

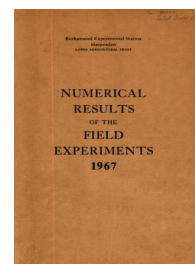
Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1967

[Full Table of Content](#)



67/R/IR/C/7 Irrigation - Beans and Barley

Rothamsted Research

Rothamsted Research (1968) *67/R/IR/C/7 Irrigation - Beans and Barley* ; Yields Of The Field Experiments 1967, pp 141 - 144 - DOI: <https://doi.org/10.23637/ERADOC-1-157>

67/C/7.1

IRRIGATION

(IR)

The effect of irrigation on barley and spring beans - Great Field I and II, 1967.

Design:

Barley: 2 randomised blocks of 4 whole plots, each split into 4.
Spring beans: Single replicate of 4 x 2 x 2 x 2 x 2, with component of 5 factor interaction confounded and with split plot confounding.

Area of each sub-plot:-

Barley:	0.0400.	Area harvested:	0.0212
Spring beans:	0.0321.	Area harvested:	0.0077

Treatments: Barley: All combinations of:-

Whole plots: 1. Irrigation: None (O), early (A), late (B), full (C).

To 1/4 plots: 2. Varieties: Maris Badger (M), Impala (I).
3. Nitrogen: 0.3 (N1), 0.6 (N2), as compound fertiliser (basal) plus 'Nitro-Chalk'.

Spring beans: All combinations of:-

Whole plots: 1. Irrigation: None (O), early (A), late (B), full (C).

1/2 plots: 2. Residues of N to barley 1966: 0.5 (R1), 0.8 (R2) cwt N as compound fertiliser (basal) plus 'Nitro-Chalk'.

To 1/4 plots: 3. Row spacing: 10.5 (C), 21 (W) inches.
4. Seed rate: 200 (L), 300 (H) lb.

1/8th plots: 5. Rates of PK: 400 (F1), 560 (F2) lb compound (0:14:28). 400 lb of these was applied as basal dressing.

Basal applications: Barley: 40 cwt ground chalk, 224 lb (15:15:15) combine drilled. Weedkiller: Mecoprop/2,4-D (Methoxone Extra at 6 pints in 35 gals).

Beans: 40 cwt ground chalk, 400 lb (0:14:28) broadcast by drill.

Weedkiller: Simazine at 1 lb a.i. in 32 gals. Insecticide: Demeton-s-methyl (Metasystox at 12 fluid oz in 37 gals also at 12 fluid oz in 3 gals - the second application by fixed-wing aircraft).

Cultivations, etc.:-

Barley: Ground chalk applied: Nov 10, 1966. Ploughed: Nov 11 - 22.

Seed drilled at 140 lb: Mar 13, 1967. 'Nitro-Chalk' applied:

Mar 21. Weedkiller applied: May 11. Combine harvested:

67/C/7.2

Aug 22. Previous crops: Spring beans 1965, potatoes 1966.
 Spring beans: Ground chalk applied: Nov 10, 1966. Ploughed:
 Nov 11. Basal PK applied: Mar 18, 1967. PK dressings applied,
 seed drilled, weedkiller applied: Mar 20. Insecticide applied:
 June 14 and July 11. Combine harvested: Sept 8. Previous
 crops: Potatoes 1965, barley 1966.

RAINFALL AND IRRIGATION: INCHES

Week- ending	Rain- fall	IRRIGATION					
		Barley			Beans		
		A	B	C	A	B	C
May 6	1.42						
13	0.25						
20	1.08						
27	1.98						
June 3	0.17						
10	0.01						
17	0.00	1.00	-	1.00	1.00	-	1.00
24	0.70	1.30	-	1.30	1.00	-	1.00
July 1	1.33						
8	0.07						
15	0.03	-	1.00	1.00	-	1.00	1.00
22	1.31	-	1.00	1.00	-	1.00	1.00
29	0.62						
Aug 5	0.24						
12	0.27				-	1.00	1.00
19	1.13						
26	0.00						
Sept 2	0.31						
9	0.51						
16	0.26						
23	0.48						
30	0.71						
Total	12.88	2.30	2.00	4.30	2.00	3.00	5.00

Standard errors per plot.

Barley, grain: Sub plot: 2.46 or 6.4% (12 d.f.)

Spring beans, grain: 1/4 plot: 2.59 or 7.0% (8 d.f.)

1/8 plot: 2.19 or 5.9% (10 d.f.)

67/C/7.3

SUMMARY OF RESULTS

BARLEY

	O	A	B	C	Mean
	GRAIN				
Mean	38.2	41.1	34.8	38.5	38.2
		(± 1.23)*			(± 0.61)
M	39.8	41.7	34.6	37.6	38.4
I	36.6	40.6	35.1	39.4	37.9
		(± 1.23)*			(± 0.61)
N1	35.9	39.6	32.3	36.4	36.1
N2	40.5	42.6	37.4	40.6	40.3

* For use in vertical and interaction comparisons only

STRAW

Mean	21.1	26.0	19.5	23.1	22.4
M	24.2	28.7	20.3	24.0	24.3
I	17.9	23.3	18.7	22.3	20.6
N1	19.2	25.1	17.7	20.3	20.5
N2	23.0	27.0	21.3	26.0	24.3

Mean D.M. %: Grain: 82.1
Straw: 90.9

67/C/7.4

SPRING BEANS

GRAIN

	O	A	B	C	Mean
Mean	33.1	36.9	38.5	38.6	36.8
R1	34.9	37.1	38.3	37.9	37.1
R2	31.3	36.7	38.7	39.2	36.5
		(± 0.91)*			
C	35.5	38.7	40.9	39.8	38.7
W	30.6	35.2	36.1	37.4	34.8
		(± 0.91)*			
L	30.6	35.3	36.8	37.5	35.1
H	35.5	38.6	40.2	39.6	38.5
		(1) and (2)			(± 0.39)
F1	32.8	36.5	38.6	38.6	36.6
F2	33.3	37.3	38.4	38.5	36.9

(1) (± 1.47) For use in horizontal and diagonal comparisons

(2) (± 0.77) For use in vertical and interaction comparisons

* For use in vertical and interaction comparisons only

Mean D.M. %: 73.0