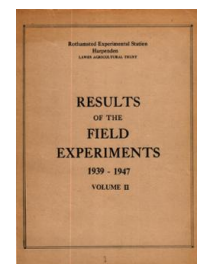


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Yields of the Field Experiments 1939-1947 Volume 2



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P Sugar Beet - Including Fertilizer Placement and Factory Series

Rothamsted Research

Rothamsted Research (1948) *P Sugar Beet - Including Fertilizer Placement and Factory Series ; Yields Of The Field Experiments 1939-1947 Volume 2*, pp 135 - 161 - **DOI:**
<https://doi.org/10.23637/ERADOC-1-186>

TABLE 1

Summary of the results of the analysis of the data from the 1990-1991 season

Year	Number of birds	Number of nests	Number of eggs	Number of chicks
1990	10	10	10	10
1991	10	10	10	10
1992	10	10	10	10
1993	10	10	10	10
1994	10	10	10	10
1995	10	10	10	10
1996	10	10	10	10
1997	10	10	10	10
1998	10	10	10	10
1999	10	10	10	10
2000	10	10	10	10
2001	10	10	10	10
2002	10	10	10	10
2003	10	10	10	10
2004	10	10	10	10
2005	10	10	10	10
2006	10	10	10	10
2007	10	10	10	10
2008	10	10	10	10
2009	10	10	10	10
2010	10	10	10	10
2011	10	10	10	10
2012	10	10	10	10
2013	10	10	10	10
2014	10	10	10	10
2015	10	10	10	10
2016	10	10	10	10
2017	10	10	10	10
2018	10	10	10	10
2019	10	10	10	10
2020	10	10	10	10
2021	10	10	10	10
2022	10	10	10	10
2023	10	10	10	10
2024	10	10	10	10
2025	10	10	10	10
2026	10	10	10	10
2027	10	10	10	10
2028	10	10	10	10
2029	10	10	10	10
2030	10	10	10	10

SUGAR BEET

Great Harpenden II, 1947

Design; Fertilizer Placement Series. 3 randomized blocks of 16 plots each.

Area of each plot; 0.00808 acre.

Treatments

Levels of fertilizer: None, $4\frac{1}{2}$, 9 cwt. per acre of National Granular Compound No. 2 (9% N, 7.5% P_2O_5 , 4.5% K_2O).

Methods of placement: Broadcast on flat and harrowed in, drilled in band in contact with seed, drilled in band 2 inches below seed, drilled in 2 bands 1 inch either side of and 1 inch below seed, drilled in 2 bands 2 inches either side of and 2 inches below seed.

Crop Notes

Seed drilled: May 10. Lifted: Nov. 11. Variety: Klein E. Previous crop: Barley.

Standard errors per plot:

Roots (washed), 1.21 tons per acre or 15.7%, 45 d.f.

Tops, 0.894 tons per acre or 14.9%, 45 d.f.

Sugar percentage, 0.565, 45 d.f.

Total sugar, 5.02 cwt. per acre or 17.2%, 45 d.f.

Plant number, 2.10 thousand per acre or 10.9%, 45 d.f.

P/2
Sugar Beet - Gt. Harpenden 1947

Fertilizer cwt/acre	Broadcast	Contact with seed	Band 2" below seed	1" below and 1" of either side of seed	2" below and 2" of either side of seed	Mean
Roots (washed): tons per acre ±0.698						
None						±0.285 6.51 ^a
4½	6.76 ^b	7.57	8.82	8.58	8.67	8.03
9	7.95 ^b	7.51	8.71	8.62	8.53	8.21
Mean ±0.494	7.35 ^a	7.54	8.77	9.10	8.60	7.71
Standard errors (a) 0.349 (b) 0.494						
Sugar Percentage ±0.326						
None						±0.133 19.02 ^c
4½	18.70 ^d	18.87	19.35	19.14	19.00	18.96
9	18.55 ^d	18.63	18.88	19.27	18.68	18.76
Mean ±0.231	18.62 ^c	18.75	19.11	19.21	18.84	18.90
Standard errors (c) 0.163 (d) 0.231						
Total sugar: cwt. per acre ±2.90						
None						±1.18 24.8 ^e
4½	25.3 ^f	28.8	34.1	36.7	33.1	30.6
9	29.5 ^f	28.0	32.9	33.2	31.9	30.8
Mean ±2.05	27.4 ^e	28.4	33.5	35.0	32.5	29.2
Standard errors (e) 1.45 (f) 2.05						
Tops: tons per acre ±0.516						
None						±0.211 4.30 ^g
4½	5.25 ^h	5.56	6.76	6.67	6.50	6.00
9	6.17 ^h	6.70	7.74	7.70	8.16	7.11
Mean 0.365	5.71 ^g	6.13	7.25	7.18	7.33	5.99
Standard errors (g) 0.258 (h) 0.365						
Plant number: thousands per acre ±1.21						
None						±0.496 18.3 ^j
4½	22.2 ^k	18.6	19.1	21.0	18.7	20.3
9	21.3 ^k	15.2	15.4	17.2	21.6	18.7
Mean ±0.858	21.7 ^j	16.9	17.3	19.1	20.2	19.2
Standard errors (j) 0.607 (k) 0.858						

SUGAR BEET

Long Hoos and Woburn Lansome, 1939

Effects of nitrogenous and mineral fertilizers.

Design; 5 x 5 lattice square design with 6 replicates at Rothamsted and 3 replicates at Woburn.

Area of each plot:

Rothamsted; 0.0111 acre

Woburn; 0.0133 acre

Treatments

Nitrogenous fertilizers: None, nitrate of soda, nitrate of lime, sulphate of ammonia and muriate of ammonia (0.6 cwt. N per acre).

Mineral fertilizers: None, high grade muriate of potash, high grade sulphate of potash (both at 2.0 cwt. K₂O per acre), salt (2.5 cwt. per acre) and sulphate of soda (6.9 cwt. per acre).

Basal manuring: Superphosphate; 0.5 cwt. P₂O₅ per acre.

Crop Notes

	Rothamsted	Woburn
Seed sown	May 8	May 10
Harvested	Nov 11	Oct. 30-Nov. 9
Variety	Kleinwanzleben	Kleinwanzleben
Previous crop	Wheat	Barley

Standard errors per plot

Sugar percentage: Rothamsted 0.390, 120 d.f.

Woburn 0.329, 120 d.f.

Total sugar: Rothamsted 3.24 cwt. per acre or 7.1%, 72 d.f.

Woburn 3.13 cwt. per acre or 7.2%, 72 d.f.

