

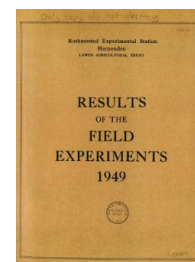
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Yields of the Field Experiments 1949

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49/DA/1 Irrigation - Kasgravo - Sugar Beet

49/DA/1 Irrigation - Kasgravo - Sugar Beet, Rothamsted Research (1950) Yields Of The Field Experiments 1949, pp 91 - 93

49/Da/i.1

SUGAR BEET

The comparison of different rates and methods of irrigation and the effects of three levels of nitrogen.

Milford, Surrey - 1949

System of replication: 6 X 6 Latin Square, plots being split into 4 for the application of nitrochalk.

Area of each sub-plot: 0.0156 acre. Area harvested: 0.00663 acre.

Treatments.

Whole plots. Irrigation: None (duplicate plots); restricted, based on weather data ($6\frac{1}{2}$ ""); restricted at higher level ($8\frac{1}{2}$ ""); full, as decided by farmer (13""); full, with Chilean potash nitrate (16% N, 16% K₂O) in solution 1 in 10,000 (12"").

Sub-plots. Nitrochalk: None, 0.3, 0.6, 0.9 cwt N per acre.

Basal manuring: Compound fertilizer (7% N, 7% P₂O₅, 10.5% K₂O): 6 cwt per acre.

Compound fertilizer (13% P₂O₅, 13% K₂O): 2 cwt per acre.

Salt: $5\frac{1}{2}$ cwt per acre.

Cultivations, etc.: Ploughed and subsoiled: early winter.

Salt applied: Mar 16. Both compound fertilizers and nitrochalk applied: Apr 4. Seed drilled: Apr 11. Singled: May 3. Harvested: Oct 31. Variety: Klein E. Previous crop: Early potatoes, followed by autumn lettuce.

Standard errors per plot:

Total sugar	whole plot,	3.27 cwt per acre or 8.2%
	sub-plot,	3.61 cwt per acre or 9.1%
Roots (washed),	whole plot,	1.02 tons per acre or 6.3%
	sub-plot,	1.34 tons per acre or 8.2%
Sugar percentage,	whole plot,	0.324
	sub-plot,	0.385
Tops,	whole plot,	1.08 tons per acre or 5.7%
	sub-plot,	1.61 tons per acre or 8.5%
Plant number,	whole plot,	0.808 thousands per acre or 2.2%
	sub-plot,	1.37 thousands per acre or 3.6%
Noxious nitrogen,	whole plot,	7.98
	sub-plot,	10.3

All whole plot standard errors estimated from 21 d.f.

All sub-plot standard errors estimated from 93 d.f.

49/Da/1.2

Cwt N per acre including basal	Irrigation: inches					Mean
	0	6½	8½	13	12 plus pot. nitrate	
Total Sugar: cwt per acre						
	(1) and (2)	(3) and (4)				(±0.60)
0.4	36.0	44.3	44.2	44.1	45.1	41.6
0.7	34.6	43.9	44.5	42.7	41.0	40.2
1.0	35.6	42.7	46.2	40.4	40.5	40.2
1.3	32.1	40.8	43.0	39.2	37.5	37.5
Mean	34.6 (±0.94)	42.9	44.5 (±1.34)	41.6	41.0	39.9
Roots (washed): tons per acre						
	(1) and (2)	(3) and (4)				(±0.223)
0.4	14.49	18.06	17.41	17.82	18.21	16.75
0.7	14.30	17.37	17.71	17.33	16.76	16.30
1.0	14.97	18.07	18.34	16.49	17.01	16.64
1.3	13.58	16.63	17.55	16.08	16.10	15.59
Mean	14.34 (±0.296)	17.53	17.75 (±0.418)	16.93	17.02	16.32

Standard errors:

	Total Sugar	Roots (washed)
1 for vertical comparisons	±1.04	±0.387
2 for all others	±1.31	±0.447
3 for vertical comparisons	±1.47	±0.547
4 for all others	±1.85	±0.632

49/Da/1.3

Cwt N per acre including basal	Irrigation: inches					Mean
	0	6½	8½	13	12 plus pot. nitrate	
Sugar Percentage						
	(1) and (2)	(3) and (4)				(±0.064)
0.4	12.42	12.30	12.73	12.40	12.43	12.45
0.7	12.06	12.65	12.57	12.37	12.23	12.32
1.0	11.90	11.87	12.58	12.27	11.95	12.08
1.3	11.81	12.27	12.25	12.20	11.68	12.00
Mean	12.05 (±0.094)	12.27	12.53 (±0.132)	12.31	12.08	12.21
Tops: tons per acre						
	(1) and (2)	(3) and (4)				(±0.268)
0.4	13.45	20.08	18.14	20.43	22.49	18.01
0.7	14.18	19.61	20.85	20.08	23.04	18.66
1.0	14.87	20.09	20.95	21.82	22.51	19.18
1.3	15.19	22.28	21.35	21.45	24.28	19.96
Mean	14.42 (±0.312)	20.52	20.32 (±0.441)	20.95	23.08	18.95

Standard errors:

	Sugar Percentage	Tops
1 for vertical comparisons	±0.111	±0.463
2 for all others	±0.134	±0.508
3 for vertical comparisons	±0.157	±0.655
4 for all others	±0.190	±0.719