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Yields of the Field Experiments 1956

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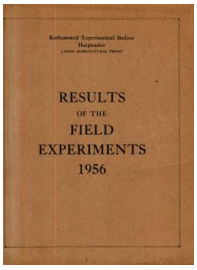

56/W/BG/1 Irrigation

Rothamsted Research

Rothamsted Research (1957) *56/W/BG/1 Irrigation ;* Yields Of The Field Experiments 1956, pp 66 - 69 **- DOI: https://doi.org/10.23637/ERADOC-1-176**

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IRRIGATION EXPERIMENT

The 6th year

The effects of irrigation and nitrogen - Woburn Butt Close 1956.

For details of cropping, treatments etc. see "Details of the Classical and Long Term Experiments" 1956.

Area of each sub-plot: Cut grass, 0.0264; remainder, 0.0278 acres.
Area harvested (acres): Potatoes, 0.0155; sugar beet, 0.0176; barley, 0.0168; cut grass, 0.0165.

Rainfall and Irrigation: inches

Week ending	Rain-fall	Potatoes A & C	Sugar beet B & C	Barley B & C	Cut grass A	Cut grass B	Cut grass C
May 7	.04						.52
14	.10			1.12		.50	.50
21	-			.50			.50
28	.10			.50	1.00	.50	.75
June 4	.51			.50		.50	.52
11	1.11		.87				
18	.93						
25	.07						
July 2	.18	.50				.50	.50
9	1.27		.50		1.00		
16	.73						.57
23	1.09						
30	.73						
Aug 6	1.56						
13	.71						
20	.98						
27	.46						
Sept 3	1.03						
10	1.05						
17	.06						
24	.21						
Oct 1	.24						
Total	13.16	0.50	1.37	2.62	2.00	2.00	3.86

Note: On sugar beet and barley 0 = A, B = C; on potatoes 0 = B, A = C.

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Cultivations, etc.:

Potatoes. Ploughed: Aug 18, 1955. Dung applied: Nov 21. Ploughed: Nov 23. Fertilizers applied: Mar 26, 1956. Potatoes planted by machine: Mar 28. Earthed up: June 20. Sprayed with copper fungicide, 5 lb in 40 gallons per acre: July 23. Sprayed with arsenious compound, 1 gallon in 40 gallons per acre: Aug 31. Lifted: Oct 6. Variety: Majestic.

Sugar beet. Ploughed: Oct 7, 1955. Ground chalk applied at 20 cwt per acre: Dec 8. Salt applied: Mar 26, 1956. Fertilizers applied, seed drilled at 12 lb per acre (rubbed and graded): Apr 6. Sprayed with Parathion against leaf miner, 8 oz in 40 gallons per acre: May 25. Singled: May 31. Lifted: Nov 21. Variety: Klein E.

Barley. Ploughed: Nov 24, 1955. Fertilizers applied: Mar 12, 1956. Seed drilled at 2½ bushels per acre: Mar 15. Harvested: Aug 14. Variety: Herta.

Cut grass. Basal fertilizer applied: Jan 12, 1956. 1st application of 'Nitro-Chalk': Mar 12. Cut 6 times (all plots): May 28, June 22, July 17, Aug 13, Sept 7 and Nov 19. 'Nitro-Chalk' applied after each cut except the last. Variety: Cocksfoot S37.

Standard errors per plot:

Potatoes.	Total tubers,	whole plot:	1.115 tons per acre or 7.4%	(8 d.f.)
		sub plot:	0.757 tons per acre or 5.0%	(10 d.f.)
Sugar beet.	Total sugar,	whole plot:	2.34 cwt per acre or 3.8%	(8 d.f.)
		sub plot:	2.70 cwt per acre or 4.4%	(10 d.f.)
	Tops,	whole plot:	1.017 tons per acre or 9.4%	(8 d.f.)
		sub plot:	0.969 tons per acre or 8.9%	(10 d.f.)
Barley.	Grain,	whole plot:	2.40 cwt per acre or 8.0%	(8.d.f.)
		sub plot:	2.18 cwt per acre or 7.3%	(10 d.f.)
Cut grass.	Dry matter,	whole plot:	5.66 cwt per acre or 7.5%	(6 d.f.)
		sub plot:	3.75 cwt per acre or 5.0%	(8 d.f.)

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Summary of Results

N: cwt per acre including basal	Irrigation O & B	Irrigation A & C	Mean	Irrigation O & B	Irrigation A & C	Mean
	Potatoes					
	total tubers: tons per acre (± 0.505)*			percentage ware ($1\frac{5}{8}$" riddle)		
0.5	14.20	14.76	14.48	88.4	87.6	88.0
1.0	15.64	16.06	15.85	89.6	92.4	91.0
Mean	14.92 (± 0.455)	15.41	15.16	89.0	90.0	89.5
Difference	1.44 (± 0.437)	1.30	1.37 (± 0.309)	1.2	4.8	3.0

N: cwt per acre including basal	Irrigation O & A	Irrigation B & C	Mean	Irrigation O & A	Irrigation B & C	Mean
	Sugar Beet					
	roots (washed): tons per acre			sugar percentage		
0.4	16.24	15.06	15.65	18.6	18.3	18.5
0.8	18.54	17.46	18.00	18.2	18.6	18.4
Mean	17.39	16.26	16.83	18.4	18.5	18.4
Difference	+2.30	+2.40	+2.35	-0.4	+0.3	-0.1
	total sugar: cwt per acre (±1.23)*			tops: tons per acre (± 0.501)*		
0.4	60.3	55.3	57.8	10.21	9.35	9.78
0.8	67.4	65.2	66.3	12.45	11.48	11.96
Mean	63.8 (±0.95)	60.2	62.0	11.33 (± 0.415)	10.41	10.87
Difference	7.1 (±1.56)	9.9	8.5 (±1.10)	2.24 (± 0.560)	2.13	2.18 (± 0.396)

*for use in comparisons other than vertical.

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N: cwt per acre including basal	Irrigation O & A	Irrigation B & C	Mean	Irrigation O & A	Irrigation B & C	Mean
	Barley					
	grain: cwt per acre			straw: cwt per acre		
	(±1.16)*					
0.2	24.6	29.1	26.8	20.2	30.6	25.4
0.4	31.2	34.7	32.9	26.4	41.2	33.8
Mean	27.9	31.9	29.9	23.3	35.9	29.6
	(±0.98)					
Difference	6.6	5.6	6.1	6.2	10.6	8.4
	(±1.26)		(±0.89)			

Level of N	Irrigation O	Irrigation A	Irrigation B	Irrigation C	Mean
Cut grass, dry matter: cwt per acre (Total of 6 cuts)					
			(±3.61)*		
1	55.7	61.8	63.8	72.0	63.3
2	81.4	83.0	84.3	99.7	87.1
Mean (±3.26)	68.6	72.4	74.1	85.8	75.2
Difference (±3.06)	25.7	21.2	20.5	27.7	23.8 (±1.53)

*for use in comparisons other than vertical.

Cut grass. Levels of N

1 = 0.15 cwt N per acre in spring and after each cut except the last.
2 = 0.30 cwt N per acre in spring and after each cut except the last.

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