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Sugar Beet - Long Hoos & Lansome, 1939

Rothamsted

	None	Nitr. sod.	Nitr. lime	Sulph. amm.	Mur. amm.	Mean
Roots (washed): tons per acre						
None	11.80	13.83	13.88	13.19	14.09	13.35
Mur. pot.	11.42	14.03	14.22	13.03	13.55	13.25
Salt	11.51	14.10	14.28	13.12	14.08	13.42
Sulph. pot.	12.12	14.50	13.34	13.41	12.96	13.27
Sulph. sod.	11.26	14.44	14.36	14.03	14.08	13.63
Mean	11.62	14.18	14.01	13.36	13.75	13.38

Sugar percentage						
			±0.159			±0.071
None	16.88	16.58	16.97	16.79	17.02	16.85
Mur. pot.	16.99	17.01	17.07	17.11	17.06	17.05
Salt	17.04	17.30	17.19	17.10	16.84	17.09
Sulph. pot.	17.07	16.79	17.00	17.02	17.10	17.00
Sulph. sod.	16.88	17.17	16.73	16.68	17.02	16.90
Mean	16.97	16.97	16.99	16.94	17.01	16.98

Total sugar: cwt. per acre						
			±1.32			±0.59
None	39.4	46.0	46.9	44.6	46.8	44.7
Mur. pot.	39.2	47.7	47.1	44.4	47.3	45.1
Salt	38.3	48.4	48.1	46.8	47.6	45.8
Sulph. pot.	40.0	48.9	45.7	45.7	45.0	45.1
Sulph. sod.	38.7	49.3	48.1	47.3	48.4	46.4
Mean	39.1	48.1	47.2	45.8	47.0	45.4

Tops: tons per acre						
None	12.79	17.48	17.83	17.06	18.56	16.74
Mur. pot.	12.19	19.27	20.33	17.44	17.03	17.25
Salt	11.82	18.13	18.05	16.59	18.51	16.62
Sulph. pot.	11.89	18.63	16.43	16.32	17.40	16.13
Sulph. sod.	11.67	16.60	17.90	17.30	18.99	16.49
Mean	12.07	18.02	18.11	16.94	18.10	16.65

Plant number: thousands per acre						
None	29.3	30.3	29.0	29.5	29.7	29.6
Mur. pot.	29.9	30.4	30.6	30.9	29.6	30.3
Salt	30.6	30.3	29.4	30.1	30.3	30.1
Sulph. pot.	30.0	30.4	29.2	29.9	30.1	29.9
Sulph. sod.	29.5	30.0	30.2	29.4	30.3	29.9
Mean	29.9	30.3	29.7	30.0	30.0	30.0

	None	Nitr. sod.	Woburn Nitr. lime	Sulph. amm.	Mur. amm.	Mean
Roots (washed): tons per acre						
None	9.32	13.83	13.56	12.33	12.50	12.31
Mur. pot.	8.44	13.66	13.12	13.53	13.66	12.48
Salt	9.61	13.50	14.50	13.29	12.99	12.78
Sulph. pot.	8.27	13.39	14.42	11.61	13.96	12.33
Sulph. sod.	9.43	14.34	13.95	12.70	13.74	12.83
Mean	9.01	13.75	13.91	12.69	13.37	12.55
Sugar percentage						
			±0.190			±0.085
None	16.84	17.16	17.06	17.15	17.39	17.12
Mur. pot.	17.48	17.88	17.02	17.51	17.44	17.47
Salt	17.60	17.29	17.29	17.26	17.51	17.39
Sulph. pot.	17.11	17.33	17.18	17.09	17.56	17.25
Sulph. sod.	17.25	16.96	17.05	17.22	17.58	17.21
Mean	17.26	17.32	17.12	17.25	17.50	17.29
Total sugar: cwt. per acre						
			±1.80			±0.80
None	31.1	48.1	45.2	42.5	44.6	42.3
Mur. pot.	27.5	51.0	43.2	46.8	46.5	43.0
Salt	33.1	48.7	47.1	46.3	47.5	44.6
Sulph. pot.	27.1	47.3	48.3	43.2	48.4	42.8
Sulph. sod.	32.0	49.7	46.8	44.1	47.9	44.1
Mean	30.2	49.0	46.1	44.6	47.0	43.4
Tops: tons per acre						
None	8.36	12.91	13.67	11.79	12.06	11.76
Mur. pot.	7.15	13.07	15.00	12.43	11.87	11.90
Salt	8.47	12.13	14.16	12.41	12.13	11.86
Sulph. pot.	6.51	12.23	12.12	9.99	12.37	10.64
Sulph. sod.	7.15	13.27	12.30	10.87	12.89	11.30
Mean	7.53	12.72	13.45	11.50	12.26	11.49
Plant number: thousands per acre						
None	37.0	35.5	37.0	37.3	36.7	36.7
Mur. pot.	37.0	36.9	36.7	36.2	37.0	36.8
Salt	37.5	36.2	36.2	38.0	37.6	37.1
Sulph. pot.	37.8	37.4	36.8	35.7	37.6	37.1
Sulph. sod.	37.8	37.2	36.7	36.4	37.9	37.2
Mean	37.4	36.6	36.7	36.7	37.4	37.0

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SUGAR BEET

Long Hoos and Woburn Lansome, 1939

Effects of powdered and granulated fertilizer, of placing the fertilizer above the seed, below the seed or broadcast and of normal and intensive cultivation on seed bed. These and the next four experiments are discussed by E.W.Russell, B.A.Keen and H.H.Mann, "Studies in Soil Cultivation", J.Agric.Sci., 32, (1942), 330.

Design; 7 x 7 Latin square. Columns split for normal and intensive cultivation.

Area of each sub-plot;
 Rothamsted; 0.00172 acre
 Woburn; 0.00198 acre

Treatments

Fertilizer: Powdered, granular.
 Placed: Above seed, below seed, broadcast on seed bed.
 Cultivation: Intensive, normal hoeing between rows.
 Complete fertilizer contained 6.2% nitrogen, 6.4% water soluble phosphoric acid and 7.5% potash, and was applied at the rate of 10 cwt. per acre.

Crop Notes

	Seed sown	Harvested	Variety	Previous crop
Rothamsted	May 23	Nov. 28	Kühn	Wheat
Woburn	May 12	Nov. 17	Kleinwanzleben	Barley

Standard errors:

Rothamsted, Total sugar, per whole plot; 2.61 cwt. per acre or 7.35%, 30 d.f.
 per half column; 1.21 cwt. per acre or 3.42%, 6 d.f.
 Woburn, Total sugar, per whole plot; 3.61 cwt. per acre or 8.39%, 30 d.f.
 per half column; 1.48 cwt. per acre or 3.44%, 6 d.f.

