

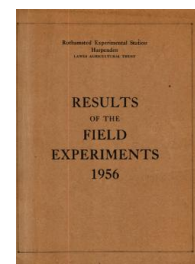
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# Yields of the Field Experiments 1956

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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>

56/Bg/1.1

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	Sugar beet	Barley	Cut grass		
		A & C	B & C	B & C	A	B	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.



56/Bg/1.2

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  $2\frac{1}{2}$  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.)



56/Bg/1.3

Summary of Results

N: cwt per acre including basal	Irrigation			Irrigation		
	O & B	A & C	Mean	O & B	A & C	Mean
Potatoes						
	total tubers: tons per acre ( $\pm 0.505$ )*			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	15.41	15.16	89.0	90.0	89.5
	( $\pm 0.455$ )					
Difference	1.44	1.30	1.37	1.2	4.8	3.0
	( $\pm 0.437$ )		( $\pm 0.309$ )			
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 ( $\pm 1.23$ )*			tops: tons per acre ( $\pm 0.501$ )*		
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	60.2	62.0	11.33	10.41	10.87
	( $\pm 0.95$ )			( $\pm 0.415$ )		
Difference	7.1	9.9	8.5	2.24	2.13	2.18
	( $\pm 1.56$ )		( $\pm 1.10$ )	( $\pm 0.560$ )		( $\pm 0.396$ )

\* for use in comparisons other than vertical.



56/Bg/1.4

N: cwt per acre including basal	Irrigation		Mean	Irrigation		Mean
	O & A	B & C		O & A	B & C	

Barley

	grain: cwt per acre			straw: cwt per acre		
	$(\pm 1.16)^*$					
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
Difference	6.6 $(\pm 0.98)$	5.6	6.1 $(\pm 0.89)$	6.2	10.6	8.4

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

\*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.