

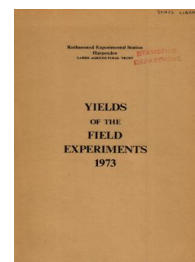
Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1973

[Full Table of Content](#)



73/R&bb/BS/1 - Growth & Yield on Contrasted Sites - Spring Barley

Rothamsted Research

Rothamsted Research (1974) 73/R&bb/BS/1 - Growth & Yield on Contrasted Sites - Spring Barley ; Yields Of The Field Experiments 1973, pp 316 - 319 - DOI:

<https://doi.org/10.23637/ERADOC-1-98>

73/R/BS/1 and 73/BE/BS/1

SPRING BARLEY

GROWTH AND YIELD ON CONTRASTED SITES

Object: To try to account for yields and differences between yields of barley on sites at Rothamsted and Broom's Barn by studying crop growth rates, nutrient uptake, water use etc., at a wide range of nitrogen levels, with and without irrigation. Also to study the interaction between site differences and crops (see also 73/R and BB/WW/2) - Rothamsted (R), Long Hoos I and II, and Broom's Barn (BB), Dunholme Field.

Sponsors: P.J. Welbank, F.V. Widdowson.

Design: 3 randomised blocks of 2 plots, split into 6.

Whole plot dimensions:

Long Hoos I and II (R): 15.2 x 48.0. Sub plot area harvested: 0.00434.
Dunholme Field (BB): 15.2 x 45.7. Sub plot area harvested: 0.00413.

Treatments: All combinations of:-

Whole plots: 1. Irrigation:

	IRRIGN
None	0
Full irrigation	I

Sub plots: 2. Nitrogen fertiliser (kg N):

	N
31	31
63	63
94	94
125	125
157	157
188	188

Total irrigation was 50.8 mm applied on 2 occasions (R) and 111.8 mm applied on 4 occasions (BB).

Basal applications:

Long Hoos (R): Manures: (0:20:20) at 360 kg combine drilled.

Weedkiller: MCPA, mecoprop and dicamba ('Tetralox Plus' at 7.0 l in 220 l). Fungicide: Tridemorph at 0.53 kg in 220 l.

NOTE: The site had a basal dressing of (0:20:20) at 1300 kg and Epsom salts at 900 kg in autumn 1971.

Dunholme Field (BB): Manures: (0:20:20) at 1300 kg. Epsom salts at 900 kg in autumn. (0:20:20) at 380 kg combine drilled. Weedkiller: MCPA, mecoprop and dicamba ('Banlene Plus' at 5.6 l in 220 l). Fungicide: Tridemorph 0.53 kg in 220 l.

Seed: Julia, dressed with ethirimol, sown at 160 kg (R) and 180 kg (BB).

73/R/BS/1 and 73/BB/BS/1

Cultivations, etc.:-

Long Hoos (R): Ploughed: 9 Nov, 1972. N applied, springtine cultivated and seed sown: 9 Mar, 1973. Weedkiller and fungicide applied: 11 May. Irrigated: 14 and 18 June. Combine harvested: 10 Aug. Previous crops: Beans 1971, winter wheat 1972.

Dunholme Field (BB): Basal PK and Epson salts applied: 6 Oct, 1972. Ploughed: 10 Nov. N applied: 8 Mar, 1973. Seed sown: 12 Mar. Weedkiller and fungicide applied: 14 May. Irrigated: 8, 14, 15 June and 5 July. Combine harvested: 9 Aug. Previous crops: Sugar beet 1971, winter wheat 1972.

NOTE: Crop samples were taken throughout the season. The percentage of N, P and K was measured in all samples. The number of tillers or ear-bearing stems was counted, and the leaf areas measured at each sampling. Mildew (*Erysiphe graminis*) assessments were made. 1000 grain weights were determined. Soil moisture content was estimated by neutron probe weekly.

Standard errors per sub plot.	Grain: tonnes/hectare.
Long Hoos I and II (R):	0.318 or 5.7% (20 d.f.)
Dunholme Field (BB):	0.221 or 3.9% (20 d.f.)

73/R/BS/1 and 73/BB/BS/1

TABLES OF MEANS

LONG HOOS I AND II (R)

GRAIN: TONNES/HECTARE

	N						Mean
	31	63	94	125	157	188	
IRRIGN							
O	4.39	5.28	5.96	6.06	6.11	5.97	5.63
I	4.51	5.44	5.92	5.76	5.93	6.07	5.61
Mean	4.45	5.36	5.94	5.91	6.02	6.02	5.62

STANDARD ERRORS OF DIFFERENCES

	N	IRRIGN*
	N	
	0.184	
* Within the same level of IRRIGN only		0.260
Mean D.M. %	84.8	

STRAW: TONNES/HECTARE

IRRIGN							
O	1.94	2.97	4.25	4.77	5.05	5.10	4.01
I	2.65	3.28	4.15	5.15	4.94	5.28	4.24
Mean	2.30	3.12	4.20	4.96	5.00	5.19	4.13

Mean D.M. % 95.1

73/R/BS/1 and 73/BB/BS/1

DUNHOLME FIELD (BB)

GRAIN: TONNES/HECTARE

	N						Mean
	31	63	94	125	157	188	
IRRIGN							
O	5.89	6.01	5.24	5.20	5.43	5.39	5.52
I	5.86	6.10	5.79	5.81	5.77	5.97	5.88
Mean	5.87	6.05	5.51	5.50	5.60	5.68	5.70

STANDARD ERRORS OF DIFFERENCES

	N	IRRIGN*
		N
	0.128	
* Within the same level of IRRIGN only		0.185

Mean D.M. % 81.4

STRAW: TONNES/HECTARE

IRRIGN							
O	4.39	4.61	4.99	4.92	4.79	4.73	4.74
I	4.71	6.02	6.18	5.76	6.06	5.73	5.74
Mean	4.55	5.32	5.59	5.34	5.43	5.23	5.24

Mean D.M. % 64.4