Cultivation	Roots (washed) tons per acre	Sugar Percentage	Total sugar cwt. per acre	Tops tons per acre
<u>Rothamsted</u>				
Normal	10.48	17.02	±0.457 35.6	14.67
Intensive	10.36	17.07	35.4	14.52
<u>Woburn</u>				
Normal	11.29	17.81	±0.559 40.2	9.51
Intensive	12.95	17.68	45.8	11.56

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Fertilizer	Placed			Mean	Placed			Mean
	Broad-cast	Above seed	Under seed		Broad-cast	Above seed	Under seed	
<u>Rothamsted</u>								
	Roots (washed): tons per acre				Total sugar: cwt. per acre			
None				9.32				± 0.986 31.6a
Powdered	11.00	11.06	10.08	10.71	37.9	38.1	34.2	36.7
Granular	10.84	10.71	9.93	10.49	37.4	36.1	33.4	35.6
Mean	10.92	10.88	10.00	10.42	37.6 ^b	37.1 ^b	33.8 ^b	35.5
Standard error (a) 0.986. (b) 0.697								
	Sugar percentage				Tops: tons per acre			
None				16.91				11.76
Powdered	17.25	17.23	16.97	17.15	14.60	15.51	15.15	15.09
Granular	17.28	16.86	16.82	16.99	15.12	14.95	15.08	15.05
Mean	17.26	17.04	16.90	17.05	14.86	15.23	15.12	14.60
<u>Woburn</u>								
	Roots (washed): tons per acre				Total sugar: cwt. per acre			
None				8.64				± 1.36 30.3 ^c
Powdered	11.58	12.56	13.19	12.44	40.6	44.5	47.6	44.2
Granular	11.57	13.75	13.56	12.96	41.0	49.0	48.1	46.0
Mean	11.58	13.16	13.38	12.12	40.8 ^d	46.8 ^d	47.8 ^d	43.0
Standard error (c) 1.36 (d) 0.962								
	Sugar percentage				Tops: tons per acre			
None				17.62				7.63
Powdered	17.55	17.71	18.06	17.77	10.23	11.46	10.95	10.88
Granular	17.72	17.84	17.72	17.76	10.70	11.34	11.44	11.16
Mean	17.64	17.78	17.89	17.75	10.46	11.40	11.20	10.54

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SUGAR BEET

Great Harpenden, 1940

Woburn Butt Furlong, 1940

Little Hoos, 1941

Effects of sulphate of ammonia, superphosphate, muriate of potash and agricultural salt in all experiments, and of intensive cultivation at Woburn and Rothamsted in 1940, and of "gapping" at Rothamsted in 1940 and 1941, and of early and late cultivation at Rothamsted in 1941. These experiments form part of the countrywide Factory Sugar Beet Series of about 280 similar experiments. A report on the whole series is in preparation.

Designs; Woburn and Rothamsted 1940: 4 randomized blocks of 8 plots each, certain interactions being confounded between blocks. At Rothamsted, one quarter replicate of all treatment combinations.

Rothamsted 1941: 8 randomized blocks of 8 plots each, certain interactions being confounded between blocks. One quarter replicate of all treatment combinations.

Area of each plot;

Woburn 1940: 0.00463 acre.

Rothamsted 1940: 0.0152 acre.

Rothamsted 1941: 0.00952 acre.

Treatments

All experiments:

Sulphate of ammonia: None, 0.8 cwt. N per acre.

Superphosphate: None, 1.0 cwt. P₂O₅ per acre (P)

Muriate of potash: None, 1.2 cwt. K₂O per acre (K)

Agricultural salt: None, 5 cwt. per acre.

Woburn and Rothamsted 1940:

Cultivation: Normal and intensive (C).

Rothamsted 1940 and 1941:

Gapping: One third of each plot had applied to them one of four levels of artificial "gappiness". Of the plants remaining after singling a proportion was removed at random, the four levels being: None, 1/6, 1/3, 1/2.

Rothamsted 1941:

Early cultivation: Normal, additional cultivation before singling.

Late cultivation: Normal, additional cultivation after singling.

Crop Notes

	Seed sown	Harvested	Variety	Previous crop
Woburn, 1940	April 25	October 31	Kleinwanzleben	Barley
Rothamsted, 1940	May 20	December 9	Kleinwanzleben	Wheat
Rothamsted, 1941	May 6	Dec. 4-16	Kleinwanzleben E.	Wheat

Standard errors per plot:

	d. f.	Roots (washed)		Sugar Percent- age	Total Sugar		Tops		Plant no. thous. per acre	
		tons per acre	%		cwt. per acre	%	tons per acre	%	per acre	%
Woburn 1940	13	1.47	9.0	0.554	5.11	8.5	1.53	15.5	1.70	4.9
Rothamsted 1940:										
"ungapped"	13	2.18	18.2	0.308	7.71	18.1	1.93	19.0	1.83	6.3
"gapped"	13	1.26		0.471	4.38		1.35			
Rothamsted 1941:										
"ungapped"	26	0.595	6.3	0.198	2.12	6.3	0.973	11.6	1.43	4.6
"gapped"	22	0.864		0.223	3.06		1.02			

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Sugar Beet - Factory Series

Mean Resp.	Rothamsted 1940 Differential Responses									
	Sulph. Abs.	amm. Pres.	Super Abs.	Pres.	Mur. Abs.	Potash Pres.	Salt Abs.	Pres.	Cultivation Norm.	Int.

Roots (washed), tons per acre. Mean yield, 11.94											
	±0.769					±1.09					
Sulph. amm.	2.83	-	-	2.89	2.77	2.03	3.63	1.91	3.75	3.90	1.76
Super.	-0.29	-0.23	-0.35	-	-	-0.51	-0.07	0.15	-0.73	0.93	-1.51
Mur. Pot.	-0.48	-1.28	0.32	-0.70	-0.26	-	-	-0.39	-0.57	-1.56	0.60
Salt	-0.97	-1.89	-0.05	-0.53	-1.41	-0.88	-1.06	-	-	-1.86	-0.08
Int. Cultn.	0.47	1.54	-0.60	1.69	-0.75	-0.61	1.55	-0.42	1.36	-	-

Sugar Percentage. Mean, 17.82											
	±0.109					±0.154					
Sulph. amm.	-0.10	-	-	-0.17	-0.03	-0.11	-0.09	-0.11	-0.09	-0.09	-0.11
Super.	0.17	0.10	0.24	-	-	0.03	0.31	0.22	0.12	0.17	0.17
Mur. Pot.	0.11	0.10	0.12	-0.03	0.25	-	-	0.10	0.12	0.34	-0.12
Salt	0.19	0.18	0.20	0.24	0.14	0.18	0.20	-	-	0.22	0.16
Int. Cultn.	0.06	0.07	0.05	0.06	0.06	0.29	-0.17	0.09	0.03	-	-

