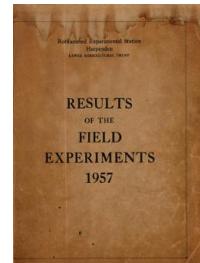


Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



Yields of the Field Experiments 1957

[Full Table of Content](#)



57/R/CB/2 and 57/W/CB/2 Barley - N and Residual Dung N P K and Salt

Rothamsted Research

Rothamsted Research (1958) *57/R/CB/2 and 57/W/CB/2 Barley - N and Residual Dung N P K and Salt ; Yields Of The Field Experiments 1957*, pp 78 - 80 - DOI:
<https://doi.org/10.23637/ERADOC-1-177>

57/Cb/2.1

BARLEY

Residual effects of dung, N, P, K and salt to sugar beet 1956 and direct effect of N - Rothamsted (R) Great Field II and Woburn (W) Butt Close 1957.

Design: Half replicate of 4×2^5 arranged in 4 blocks of 16 plots each, the identity being $d(20 - 10 - 5 + 0)npksN = 1$, with certain high order interactions confounded with block differences.

Area of each plot (acres): R - 0.0158; W - 0.0167. Area harvested: R - 0.0134; W - 0.0141.

Treatments: All combinations of:-

Applied to sugar beet 1956

Dung: None; 5; 10; 20 tons per acre ploughed in.
N: None; 0.9 cwt N per acre as sulphate of ammonia.
P: None; 0.75 cwt P_2O_5 per acre as superphosphate.
K: None; 1.5 cwt K_2O per acre as muriate of potash.
Salt: None; 5 cwt per acre agricultural salt.

Applied to barley 1957

N: None; 0.4 cwt N as 'Nitro-Chalk' per acre.

Basal dressing (each field): 0.2 cwt P_2O_5 , 0.4 cwt K_2O as compound fertilizer (10% P_2O_5 , 20% K_2O) per acre.

Cultivations, etc.:

Great Field II (R). Ploughed: Jan 25. Seed combine drilled with basal fertilizers at 2 bushels per acre: Mar 26. Nitrogen fertilizer applied: Mar 28. Sprayed with MCPA at 2 pints in 40 gallons per acre: May 28. Combine harvested: Aug 20.
Variety: Proctor. Previous crop: Sugar beet.

Butt Close (W). Ploughed: Jan 7. Nitrogen fertilizer applied: Mar 18. Seed combine drilled with basal fertilizer at $2\frac{1}{2}$ bushels per acre: Mar 19. Sprayed with MCPA at 2 pints in 20 gallons per acre: May 23. Combine harvested: Aug 20.
Variety: Herta. Previous crop: Sugar beet.

Standard errors per plot, Grain (at 85% dry matter): cwt per acre.

Great Field (R): 1.79 cwt per acre or 4.8% (25 d.f.)*

Butt Close (W): 3.39 cwt per acre or 12.4% (27 d.f.)

*2 missing values.

57/Cb/2.2

Summary of Results

Grain (at 85% dry matter): cwt per acre

		Dung to sugar beet 1956: tons per acre				Mean
		None	5	10	20	
Great Field II, Rothamsted						
Mean	(±0.45)	35.7	37.0	37.6	38.9	37.3
<u>Applied to sugar beet 1956</u>						
N: cwt per acre						
None	(±0.63)	34.5	35.6	37.4	38.6	36.5
0.9		36.9	38.3	37.9	39.2	38.0
Difference	(±0.90)	+2.4	+2.7	+0.5	+0.6	+1.5 (±0.45)
P ₂ O ₅ : cwt per acre						
None	(±0.63)	35.0	35.8	36.7	38.2	36.4
0.75		36.4	38.1	38.6	39.5	38.1
Difference	(±0.90)	+1.4	+2.3	+1.9	+1.3	+1.7 (±0.45)
K ₂ O: cwt per acre						
None	(±0.63)	36.1	37.2	37.6	38.9	37.4
1.5		35.3	36.7	37.7	38.9	37.1
Difference	(±0.90)	-0.8	-0.5	+0.1	0.0	-0.3 (±0.45)
Salt: cwt per acre						
None	(±0.63)	34.6	36.8	37.9	38.9	37.1
5.0		36.7	37.2	37.4	38.8	37.5
Difference	(±0.90)	+2.1	+0.4	-0.5	-0.1	+0.4 (±0.45)
<u>Applied to barley 1957</u>						
N: cwt per acre						
None	(±0.63)	32.9	34.3	36.0	37.6	35.2
0.4		38.4	39.6	39.3	40.1	39.4
Difference	(±0.90)	+5.5	+5.3	+3.3	+2.5	+4.2 (±0.45)

