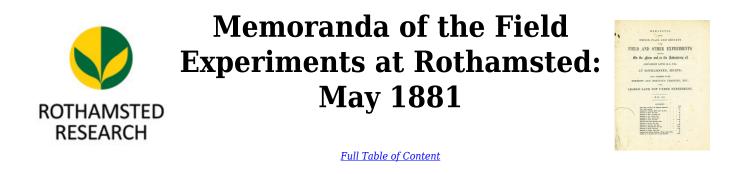
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## **Experiments on Turnips: Barn Field**

## **Rothamsted Research**

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## (18)

EXPERIMENTS ON SUGAR BEET (VILMORIN'S GREEN-TOP WHITE SILESIAN)-BARN FIELD.

GROWN YEAR AFTER YEAR ON THE SAME LAND, WITHOUT MANURE, AND WITH DIFFERENT DESCRIPTIONS OF MANURE, COMMENCING 1871.

Manures per Acre per Appum

Area under experiment about 8 acres. The experiments are arranged as under, in 5 Series, each of which comprises 8 Plots.

	Manures, per Acre, per Annum.											
Plots.	Series 1.				SERIES 2. Each Plot as Series 1, and Cross-dressed with 550 lbs. Nitrate Soda.		SERIES 3. Each Plot as Series 1, and Cross-dressed with 400 lbs, "Ammonia- salts,"		SERIES 4. Each Plot as Series 1, and Cross-dressed with 2000 lbs. Rape-cake, and 400 lbs. "Am- monia-salts."		SERIES 5. Each Plot as Series 1, and Cross-dressed with 2000 lbs. Rape-cake.	
1.00	where I want want a straight to special a	FIRST	Season, 1	871.				1		1		
					Agon (Dee	to Animum all		4 6	C	1		
	" "rese failer, in Lin, or Failer,	PRODUCE PER ACRE (Roots trimmed as for feeding, not as for Sugar-making).										
		Roots.	Leaves.	Roots.	Leaves.	Roots.	Leaves.	Roots.	Leaves.	Roots.	Leaves,	
1 2 3 4 5 6 7 8	Farmyard Manure (14 tons) Farmyard Manure (14 tons) and 3½ cwts. Superphosphate ( <sup>1</sup> ) Without Manure (1846, and since) (3½ cwts. Superphosphate, 300 lbs. Sulphate Potass, 200 lbs. Sulphate) Soda, 100 lbs. Sulphate Magnesia 3½ cwts. Superphos, 300 lbs. Sulph. Potass 3½ cwts. Superphos., 300 lbs. Sulph. Potass 34 cwts. Superphos.	Tons. cwts. 18 3 14 13 7 11 7 11 5 12 5 1 5 18 7 10	$\begin{array}{cccc} {\rm Tons.\ ewis.} & 3 & 5 \\ 2 & 14 \\ 2 & 0 \\ 1 & 5 \\ 1 & 8 \\ 1 & 4 \\ 1 & 5 \\ 1 & 14 \\ \end{array}$	Tons. cwts. 27 13 25 16 22 3 22 15 20 19 21 5 20 19 21 13	Tons. cwts. 6 19 5 15 5 12 4 8 3 14 3 13 3 18 3 16	Tons. cwis. 22 1 21 15 15 6 17 10 15 4 17 4 18 8 16 2	$\begin{array}{cccc} {\rm Tons.\ ewts.} & 5 & 6 \\ & 4 & 6 \\ & 4 & 16 \\ & 3 & 5 \\ & 3 & 19 \\ & 3 & 4 \\ & 4 & 3 \\ & 4 & 15 \end{array}$	Tons, cwts. 26 4 25 2 19 18 22 15 19 18 23 11 21 0 17 19	Tons. cwts. 6 14 6 7 7 0 6 3 7 12 6 11 5 0 7 11	Tons. cwts.         28         18           25         4         20         16           21         7         18         19           21         7         20         7	Tons. cwtb 5 14 5 5 4 12 3 19 4 5 3 11 3 17 4 9	
		Second	SEASON,	1872.								