Total Sugar, cwt. per acre. Mean yield, 42.5											
	±2.72					±3.85					
Sulph. amm.	9.9	-	-	9.9	9.9	6.9	12.9	6.5	13.3	13.7	6.1
Super.	-0.6	-0.6	-0.6	-	-	-1.7	0.5	1.1	-2.3	3.7	-4.9
Mur. Pot.	-1.5	-4.5	1.5	-2.6	-0.4	-	-	-1.1	-1.9	-4.8	1.8
Salt	-3.0	-6.4	0.4	-1.3	-4.7	-2.6	-3.4	-	-	-6.2	0.2
Int. Cultn.	1.9	5.7	-1.9	6.2	-2.4	-1.4	5.2	-1.3	5.1	-	-

Tops, tons per acre. Mean yield, 10.15											
	±0.684					±0.967					
Sulph. amm.	5.02	-	-	4.78	5.26	4.54	5.50	4.52	5.52	5.17	4.87
Super.	-0.38	-0.62	-0.14	-	-	0.09	-0.85	-0.39	-0.37	0.27	-1.03
Mur. Pot.	-0.16	-0.64	0.32	0.31	-0.63	-	-	0.44	-0.76	-0.96	0.64
Salt	-0.38	-0.88	0.12	-0.39	-0.37	0.22	-0.98	-	-	-1.09	0.33
Int. Cultn.	1.05	1.20	0.90	1.70	0.40	0.25	1.85	0.34	1.76	-	-

Plant number, thousands per acre. Mean, 40.2											
	±0.65					±0.91					
Sulph. amm.	-0.2	-	-	0.5	-0.9	-1.0	0.6	0.7	-1.1	1.0	-1.4
Super.	-0.3	0.4	-1.0	-	-	-4.7	4.1	-0.2	-0.4	0.1	-0.7
Mur. Pot.	-0.3	-1.1	0.5	-4.7	4.1	-	-	0.6	-1.2	-2.9	2.3
Salt	-0.3	0.6	-1.2	-0.2	-0.4	0.6	-1.2	-	-	0.0	-0.6
Int. Cultn.	1.1	2.3	-0.1	1.5	0.7	-1.5	3.7	1.4	0.8	-	-

The above figures derive from the "ungapped" portions of plots.

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Effects of Artificial Gapping

Proportion of plants removed	Roots (washed), tons/acre	Sugar percentage	Total Sugar, cwt./acre	Tops, tons/acre	Plant number, thous./acre
None	12.19	17.82	43.4	10.39	28.5
1/6	12.46	17.75	44.2	10.29	24.7
1/3	12.02	17.53	42.2	10.42	20.6
1/2	8.81	17.49	30.7	8.57	16.3
	±0.444	±0.166	±1.55	±0.478	

The $(0 + 1/6 - 1/3 - 1/2)$, $(0 - 1/6 - 1/3 + 1/2)$ and $(0 - 1/6 + 1/3 - 1/2)$ gapping effects were confounded with the treatment interactions FK, FC, KC respectively in the "gapped" portion of the experiment.

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Sugar Beet - Factory Series

Woburn 1940

Differential Responses

	Mean Resp.	Sulph. amm.		Super		Mur. Potash		Salt		Cultivation	
		Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	Norm.	Int.

Roots (washed), tons per acre. Mean yield 16.37

	±0.529	±0.735									
Sulph. amm.	5.56	-	-	4.82	6.30	5.56	5.56	5.34	5.78	7.10	4.02
Super.	-0.31	-1.05	0.43	-	-	-0.97	0.35	-0.01	-0.61	0.45	-1.07
Mur. Pot.	-0.81	-0.81	-0.81	-1.47	-0.15	-	-	-1.12	-0.50	-1.56	-0.06
Salt	0.11	-0.11	0.33	0.41	-0.19	-0.20	0.42	-	-	-0.18	0.40
Int. Cultn.	0.76	2.30	-0.78	1.52	0.00	0.01	1.51	0.47	1.05	-	-

Sugar Percentage. Mean 18.29

	±0.196	±0.277									
Sulph. amm.	-0.23	-	-	-0.15	-0.31	-0.25	-0.21	-0.24	-0.22	-0.62	0.16
Super.	0.38	0.46	0.30	-	-	0.47	0.29	0.45	0.31	0.33	0.43
Mur. Pot.	0.45	0.43	0.47	0.54	0.36	-	-	0.49	0.41	0.24	0.66
Salt	0.02	0.01	0.03	0.09	-0.05	0.06	-0.02	-	-	0.08	-0.04
Int. Cultn.	-0.02	-0.41	0.37	-0.07	0.03	-0.23	0.19	0.04	-0.08	-	-

Total Sugar, cwt. per acre. Mean yield 59.8

	±1.81	±2.56									
Sulph. amm.	19.6	-	-	17.1	22.1	19.4	19.8	18.8	20.4	24.1	15.1
Super.	-0.1	-2.6	2.4	-	-	-2.0	1.8	1.4	-1.6	2.3	-2.5
Mur. Pot.	-1.5	-1.7	-1.3	-3.4	0.4	-	-	-2.5	-0.5	-5.1	2.1
Salt	0.5	-0.3	1.3	2.0	-1.0	-0.5	1.5	-	-	-0.4	1.4
Int. Cultn.	3.0	7.5	-1.5	5.4	0.6	-0.6	6.6	2.1	3.9	-	-

Tops, tons per acre. Mean yield 9.84

	±0.541	±0.765									
Sulph. amm.	4.76	-	-	4.16	5.36	4.56	4.96	3.64	5.88	5.69	3.83
Super.	-0.29	-0.89	0.31	-	-	-0.92	0.34	0.00	-0.58	0.39	-0.97
Mur. Pot.	-0.83	-1.03	-0.63	-1.46	-0.20	-	-	-0.84	-0.82	-1.44	-0.22
Salt	0.83	-0.29	1.95	1.12	0.54	0.82	0.84	-	-	0.36	1.30
Int. Cultn.	0.81	1.74	-0.12	1.49	0.13	0.20	1.42	0.34	1.28	-	-

Plant number, thousands per acre. Mean 34.5

	±0.60	±0.85									
Sulph. amm.	-2.2	-	-	-2.3	-2.1	-1.5	-2.9	-2.6	-1.8	-1.3	-3.1
Super.	1.0	0.9	1.1	-	-	1.1	0.9	1.3	0.7	0.6	1.4
Mur. Pot.	-0.5	0.2	-1.2	-0.4	-0.6	-	-	-0.7	-0.3	0.2	-1.2
Salt	-0.6	-1.0	-0.2	-0.3	-0.9	-0.8	-0.4	-	-	-1.2	0.0
Int. Cultn.	-1.6	-0.7	-2.5	-2.0	-1.2	-0.9	-2.3	-2.2	-1.0	-	-

