

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/WW/2 - Growth Yield on Contrasted Sites - Winter Wheat

Rothamsted Research

Rothamsted Research (1974) 73/R&bb/WW/2 - *Growth Yield on Contrasted Sites - Winter Wheat ; Yields Of The Field Experiments 1973*, pp 300 - 303 - DOI:

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

73/R/WW/2 and 73/BB/WW/2

WINTER WHEAT

GROWTH AND YIELD ON CONTRASTED SITES

Object: To try to account for yields and differences between yields of wheat 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/BS/1 and BB/BS/1). Rothamsted (R) - Great Knott III, and Broom's Barn (BB) - New Piece.

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

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

Whole plot dimensions:

Great Knott III (R): 15.2 x 48.0. Sub plot area harvested: 0.00434.
New Piece (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):

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

Total irrigation was 50.8 mm applied on 2 occasions (R) and 110.5 mm applied on 4 occasions (BB).

Basal applications (both fields): Manures: (0:20:20) at 1300 kg and Epsom salts at 900 kg worked into seedbed. (10:24:24) at 250 kg combine drilled. Weedkiller: MCPA, mecoprop and dicamba ('Tetralex Plus' at 7.0 l in 220 l (R) and 'Banlene Plus' at 5.6 l in 220 l (BB)).
Fungicide: Tridemorph at 0.53 kg in 220 l.

Seed: Cappelle, dressed with dieldrin, sown at 200 kg.

73/R/WW/2 and 73/BB/WW/2

Cultivations, etc.:-

Great Knott III (R): Basal PK and Epsom salts applied: 13 Oct, 1972.
Deep-tine cultivated: 16 Oct. Rotary cultivated: 17 Oct. Seed sown: 20 Oct. N applied: 13 Apr, 1973. Weedkiller applied: 26 Apr. Fungicide applied: 18 May. Irrigated 14 and 18 June. Combine harvested: 22 Aug. Previous crops: Barley 1971, beans 1972.

New Piece (BB): Deep-tine cultivated: 28 Sept and 2 Oct, 1972.
Basal PK and Epsom salts applied: 6 Oct. Seed sown: 10 Oct. N applied: 12 Apr, 1973. Weedkiller applied: 16 Apr. Fungicide applied: 15 May. Irrigated: 8, 14, 15 June and 5 July. Combine harvested: 16 Aug. Previous crops: Sugar beet 1971, beans 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:

Great Knott III (R): 0.260 or 4.1% (20 d.f.)

New Piece (BB): 0.288 or 5.1% (20 d.f.)

73/R/Ww/2 and 73/BB/Ww/2

TABLES OF MEANS

GREAT KNOTT III (R)

GRAIN: TONNES/HECTARE

	N						Mean
	31	63	94	125	157	188	
IRRIGN							
O	7.47	6.61	6.27	6.56	6.07	6.31	6.55
I	6.88	6.23	5.96	5.72	5.63	5.52	5.99
Mean	7.18	6.42	6.12	6.14	5.85	5.91	6.27

STANDARD ERRORS OF DIFFERENCES

	N	IRRIGN* N
	0.150	
*Within the same level of IRRIGN only		0.207

STRAW: TONNES/HECTARE

O	7.25	8.19	8.31	8.38	8.15	8.17	8.07
I	6.03	8.15	8.75	7.68	8.13	7.78	7.75
Mean	6.64	8.17	8.53	8.03	8.14	7.97	7.91

Mean D.M. % Grain 82.5
Straw 83.4

73/R/WW/2 and 73/BB/WW/2

NEW PIECE (BB)

GRAIN: TONNES/HECTARE

	N						Mean
	31	63	94	125	157	188	
IRRIGN							
O	5.19	5.73	5.87	5.86	5.40	5.45	5.59
I	5.15	5.86	6.03	5.86	5.73	5.43	5.68
Mean	5.17	5.80	5.95	5.86	5.57	5.44	5.63

STANDARD ERRORS OF DIFFERENCES

	N	IRRIGN*
	N	
	0.166	
*Within the same level of IRRIGN only		0.235

STRAW: TONNES/HECTARE

O	6.10	6.27	6.75	6.96	6.78	7.25	6.69
I	6.48	6.80	7.17	7.12	7.03	7.36	6.99
Mean	6.29	6.53	6.96	7.04	6.91	7.30	6.84

Mean D.M. % Grain 87.5
Straw 67.8