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Yields of the Field Experiments 1955

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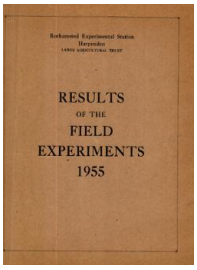

55/W/BG/1 Irrigation

Rothamsted Research

Rothamsted Research (1956) *55/W/BG/1 Irrigation ;* Yields Of The Field Experiments 1955, pp 67 - 70 **- DOI: https://doi.org/10.23637/ERADOC-1-175**

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IRRIGATION EXPERIMENT

The 5th year

The effects of irrigation and nitrogen - Woburn Butt Close 1955.

For details of cropping, treatments etc. see "Results of the Field Experiments" 1954, Section 54/Bg/1. The 4 irrigation treatments (0 A B C) are not necessarily applied to a particular crop in any one year. For particulars of the irrigations and their designations the annual reports should be consulted.

Area of each sub-plot: Cut grass, 0.0264, remainder, 0.0278 acre.
Area harvested: Cut grass, 0.0165, potatoes, 0.0155, sugar beet, 0.0176, barley, 0.0168 acre.

Rainfall and Irrigation: inches

Week ending	Rainfall	Irrigation: Potatoes A	Potatoes B	Potatoes C	Sugar beet A	Sugar beet B	Sugar beet C	Barley B & C	Cut Grass A	Cut Grass B	Cut Grass C
May 2	0.36									.75	.75
9	0.28							.50		.06	.33
16	0.81										
23	1.94										
30	1.34										
June 6	0.30										
13	1.50										
20	0.25										
27	0.07										
July 4	0.21	.50		.50	.38		.50	.59			.56
11	-	.60		.60	.62		.50	.30			.80
18	-	1.34		1.34	1.34		1.34		1.00		1.08
25	-		.57	.57		.50	.50		.50		.82
Aug 1	-		.50	.50		.79	.79		.50	1.00	.50
8	0.02		.75	.75		.62	.62		.50	.57	.84
15	0.33		.50	.50		.19	.19		.20		.67
22	0.30					.35	.35		.33	.50	.56
29	0.03		.50	.50		.50	.50		.75		
Sept 5	-		.54	.54		.63	.63		.75	.50	.50
12	0.49		.50	.50		.50	.50		.33	.33	.33
19	0.11										
26	0.95										
Oct 2	0.01										
9	0.41										
16	-										
23	1.14										
30	0.23										
Nov 6	0.69										
Total	11.77	2.44	3.86	6.30	2.34	4.08	6.42	1.39	4.86	3.71	7.74

Note: On barley 0 = A
B = C.

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Cultivations, etc.:

Potatoes. Ploughed: Sept 9, 1954. FYM applied: Jan 17, 1955. Ploughed: Jan 24. Fertilizers applied: Apr 18. Potatoes planted by machine: Apr 19. Earthed up: June 22. Sprayed with arsenious compound, 1 gallon in 40 gallons per acre: Sept 27. Lifted: Oct 7. Variety: Majestic.

Sugar beet. Ploughed: Oct 29, 1954. Ground chalk applied at 20 cwt per acre: Mar 15, 1955. Salt applied: Apr 14. Fertilizers applied: Apr 15. Seed drilled at 5.7 lb per acre (rubbed and graded): Apr 18. Sprayed with Parathion, ½ pint in 40 gallons per acre: June 10. Singled: June 20. Lifted: Nov 1. Variety: Klein E.

Barley. Ploughed: Dec 22, 1954. Fertilizers applied, seed drilled at 2½ bushels per acre: Mar 18. Sprayed with MCPA, low volume, at 2½ pints per acre: May 22. Harvested: Aug 4. Variety: Herta.

Cut grass. Nitrochalk applied: Apr 13. Basal fertilizer applied: Apr 20. Cut: May 12, June 2, June 24, July 28 (A and C plots only), Aug 26, Sept 28 (A, B and C plots only), Nov 6. Nitrochalk applied after each cut except the last. Variety: Cocksfoot S37.