Rothamsted 1941														
Differential Responses														
Mean Resp.	Sulph. amm.		Super		Mur. Potash		Salt		Cultivation None		Cultivation Early		Cultivation Late	
	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	None	Early	None	Early	None	Late
Roots (washed), tons per acre. Mean yield 9.38														
±0.149														
Sulph. amm.	-	-	3.58	4.18	3.77	3.99	3.45	4.32	4.10	3.67	3.50	4.27	3.50	4.27
Super.	-0.08	0.52	-	-	0.21	0.23	0.06	0.38	-0.19	0.64	-0.05	0.50	-0.05	0.50
Mur. Pot.	0.42	0.31	0.41	0.43	-	-	0.84	0.00	0.59	0.25	0.60	0.24	0.60	0.24
Salt	0.46	0.90	0.30	0.62	0.89	0.04	-	-	0.52	0.41	0.46	0.47	0.46	0.47
Cult. Early	0.70	0.49	0.29	1.12	0.87	0.53	0.76	0.65	-	-	0.73	0.67	0.73	0.67
Cult. Late	-0.30	0.08	-0.58	-0.03	-0.12	-0.48	-0.31	-0.29	-0.27	-0.33	-	-	-	-
Mean yield 9.38 ±0.210														
Sugar percentage. Mean, 17.77														
±0.049														
Sulph. amm.	-	-	0.05	-0.04	0.05	-0.04	-0.04	0.06	0.06	-0.05	0.08	-0.07	0.08	-0.07
Super.	0.02	-0.03	-	-	0.05	-0.02	0.09	-0.06	0.06	-0.02	0.13	-0.10	0.13	-0.10
Mur. Pot.	0.10	0.05	0.13	0.07	-	-	0.21	-0.02	0.18	0.02	0.08	0.11	0.08	0.11
Salt	0.19	0.14	0.27	0.12	0.31	0.08	-	-	0.16	0.23	0.31	0.08	0.31	0.08
Cult. Early	-0.03	0.08	0.01	-0.07	0.05	-0.11	-0.06	0.00	-	-	-0.07	0.01	-0.07	0.01
Cult. Late	0.05	0.13	0.17	-0.06	0.04	0.07	0.17	-0.06	0.02	0.09	-	-	-	-
Total Sugar, cwt. per acre. Mean yield, 33.3														
±0.53														
Sulph. amm.	-	-	12.8	14.8	13.5	14.2	12.1	15.5	14.7	12.9	12.6	15.1	12.6	15.1
Super.	-0.2	1.8	-	-	0.8	0.8	0.3	1.2	-0.7	2.3	0.1	1.5	0.1	1.5
Mur. Pot.	1.6	2.0	1.7	1.6	-	-	3.3	-0.1	2.3	0.9	2.2	1.0	2.2	1.0
Salt	2.0	3.8	1.6	2.5	3.7	0.3	-	-	2.1	1.9	2.2	1.8	2.2	1.8
Cult. Early	2.4	1.6	0.9	3.9	3.2	1.7	2.5	2.3	-	-	2.4	2.4	2.4	2.4
Cult. Late	-1.0	0.3	-1.7	-0.3	-0.4	-1.6	-0.8	-1.2	-1.0	-1.0	-	-	-	-

The above figures derive from the "ungapped" portions of plots.

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Sugar Beet - Factory Series

Rothamsted 1941												
Differential Responses												
Mean Resp.	Sulph. amm.		Super		Mur. Potash		Salt		Cultivation		Cultivation Late	
	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	None	Early		
	Tops, tons per acre. Mean yield, 8.39											
	±0.243											
Sulph. amm.	5.44		5.58	5.30	5.47	5.42	5.30	5.59	5.35	5.54	5.19	5.70
Super.	-0.36	-0.22	-	-	-0.37	-0.35	-0.46	-0.25	-0.45	-0.26	-0.83	0.11
Mur. Pot.	0.52	0.54	0.51	0.53	-	-	0.80	0.25	0.69	0.35	0.49	0.55
Salt	0.26	0.11	0.16	0.36	0.54	-0.01	-	-	0.20	0.33	0.34	0.18
Cult. Early	0.78	0.69	0.69	0.87	0.95	0.61	0.72	0.84	-	-	0.80	0.76
Cult. Late	-0.20	-0.46	-0.68	0.27	-0.24	-0.17	-0.13	-0.28	-0.18	-0.23	-	-
	±0.344											
	Plant number, thousands per acre. Mean, 31.0											
	±0.50											
Sulph. amm.	-0.36	-	-0.4	-0.4	-0.3	-0.5	-0.8	0.0	0.2	-0.9	0.0	-0.7
Super.	0.4	0.4	-	-	0.7	0.1	0.7	0.0	-0.1	0.8	-0.1	0.8
Mur. Pot.	0.2	0.3	0.5	-0.1	-	-	0.0	0.4	0.3	0.2	-0.1	0.5
Salt	-0.5	-0.9	-0.2	-0.8	-0.7	-0.3	-	-	-0.6	-0.4	-1.0	0.0
Cult. Early	-1.1	-0.5	-1.5	-0.8	-1.0	-1.1	-1.2	-1.0	-	-	-0.8	-1.4
Cult. Late	0.3	0.7	-0.1	0.8	0.0	0.6	-0.2	0.8	0.6	0.0	-	-
The above figures derive from the "ungapped" portions of plots												
Effects of Artificial Gapping												
Proportion of plants removed	Roots (washed), tons per acre		Sugar percentage		Total Sugar, cwt. per acre		Tops per acre		Plant number, thous. per acre			
None	10.42	17.83	37.1	9.42	31.3							
1/6	9.45	17.81	33.6	9.22	26.7							
1/3	8.82	17.68	31.2	8.78	23.1							
1/2	7.99	17.60	28.1	8.45	19.0							
	±0.216		±0.056		±0.77		±0.254					

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SUGAR BEET

Woburn Butt Close 1941

Effects of early and late weeding, hoeing and pulling weeds and of sulphate of ammonia.

Design; 6 randomized blocks of 6 plots each. Certain interactions confounded between blocks.

Area of each plot; 0.00333 acre.

Treatments

Weeding: Early (before singling), late (after singling), early and late.
Method: pulled, hoed.

Sulphate of ammonia: None, 0.8 cwt.N per acre.

Basal manuring: 1.0 cwt. P₂O₅ per acre as superphosphate,
1.2 cwt. K₂O per acre as sulphate of potash and 5 cwt. salt per acre.

Crop Notes

Sown, May 9. Lifted, Nov. 12. Variety, Kleinwanzleben E. Previous crop, Barley.

Standard errors per plot:

Roots (washed): 0.869 tons per acre or 7.4%, 19 d.f.

Sugar percentage: 0.493, 19 d.f.

Total sugar: 3.95 cwt. per acre or 8.5%, 19 d.f.

Tops: 1.08 tons per acre or 9.2%, 19 d.f.