Response to	Responses to treatments									
	cwt per acre									
	N	None	N	P ₂ O ₅	None	K ₂ O	None	Salt	barley 1957	
		0.9		0.75		1.5		None	N	
<u>Applied to</u>										
<u>sugar beet 1956</u>										
N	-	-	+1.6	+1.4	+1.3	+1.7	+1.7	+1.3	+3.4	-0.4
P ₂ O ₅	+1.8	+1.6	-	-	+2.1	+1.3	+2.6	+0.8	+1.8	+1.6
K ₂ O	-0.5	-0.1	+0.1	-0.7	-	-	-0.2	-0.4	-0.6	0.0
Salt	+0.7	+0.3	+1.4	-0.4	+0.6	+0.4	-	-	+0.4	+0.6
<u>Applied to</u>										
<u>barley 1957</u>										
N	+6.1	+2.3	+4.3	+4.1	+3.9	+4.5	+4.1	+4.3	-	-

Mean dry matter % as harvested: 83.5

146

57/Cb/2.3

Grain (at 85% dry matter): cwt per acre

	Dung to sugar beet 1956: tons per acre				Mean					
	None	5	10	20						
Butt Close, Woburn										
Mean (± 0.85)	25.9	26.5	27.5	29.9	27.4					
<u>Applied to sugar beet 1956</u>										
N: cwt per acre										
None (± 1.20)	25.7	26.2	29.7	30.4	28.0					
0.9	26.1	26.9	25.3	29.3	26.9					
Difference (± 1.70)	+0.4	+0.7	-4.4	-1.1	-1.1 (± 0.85)					
P_2O_5 : cwt per acre										
None (± 1.20)	26.0	26.1	28.0	30.3	27.6					
0.75	25.7	27.0	27.0	29.5	27.3					
Difference (± 1.70)	-0.3	+0.9	-1.0	-0.8	-0.3 (± 0.85)					
K_2O : cwt per acre										
None (± 1.20)	26.7	26.4	28.7	30.3	28.0					
1.5	25.0	26.7	26.3	29.4	26.8					
Difference (± 1.70)	-1.7	+0.3	-2.4	-0.9	-1.2 (± 0.85)					
Salt: cwt per acre										
None (± 1.20)	26.4	25.2	28.5	29.5	27.4					
5.0	25.4	27.8	26.5	30.2	27.5					
Difference (± 1.70)	-1.0	+2.6	-2.0	+0.7	+0.1 (± 0.85)					
<u>Applied to barley 1957</u>										
N: cwt per acre										
None (± 1.20)	22.4	24.4	23.4	27.0	24.3					
0.4	29.4	28.6	31.6	32.7	30.6					
Difference (± 1.70)	+7.0	+4.2	+8.2	+5.7	+6.3 (± 0.85)					
Responses to treatments cwt per acre										
	Applied to sugar beet 1956				Applied to barley 1957					
Response to	N None	0.9 None	P_2O_5 None	K_2O None	Salt None 5.0	N None 0.4				
<u>Applied to sugar beet 1956</u>										
					(± 1.20)					
N	-	-	-0.3	-1.9	-0.8	-1.4	-1.2	-1.0	-1.0	-1.2
P_2O_5	+0.5	-1.1	-	-	-0.6	0.0	+0.8	-1.4	-0.5	-0.1
K_2O	-0.9	-1.5	-1.5	-0.9	-	-	-0.1	-2.3	-0.7	-1.7
Salt	0.0	+0.2	+1.2	-1.0	+1.2	-1.0	-	-	-0.3	+0.5
<u>Applied to barley 1957</u>										
N	+6.4	+6.2	+6.1	+6.5	+6.8	+5.8	+5.9	+6.7	-	-

Mean dry matter % as harvested: 82.5