Standard errors per plot:

Potatoes,	Total tubers,	whole plot:	1.959 tons per acre or 12.0%	(6 d.f.)
		sub plot:	0.703 tons per acre or 4.3%	(8 d.f.)
Sugar beet,	Total sugar,	whole plot:	4.80 cwt per acre or 11.6%	(6 d.f.)
		sub plot:	3.82 cwt per acre or 9.3%	(8 d.f.)
	Tops,	whole plot:	1.229 tons per acre or 11.6%	(6 d.f.)
		sub plot:	0.782 tons per acre or 7.4%	(8 d.f.)
Barley,	Grain,	whole plot:	1.99 cwt per acre or 5.5%	(8 d.f.)
		sub plot:	1.89 cwt per acre or 5.2%	(10 d.f.)
Cut grass,	Dry matter,	whole plot:	4.05 cwt per acre or 6.8%	(6 d.f.)
		sub plot:	2.76 cwt per acre or 4.6%	(8 d.f.)

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55/Bg/1.3

Summary of Results

N: cwt per acre including basal	Irrigation 0	A	B	C	Mean
Potatoes, total tubers: tons per acre (±1.167)*					
0.5	10.83	15.57	16.73	19.03	15.54
1.0	11.40	16.60	18.36	21.66	17.00
Mean (±1.131)	11.11	16.08	17.55	20.35	16.27
Difference (±0.574)	+0.57	+1.03	+1.63	+2.63	+1.46 (±0.287)
Potatoes, percentage ware (1⅜" riddle)					
0.5	80.2	87.9	92.1	91.2	87.8
1.0	80.9	89.4	90.4	92.8	88.4
Mean	80.6	88.6	91.2	92.0	88.1
Difference	+0.7	+1.5	-1.7	+1.6	+0.6
Sugar beet, roots (washed): tons per acre					
0.4	9.83	10.06	12.40	13.33	11.40
0.8	10.53	12.91	14.08	15.23	13.19
Mean	10.18	11.48	13.24	14.28	12.30
Difference	0.70	2.85	1.68	1.90	1.79
Sugar beet, sugar percentage					
0.4	16.7	16.9	16.5	16.5	16.6
0.8	16.9	17.4	16.5	16.8	16.9
Mean	16.8	17.1	16.5	16.6	16.8
Difference	0.2	0.5	0.0	0.3	0.3
Sugar beet, total sugar: cwt per acre (±3.18)*					
0.4	32.8	34.1	40.8	43.9	37.9
0.8	35.6	45.2	46.5	51.6	44.7
Mean (±2.77)	34.2	39.6	43.6	47.7	41.3
Difference (±3.12)	2.8	11.1	5.7	7.7	6.8 (±1.56)
Sugar beet, tops: tons per acre (±0.778)*					
0.4	7.55	8.38	8.55	11.00	8.87
0.8	9.63	11.95	12.56	15.33	12.37
Mean (±0.710)	8.59	10.17	10.56	13.17	10.62
Difference (±0.638)	2.08	3.57	4.01	4.33	3.50 (±0.319)

*for use in comparisons other than vertical.

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N: cwt per acre including basal	Irrigation O & A	Irrigation B & C	Mean
	Barley, grain: cwt per acre		
	(±0.98)*		
0.2	31.7	32.5	32.1
0.4	40.5	39.4	39.9
Mean (±0.81)	36.1	36.0	36.0
Difference (±1.09)	8.8	6.9	7.8 (±0.77)
	Barley, straw: cwt per acre		
0.2	30.6	32.3	31.4
0.4	44.2	46.9	45.6
Mean	37.4	39.6	38.5
Difference	13.6	14.6	14.2

	Irrigation O	Irrigation A	Irrigation B	Irrigation C	
No. of cuts	5	7	6	7	Mean
Level of N	Cut grass, Dry Matter: cwt per acre				
	(±2.59)*				
N_1	37.1	52.1	44.9	63.3	49.4
N_2	54.5	78.4	66.8	81.5	70.3
Mean (±2.34)	45.8	65.3	55.8	72.4	59.8
Difference (±2.25)	17.4	26.3	21.9	18.2	20.9 (±1.13)

*for use in comparisons other than vertical.

Cut Grass

N_1 = 0.15 cwt N per acre after each cut except the last

N_2 = 0.30 cwt N per acre after each cut except the last.