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Sugar Beet - Butt Close 1941

Time of weeding	Early	Late	Early and Late	Mean	No nitrogen	Nitrogen
Roots (washed): tons per acre						
		± 0.355		± 0.205	± 0.290	
Pulled	11.45	10.90	11.96	11.44	9.02	13.86
Hoed	12.09	11.52	12.32	11.98	10.17	13.79
No nitrogen	9.66	8.37	10.74	9.59		
Nitrogen	13.88	14.05	13.54	13.83		
Mean ± 0.251	11.77	11.21	12.14	11.71		
Sugar percentage						
		± 0.201		± 0.116	± 0.164	
Pulled	19.99	20.13	19.92	20.01	20.10	19.94
Hoed	19.83	19.85	19.54	19.74	19.70	19.78
No nitrogen	20.03	19.87	19.80	19.90		
Nitrogen	19.79	20.11	19.66	19.86		
Mean ± 0.142	19.91	19.99	19.73	19.88		
Total sugar: cwt. per acre						
		± 1.61		± 0.931	± 1.32	
Pulled	45.7	43.9	47.7	45.8	36.2	55.3
Hoed	47.9	45.7	48.2	47.2	40.0	54.5
No nitrogen	38.6	33.2	42.5	38.1		
Nitrogen	55.0	56.4	53.3	54.9		
Mean ± 1.14	46.8	44.8	47.9	46.5		
Tops: tons per acre						
		± 0.441		± 0.255	± 0.360	
Pulled	9.80	11.10	11.99	10.96	7.69	14.23
Hoed	11.96	12.54	12.63	12.38	8.93	15.83
No nitrogen	7.72	7.97	9.24	8.31		
Nitrogen	14.04	15.67	15.38	15.03		
Mean ± 0.312	10.88	11.82	12.31	11.67		

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SUGAR BEET SEED

Woburn Butt Close 1942

Woburn Lansome 1943

Effects of dung, sulphate of ammonia, superphosphate, muriate of potash and salt, and of time of application of sulphate of ammonia.

Design: 4 randomized blocks of 8 plots each, certain interactions being confounded between blocks. One half replicate of all treatment combinations.

Area of each plot 1942: 0.0118 acre
1943: 0.0103 acre.

Treatments

Dung: None, 10 tons per acre.
Sulphate of ammonia: None, 0.4 cwt. N per acre.
Superphosphate: None, 0.6 cwt. P_2O_5 per acre.
Muriate of potash: None, 0.75 cwt. K_2O per acre.
Agricultural salt: None, 3.0 cwt. per acre.
Time of application of sulphate of ammonia: Early (applied at transplanting), Late (top dressing; June 3 in 1942, May 17 in 1943).

Crop Notes

1942: Seed sown in seed bed: 21/7/41. Stocklings planted out: March 19. Cut: Sept 14. Variety: Mother seed of Klein E.
1943: Stocklings planted: Feb. 26. Harvested Sept. 3.
Variety: Kleinwanzleben E.

Standard errors per plot:

Dressed seed: 1942: 2.68 cwt. per acre or 19.7%, 13 d.f.
1943: 2.18 cwt. per acre or 19.7%, 13 d.f.
Percentage germination in 6 days, 1942: 5.88, 13 d.f.
1943: 6.66, 13 d.f.
Percentage final germination, 1942: 5.44, 13 d.f.
1943: 5.80, 13 d.f.

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Sugar Beet Seed.

1942, Differential responses

Resp. to	Mean	Dung		Sulph. amm.		Super		Mur. pot.		Salt	
		Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent	Present
Dressed Seed, cwt. per acre, Mean yield, 13.6											
	±0.95										
Dung	3.8	-	-	3.8	3.8	2.9	4.7	4.9	2.7	3.9	3.7
Sulph. amm.	2.4	2.4	-	-	-	0.7	4.1	1.9	2.9	1.2	3.6
Super.	0.4	-0.5	1.3	2.1	-	-	-	1.3	-0.5	1.0	-0.2
Mur. pot.	0.7	1.8	-0.4	1.2	1.6	-0.2	-	-	-	1.0	0.4
Salt	1.6	1.7	1.5	2.8	2.2	1.0	1.9	1.3	-	-	-
Percentage germination in 6 days: Mean 74.5											
	±2.08										
Dung	2.9	-	-	5.7	0.1	1.3	4.5	3.1	2.7	2.3	3.5
Sulph. amm.	-3.1	-0.3	-5.9	-	-	-2.9	-3.3	-6.9	0.7	-4.9	-1.3
Super.	-0.7	-2.3	0.9	-0.5	-0.9	-	-	-1.6	0.2	-1.4	0.0
Mur. pot.	0.1	0.3	-0.1	-3.7	3.9	-0.8	1.0	-	-	-2.3	2.5
Salt	1.1	0.5	1.7	-0.7	2.9	0.4	1.8	-1.3	3.5	-	-
Final percentage germination: Mean 79.0											
	±1.92										
Dung	3.1	-	-	5.3	0.9	1.8	4.4	2.5	3.7	1.3	4.9
Sulph. amm.	-1.9	0.3	-4.1	-	-	-1.0	-2.8	-5.2	1.4	-3.7	-0.1
Super.	-0.7	-2.0	0.6	0.2	-1.6	-	-	-0.8	-0.6	-2.0	0.6
Mur. pot.	0.1	-0.5	0.7	-3.2	3.4	0.0	0.2	-	-	-2.2	2.4
Salt	1.1	-0.7	2.9	-0.7	2.9	-0.2	2.4	-1.2	3.4	-	-
Application of sulph. amm. Seed in 6 days final											
				±0.95				±2.08			
Early				14.7				70.8			75.6
Late				14.9				75.1			80.5

1943 Differential responses

Resp. to	Mean	Dung		Sulph. amm.		Super		Mur. pot.		Salt	
		Absent	Present	Absent	Present	Absent	Present	Absent	Present	Absent	Present
Dressed Seed, cwt. per acre Mean yield, 11.1											
	±0.77										
Dung	-1.0	-	-	-0.4	-1.6	-0.1	-1.9	-0.9	-1.1	-1.2	-0.8
Sulph. amm.	1.9	2.5	1.3	-	-	1.9	1.9	2.0	1.8	1.0	2.8
Super.	-0.1	0.8	-1.0	-0.1	-0.1	-	-	-0.9	0.7	-0.3	0.1
Mur. pot.	0.5	0.6	0.4	0.6	0.4	-0.3	1.3	-	-	0.8	0.2
Salt	1.5	1.3	1.7	0.6	2.4	1.3	1.7	1.8	1.2	-	-
Germination Percentage in Six Days: Mean 75.4											
	±2.36										
Dung	1.8	-	-	4.6	-1.0	3.4	0.2	2.7	0.9	2.2	1.4
Sulph. amm.	-0.6	2.2	-3.4	-	-	2.2	-3.4	0.2	-1.4	-0.1	-1.1
Super.	1.0	2.6	-0.6	3.8	-1.8	-	-	1.4	0.6	2.9	-0.9
Mur. pot.	-0.2	0.7	-1.1	0.6	-1.0	0.2	-0.6	-	-	0.9	-1.3
Salt	0.0	0.4	-0.4	0.5	-0.5	1.9	-1.9	1.1	-1.1	-	-
Germination Percentage Final: Mean 79.3											
	±2.05										
Dung	1.3	-	-	4.0	-1.4	2.5	0.1	2.1	0.5	2.1	0.5
Sulph. amm.	-1.7	1.0	-4.4	-	-	0.7	-4.1	-1.1	-2.3	-0.6	-2.8
Super.	1.1	2.3	-0.1	3.5	-1.3	-	-	0.7	1.5	2.2	0.0
Mur. pot.	0.2	1.0	-0.6	0.8	-0.4	-0.2	0.6	-	-	1.9	-1.5
Salt	-0.1	0.7	-0.9	1.0	-1.2	1.0	-1.2	1.6	-1.8	-	-
Application of sulph. amm. Seed cwt. per acre Percentage germination six days final											
	±0.77										
Early				±0.77				±2.36			±2.05
Late				13.0				77.2			80.5
				11.0				73.0			76.4