1 2 3 4 5 6 7 8	Farmyard Manure (14 tons) Farmyard Manure (14 tons), and 3 <sup>+</sup> / <sub>2</sub> evts. Superphosphate ( <sup>1</sup> ) Without Manure (1846, and since) (3 <sup>+</sup> / <sub>2</sub> evts. Superphosphate, 500 lbs. Sulphate Potass, 200 lbs. Chloride) Sodium (common salt), 200 lbs. Sulphate Magnesia 3 <sup>+</sup> / <sub>2</sub> evts. Superphosphate	Tons. cwts. 15 13 16 0 7 17 6 14 6 17 6 6 6 15 5 4	Tons. cwts. 4 2 3 18 1 13 1 10 1 8 1 5 1 8 1 5 1 5	Tons. cwts.         23         9         24         6         21         7         20         2         19         6         16         16         16         17         0         15         6         15         6	Tons. cwts. 7 19 8 16 6 6 5 19 6 4 5 14 6 1 5 19	Tons. cwts. 22 14 22 0 15 3 15 10 14 5 14 7 15 9 13 10	Tons, cwts, 9 0 7 16 4 13 3 7 4 13 3 19 3 19 4 1	Tons, cwts. 26 8 25 9 20 8 23 8 18 11 22 16 23 9 19 12	Tons. cwts. 9 11 9 14 10 1 7 13 10 4 9 9 9 10 9 17	Tons. cwts. 22 5 20 15 16 3 17 18 15 18 15 17 15 10 15 0	Tons, cwts, 6 1 5 11 3 11 3 15 3 16 3 14 3 15 4 6	
- 10		THIRD	SEASON,	1873.						19	12	
$     \begin{array}{c}       1 \\       2 \\       3 \\       4 \\       5 \\       6 \\       7 \\       8 \\     \end{array} $	Farmyard Manure (14 tons)	$\begin{array}{c} \text{Tons. cwts.} \\ 15 & 2 \\ 14 & 6 \\ 5 & 1 \\ 5 & 2 \\ 5 & 5 \\ 4 & 12 \\ 5 & 19 \\ 4 & 11 \end{array}$	$\begin{array}{c} \text{Tons. cwts.} \\ 5 12 \\ 5 2 \\ 1 11 \\ 1 13 \\ 1 11 \\ 1 5 \\ 1 12 \\ 1 7 \end{array}$	Tons. cwis. 20 5 21 10 14 5 16 9 18 8 15 17 16 14 12 9	Tons. cwts. 10 9 11 0 6 11 6 11 5 13 4 4 5 3 5 18	Tons. cwts. 22 2 19 4 9 3 12 10 10 19 12 18 13 0 8 8	Tons. cwts. 9 18 8 9 3 16 3 10 5 0 3 12 4 15 2 19	Tons. cwts. 22 15 23 7 15 12 20 3 14 15 20 2 19 16 15 2	Tons. cwts. 12 10 13 6 9 11 8 0 9 8 9 5 9 0 9 8 9 5 9 0 9 8	Tons. cwts.         23 10         21 18         14 13         16 1         13 19         14 14         15 17         12 2         2	Tons. cwts. 7. 8 6 18 4 1 3 8 4 9 3 11 4 4 3 16	
	FOURTH SEASON, 1874 (8). Mineral Manures as in 1872 and 1873	; but no ]	Farmyard	Manure, or	cross-dress	sings of Ni	trate Soda,	Ammonia	-salts, or 1	Rape-cake.	1.1.	
$     \begin{array}{c}       1 \\       2 \\       3 \\       4 \\       5 \\       6 \\       7 \\       8 \\       8     \end{array} $	Without Manure, 1874 and 1875 (Farmyard Manure in '71, '72, '73) 3 <sup>1</sup> / <sub>3</sub> ewts. Superphosphate (with Farmyard Manure, '71, '72, '73) <sup>3</sup> / <sub>3</sub> ewts. Superphosphate, 500 lbs. Sulphate Potass, 200 lbs. Chloridel Sodium (common sath), 200 lbs. Sulphate Magnesia <sup>3</sup> / <sub>4</sub> ewts. Superphosphate. <sup>3</sup> / <sub>4</sub> ewts. Superphose, 500 lbs. Sulph. Potass <sup>3</sup> / <sub>4</sub> ewts. Superphose, 500 lbs. Sulph. Pot, and Ammsalts, '71, '72, '73 Unmanured, 1833, and since; previously part Unman., part Superphos.	