Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) ..	19 12	4 9	25 2	7 5	29 19	7 12	31 9	10 5	24 9	5 19
3	Without Manure (1846, and since) .. .. .	19 13	4 6	27 13	7 3	29 8	7 10	30 18	9 16	29 19	6 12
4	{ 3½ cwt. Superphosphate, 500 lbs. Sulphate Potass, 200 lbs. Chloride } { Sodium (common salt), 200 lbs. Sulphate Magnesia .. .. . }	6 10	1 14	20 13	5 12	14 3	4 10	19 19	7 7	17 4	4 15
5	3½ cwt. Superphosphate .. .. .	8 8	1 15	25 1	6 0	19 19	4 9	30 8	8 13	25 8	5 10
6	3½ cwt. Superphosphate, 500 lbs. Sulphate Potass .. .. .	7 10	1 14	21 0	5 14	13 10	5 1	17 2	7 14	17 17	5 17
7	3½ cwt. Superphosphate, 500 lbs. Sulphate Potass .. .. .	6 16	1 12	21 2	5 8	17 15	4 13	26 8	9 0	20 10	5 4
8	3½ cwt. Superphos., 500 lbs. Sulphate Potass, 36½ lbs. Am.-salts (?)	8 13	2 3	22 11	5 14	19 2	5 11	27 2	9 9	20 12	5 15
9	Unmanured, 1853, and since; previously part Unman., part Superphos. Farmyard Manure (14 tons), 3½ cwt. Superphosphate (?) .. .. .	5 9	1 10	15 16	5 3	11 17	4 16	18 2	7 11	15 12	4 18
		..	..	..	..	25 14	7 6	..	..	..	..
SECOND SEASON, 1877.											
		Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.
1	Farmyard Manure (14 tons) .. .. .										
2	Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) ..										
3	Without Manure (1846, and since) .. .. .										
4	{ 3½ cwt. Superphosphate, 500 lbs. Sulphate Potass, 200 lbs. Chloride } { Sodium (common salt), 200 lbs. Sulphate Magnesia .. .. . }										
5	3½ cwt. Superphosphate .. .. .										
6	3½ cwt. Superphosphate, 500 lbs. Sulphate Potass .. .. .										
7	3½ cwt. Superphos., 500 lbs. Sulphate Potass, 36½ lbs. Am.-salts (?)										
8	Unmanured, 1853, and since; previously part Unman., part Superphos.										
9	Farmyard Manure (14 tons), 3½ cwt. Superphosphate (?) .. .. .										
THIRD SEASON, 1878.											
		Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.
1	Farmyard Manure (14 tons) .. .. .										
2	Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) ..										
3	Without Manure (1846, and since) .. .. .										
4	{ 3½ cwt. Superphosphate, 500 lbs. Sulphate Potass, 200 lbs. Chloride } { Sodium (common salt), 200 lbs. Sulphate Magnesia .. .. . }										
5	3½ cwt. Superphosphate .. .. .										
6	3½ cwt. Superphosphate, 500 lbs. Sulphate Potass .. .. .										
7	3½ cwt. Superphos., 500 lbs. Sulphate Potass, 36½ lbs. Am.-salts (?)										
8	Unmanured, 1853, and since; previously part Unman., part Superphos.										
9	Farmyard Manure (14 tons), 3½ cwt. Superphosphate (?) .. .. .										
FOURTH SEASON, 1879.											
		Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.
1	Farmyard Manure (14 tons) .. .. .										
2	Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) ..										
3	Without Manure (1846, and since) .. .. .										
4	{ 3½ cwt. Superphosphate, 500 lbs. Sulphate Potass, 200 lbs. Chloride } { Sodium (common salt), 200 lbs. Sulphate Magnesia .. .. . }										
5	3½ cwt. Superphosphate .. .. .										
6	3½ cwt. Superphosphate, 500 lbs. Sulphate Potass .. .. .										
7	3½ cwt. Superphos., 500 lbs. Sulphate Potass, 36½ lbs. Am.-salts (?)										
8	Unmanured, 1853, and since; previously part Unman., part Superphos.										
9	Farmyard Manure (14 tons), 3½ cwt. Superphosphate (?) .. .. .										
FIFTH SEASON, 1880.											
		Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.	Tons. cwt.
1	Farmyard Manure (14 tons) .. .. .										
2	Farmyard Manure (14 tons), and 3½ cwt. Superphosphate (?) ..										
3	Without Manure (1846, and since) .. .. .										
4	{ 3½ cwt. Superphosphate, 500 lbs. Sulphate Potass, 200 lbs. Chloride } { Sodium (common salt), 200 lbs. Sulphate Magnesia .. .. . }										
5	3½ cwt. Superphosphate .. .. .										
6	3½ cwt. Superphosphate, 500 lbs. Sulphate Potass .. .. .										
7	3½ cwt. Superphos., 500 lbs. Sulphate Potass, 36½ lbs. Am.-salts (?)										
8	Unmanured, 1853, and since; previously part Unman., part Superphos.										
9	Farmyard Manure (14 tons), 3½ cwt. Superphosphate (?) .. .. .										

(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 of Ammonia of Commerce.  
 (?) Plot 9 sown on the flat instead of on ridges; plants ridged up afterwards; rows 22 inches apart, plants 10 inches apart in the rows.