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SUGAR BEET

Woburn Butt Furlong 1943

Effects of weeding and levels of nitrogen.

Design: 6 randomized blocks of 6 plots each, certain interactions being confounded with block differences. Notes on the development of the crop were made by the Physics Dept.

Area of each plot: 0.0033 acre.

Treatments

Weeding: Minimum, early intensive (up to 2 or 3 weeks after singling), continuous intensive (throughout season).

Weeds removed by: Pulling, hoeing.

Sulphate of ammonia: None, 0.4, 0.8 cwt. N per acre.

Basal manuring: 3 cwt. agricultural salt per acre.

Crop Notes

Sown: April 13. Lifted: Nov. 23. Variety: Kleinwanzleben E.
previous crop: Barley.

Standard errors per plot: Roots (washed) 0.973 tons per acre or 2.0%, 13 d.f.
Tops, 0.964 tons per acre or 15.9%, 13 d.f.

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Weeding	Sulph. amm. cwt. N per acre			Weeds		Mean
	0	0.4	0.8	Pulled	Hoed	
Roots (washed): tons per acre						
	± 0.520			± 0.397		± 0.281
Minimum	6.26	8.89	12.87	9.89	8.79	9.34
Early intensive	8.72	12.18	13.38	11.25	11.61	11.43
Continuous intensive	9.56	11.77	14.03	11.96	11.61	11.79
Mean	8.18	10.95	13.43	11.03	10.67	10.85
	± 0.281			± 0.230		
Pulled	8.55	10.87	13.68			
Hoed ± 0.397	7.81	11.03	13.17			
Tops: tons per acre						
	± 0.515			± 0.394		± 0.279
Minimum	3.82	5.15	7.77	5.96	5.20	5.58
Early intensive	4.53	6.36	7.52	6.00	6.27	6.14
Continuous intensive	4.88	6.67	8.01	6.14	6.90	6.52
Mean	4.41	6.06	7.77	6.03	6.12	6.08
	± 0.279			± 0.228		
Pulled ± 0.394	4.78	5.89	7.43			
Hoed	4.04	6.23	8.10			
Sugar Percentage						
Minimum	18.97	19.14	19.32	19.10	19.18	19.14
Early intensive	18.69	19.24	18.50	18.84	18.79	18.81
Continuous intensive	19.20	19.06	18.91	18.89	19.22	19.06
Mean	18.95	19.15	18.91	18.94	19.06	19.00
Pulled	18.98	19.12	18.73			
Hoed	18.93	19.17	19.10			
Total Sugar: cwt. per acre						
Minimum	23.8	34.0	49.7	37.8	33.7	35.8
Early intensive	32.6	46.9	49.5	42.4	43.6	43.0
Continuous intensive	36.7	44.9	53.1	45.2	44.6	44.9
Mean	31.0	41.9	50.8	41.8	40.6	41.2
Pulled	32.5	41.6	51.2			
Hoed	29.6	42.3	50.3			

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SUGAR BEET

Woburn - Butt Close 1944

Effects of intensive hoeing and of sulphate of ammonia. Notes on the development of the crop were made by the Physics Dept.

Design: 2 randomized blocks of 9 plots each.

Area of each plot (after rejecting edge rows): 0.0033 acre.

Treatments

Hoeing: Till singling, till 2 weeks after singling, throughout the season.
Sulphate of ammonia: None, 0.4 and 0.8 cwt. per acre.

Basal Manuring: 3 cwt. agricultural salt per acre

Crop Notes

Sown: April 29. Lifted: Dec. 4. Variety: Klein. Previous crop: Barley.

Standard errors per plot: Roots (washed), 1.41 tons per acre or 9.0%, 8 d.f.
Sugar percentage, 0.550, 8 d.f.
Total sugar, 5.20 cwt. per acre or 9.6%, 8 d.f.
Tops, 1.46 tons per acre or 10.0%, 8 d.f.

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Hoeing	Sulph. amm. cwt. N per acre			Mean
	0	0.4	0.8	
Roots (washed): tons per acre				
		± 1.03		± 0.58
Till singling	14.00	15.54	16.27	15.27
Till 2 weeks after singling	14.73	15.80	17.34	15.96
Throughout season	14.60	16.67	16.00	15.76
Mean ± 0.58	14.44	16.00	16.54	15.66
Sugar Percentage				
		± 0.39		± 0.22
Till singling	16.68	17.48	17.22	17.13
Till 2 weeks after singling	17.16	17.52	16.85	17.18
Throughout season	17.05	17.84	17.24	17.38
Mean ± 0.22	16.96	17.61	17.10	17.22
Total sugar: cwt. per acre				
		± 3.7		± 2.1
Till singling	47.0	54.2	56.1	52.4
Till 2 weeks after singling	50.6	55.4	58.3	54.8
Throughout season	49.7	59.5	55.2	54.8
Mean ± 2.1	49.1	56.4	56.5	54.0
Tops: tons per acre				
		± 1.0		± 0.60
Till singling	11.32	12.39	14.40	12.70
Till 2 weeks after singling	14.60	16.00	16.81	15.80
Throughout season	15.33	14.60	16.21	15.39
Mean ± 0.60	13.75	14.33	15.81	14.63

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SUGAR BEET

Sawyers 1944

Effect of virus infection and manuring of seed crop on the subsequent crop of beet.

Design: 8 randomized blocks of 8 plots, certain second and third order interactions being confounded with block differences.

Area of each plot: 0.0033 acre.

Treatments.