$\begin{array}{c} \text{Tons. cwts.}\\ 10.16\\ 13&3\\ 5&2\\ 6&10\\ 5&19\\ 5&11\\ 6&14\\ 5&0\\ \end{array}$	Tons. cwts. 5 6 5 9 1 5 1 8 1 7 1 5 1 3 1 2	Tons. cwts. 11 14 7 9 3 2 8 16 7 10 8 1 9 5 7 13	Tons. cwts. 8 9 4 16 2 6 3 6 3 6 2 14 2 11 2 16	Tons. cwts. 11 7 9 5 3 7 7 10 7 6 8 1 8 15 6 10	Tons. cwts. 8 3 5 17 2 2 2 0 2 8 1 18 1 14 2 0	Tons. cwts. 13 7 12 5 2 11 10 12 7 15 9 10 11 14 7 6	Tons. cwts. 9 17 7 7 2 10 4 16 5 4 4 13 4 11 4 7	Tons. cwts. 14 10 13 1 3 19 8 2 5 17 7 13 8 4 3 12	Tons. cwts 7 8 6 4 2 9 3 11 3 6 3 2 3 9 2 1	
	FIFTH SEASON, 1875. Mineral Manures as in 1872, 1873, and 187	4; but no	Farmyar	l Manure, o	or cross-dre	ssings of 1	Vitrate Sod	a, Ammon	ia-salts, or	Rape-cake.		
1 2 3 4 5 6 7 8	<ul> <li>Without Manure, 1874 and 1875 (Farmyard Manure in '71, '72, '73)</li> <li>3<sup>4</sup>/<sub>2</sub> ovts. Superphosphate (with Farmyard Manure, '71, '72, '73)</li> <li>Without Manure (1846, and since)</li> <li>(3<sup>4</sup>/<sub>2</sub> ovts. Superphosphate, 500 lbs. Sulphate Potass, 200 lbs. Chloride)</li> <li>Sodium (common salt), 200 lbs. Sulphate Magnesia</li> <li>S<sup>4</sup>/<sub>2</sub> ovts. Superphosphate.</li> <li>Superphosphate.</li> <li>Superphosphate.</li> <li>S<sup>4</sup>/<sub>2</sub> ovts. Superphoss, 500 lbs. Sulph. Potass</li> <li>S<sup>4</sup>/<sub>2</sub> ovts. Superphose, 500 lbs. Sulph. Potass</li> </ul>	Tons. cwts. 17 5 15 11 5 9 5 9 5 11 5 4 5 11 4 15	Tons. cwts. 2 11 2 2 1 1 1 0 1 2 1 0 1 1 1 0	Tons. cwts. 19 18 19 18 9 5 9 8 9 19 8 4 8 2 7 4	Tons. cwts. 2 14 2 18 1 12 1 7 1 10 1 4 1 6 1 2	Tons. cwts. 21 0 18 17 8 0 7 16 7 16 7 1 7 6 6 1	Tons. cwts. 3 6 2 18 1 3 1 1 1 4 1 2 1 1 1 4	Tons. cwts. 22 7 20 9 14 1 12 14 13 17 12 8 11 17 12 2	Tons. cwis. 3 12 3 5 2 13 1 14 2 8 2 3 1 17 2 11	Tons. cwts. 19 13 18 10 11 17 10 3 11 2 10 2 10 6 11 12	Tons. cwts 2 11 2 1 1 10 1 7 1 14 1 9 1 11 2 13	

(2) Animonal-saits — in each case equal parts Supparte and Aurinte of Ammonia of Commerce. (2) Owing to the deficiency of Rain for some time after sowing a large proportion of the plants failed. Some were transplanted on plots 1, but not on the other plots; and eventually the plant was (excepting on plots 1) upon the whole very deficient and irregular, the remaining plants being larger than usual.