

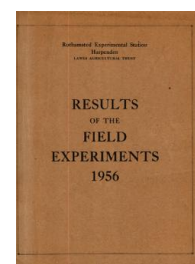
Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1956

[Full Table of Content](#)



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 (± 0.505)*			percentage ware ($1\frac{5}{8}$ " riddle)		
	0.5	14.20	14.76	14.48	88.4	87.6
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
	(± 0.455)					
Difference	1.44	1.30	1.37	1.2	4.8	3.0
	(± 0.437)		(± 0.309)			

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

Sugar Beet

	roots (washed): tons per acre			sugar percentage		
	0.4	16.24	15.06	15.65	18.6	18.3
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
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
	(± 0.95)			(± 0.415)		
Difference	7.1	9.9	8.5	2.24	2.13	2.18
	(± 1.56)		(± 1.10)	(± 0.560)		(± 0.396)

* for use in comparisons other than vertical.

56/Bg/1.4

N: cwt per acre including basal	Irrigation			Irrigation		
	0 & A	B & C	Mean	0 & A	B & C	Mean

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 (± 0.98)	5.6	6.1 (± 0.89)	6.2	10.6	8.4

Level of N	Irrigation				Mean
	0	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 (± 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.