- (a) Applied to the seed crop from which the seed for this experiment was grown in 1943
- Sulphate of ammonia: None, 0.8 cwt. N per acre
 - Superphosphate: None, 1.0 cwt. P_2O_5 per acre
 - Muriate of potash: None, 1.2 cwt. $\frac{5}{2}K_2O$ per acre
 - Agricultural Salt: None, 5 cwt. per acre
 - Virus: Not infected and infected
- (b) Applied in the seed bed in 1944
- Complete fertilizer: None, 17 cwt. per acre containing:-
 - Sulphate of ammonia: 0.8 cwt. N per acre
 - Superphosphate: 1.0 cwt. P_2O_5 per acre
 - Muriate of potash: 1.2 cwt. $\frac{5}{2}K_2O$ per acre
 - Agricultural Salt: 5 cwt. per acre.

Crop Notes

Sown: May 9. Lifted: Nov. 23. Variety: Kleinwanzleben E. Previous Crop: Wheat.

Standard errors per plot: Roots (washed) (adjusted for plant number)
0.89 tons per acre or 14.9%, 18 d.f.
Sugar Percentage, 0.477, 19 d.f.
Total sugar (adjusted for plant number)
2.61 cwt. per acre or 15.3%, 18 d.f.
Tops (adjusted for plant number) 1.60 tons per
acre or 9.6%, 18 d.f.
Plant number, 2.65 thousands per acre or 10.4%,
19 d.f.

The effects of the (a) treatments have been adjusted for variations in the plant numbers on the assumption that, since the seed-rate for the beet crop was constant, these variations are not caused by the treatments. The effects of the (b) treatment are not so adjusted.

Response to	Differential Responses to Fertilizers and Infection											
	Mean	Sulph. of amm. Abs. Pres.	Super-phosphate Abs. Pres.	Mur. of pot. Abs. Pres.	Salt Abs. Pres.	Virus infection Abs. Pres.	Comp. fert. Abs. Pres.	Sulph. of amm. Abs. Pres.	Super-phosphate Abs. Pres.	Mur. of pot. Abs. Pres.	Salt Abs. Pres.	Virus infection Abs. Pres.
Roots (washed) tons per acre Mean yield 5.97 ±0.32												
Sulph. of amm.	0.32	-	0.84	-0.20	0.55	0.09	-0.43	1.07	0.35	0.29	0.40	0.24
Superphosphate	-0.12	0.40	-	-	-0.23	-0.01	-0.30	0.06	0.19	-0.43	-0.05	-0.19
Mur. of pot.	0.18	0.41	0.07	0.29	-	-	-0.10	0.46	0.13	0.23	0.05	0.31
Salt	-0.11	-0.86	-0.29	0.07	-0.39	0.17	-	-	-0.10	-0.12	-0.17	-0.05
Virus infection	-0.44	-0.41	-0.13	-0.75	-0.49	-0.39	-0.43	-0.45	-	-	-0.17	-0.71
Comp. fert.	1.23 ^a	1.31	1.30	1.16	1.10	1.36	1.17	1.29	1.50	0.96	-	-
Sugar Percentage Mean 14.26 ±0.17												
Sulph. of amm.	0.12	-	0.27	-0.03	0.03	0.21	0.06	0.18	0.22	0.02	0.21	0.03
Superphosphate	-0.01	0.14	-	-	0.38	-0.40	-0.04	0.02	0.13	-0.15	0.06	-0.08
Mur. of pot.	-0.18	-0.27	0.21	-0.57	-	-	-0.16	-0.20	-0.20	-0.16	-0.16	-0.20
Salt	0.17	0.11	0.14	0.20	0.19	0.15	-	-	0.16	0.18	0.10	0.24
Virus infection	0.00	0.10	0.14	-0.14	-0.02	0.02	-0.01	0.01	-	-	0.01	-0.01
Comp. fert.	-0.38	-0.29	-0.31	-0.45	-0.36	-0.40	-0.45	-0.31	-0.37	-0.39	-	-
Total Sugar, cwt. per acre Mean yield 17.0 ±0.92												
Sulph. of amm.	1.0	-	2.6	-0.6	1.5	0.5	-1.2	3.2	1.2	0.8	1.4	0.6
Superphosphate	-0.8	0.8	-	-	-0.7	-0.9	-1.2	-0.4	0.3	-1.9	-0.6	-1.0
Mur. of pot.	0.3	0.8	0.4	0.2	-	-	-0.4	1.0	0.1	0.5	0.0	0.6
Salt	-0.1	-2.3	-0.5	0.3	-0.8	0.6	-	-	-0.1	-0.1	-0.4	0.2
Virus infection	-1.2 ^b	-1.0	-0.1	-2.3	-1.4	-1.0	-1.2	-1.2	-	-	-0.4	-2.0
Comp. fert.	3.0	3.4	3.2	2.8	2.7	3.3	2.7	3.3	3.8	2.2	-	-
Standard errors (a) 0.26 (b) 0.76												

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	Differential Responses to Fertilizers and Infection										Sugar Beet	
	Sulph. of amm.		Super phosphate		Mur. of pot.		Salt		Virus infection		Comp. fert.	
	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.
Mean	Tops, tons per acre. Mean Yield 16.68											
	±0.40											
Sulph. of amm.	-	-	0.57	1.03	0.86	0.74	-1.25	2.85	0.99	0.61	0.59	1.01
Superphosphate	-0.38	0.08	-	-	0.16	-0.46	-1.16	0.86	0.25	-0.55	-0.25	-0.05
Mur. of pot.	0.68	0.56	0.93	0.31	-	-	0.23	1.01	0.62	0.62	0.14	1.10
Salt	-2.51	1.59	-1.47	0.55	-0.85	-0.07	-	-	-0.53	-0.39	-0.87	-0.05
Virus infection	-0.91	-1.29	-0.70	-1.50	-1.10	-1.10	-1.17	-1.03	-	-	-0.45	-1.75
Comp.fert. ±0.65	7.45	7.87	7.56	7.76	7.18	8.14	7.25	8.07	8.31	7.01	-	-
	±0.57											
	Plant Number, thousands per acre. Mean 25.5											
	±0.66											
Sulph. of amm.	-	-	0.5	-1.5	-0.2	-0.8	-0.7	-0.3	-0.5	-0.5	-1.1	0.1
Superphosphate	1.9	-0.1	-	-	0.8	1.0	0.4	1.4	0.7	1.1	1.4	0.4
Mur. of pot.	-0.5	-1.1	-0.9	-0.7	-	-	-1.4	-0.2	-0.2	-1.4	-1.4	-0.2
Salt	-0.2	0.2	-0.5	0.5	-0.6	0.6	-	-	0.2	-0.2	0.4	-0.4
Virus infection	0.0	0.0	-0.2	0.2	0.6	-0.6	0.2	-0.2	-	-	0.4	-0.4
Comp. fert.	-3.3	-2.1	-2.2	-3.2	-3.3	-2.1	-2.3	-3.1	-2.3	-3.1	-	-
	±0.94											

Standard error: (a) 0.46.

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