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71/R/B/2 and 71/W/B/2 Varieties, N and Ethirimol - Barley

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71/R/B/2 and 71/W/B/2

BARLEY

VARIETIES, N AND ETHIRIMOL

Object: To study the yield of newer varieties of barley grown at a range of nitrogen levels. The effects of ethirimol on the incidence of mildew (*Erysiphe graminis*) are also studied - Rothamsted (R) Great Knott III and Woburn (W) Horsepool.

Design: 4 randomised blocks of 12 plots, split into 3.

Whole plot dimensions:-

Great Knott III (R): 4.27 x 24.7. Sub plot area harvested: 0.00163.
Horsepool (W): 4.27 x 20.1. Sub plot area harvested: 0.00173.

Treatments:

Whole plots: All combinations of:-

1. Varieties: Gerkra (G), Julia (J), Midas (M), Sultan (S), Vada (V), Zephyr (Z).
2. Fungicidal seed dressing: None (0), ethirimol at 0.70 kg (F).

Sub plots:

3. Nitrogen: 38, 75, 113 kg (R) and 50, 100, 150 kg (W) as 'Nitro-Chalk'.

Basal applications:-

Great Knott III (R): 246 kg (0:20:20) combine drilled. Weedkillers: Paraquat at 0.56 kg ion in 225 l. Ioxynil octanoate, bromoxynil octanoate and the iso-octyl ester of dichlorpop ('Oxytril P' at 1.4 l in 225 l).

Horsepool (W): 252 kg (0:20:20) combine drilled. Weedkillers: Paraquat at 0.84 kg ion in 281 l (to kill remains of first sowing badly damaged by birds). Ioxynil at 0.525 kg plus mecoprop at 1.58 kg in 281 l.

Cultivations, etc.:-

Great Knott III (R): Paraquat applied: 14 Oct, 1970. Ploughed: 2 - 10 Nov. Seed combine drilled at 157 kg: 10 Mar, 1971. N applied: 23 Mar. 'Oxytril P' applied: 11 May. Combine harvested: 20 Aug. Previous crops: Potatoes 1969, winter wheat 1970.

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Horsepool (W): Subsoiled, tines 142 cm apart, 61 cm deep:
11 Sept, 1970. Rotary cultivated: 15 Sept. Rotary cultivated
second stroke: 2 Oct. Deep-tine cultivated: 11 Oct. Seed
combine drilled at 157 kg: 23 Mar, 1971. N applied: 24 Mar.
Paraquat applied: 20 Apr. Power harrowed, seed redrilled at
157 kg: 21 Apr. Ioxynil/mecoprop applied: 17 May. Combine
harvested: 25 Aug. Previous crops: Spring beans 1969, winter
wheat 1970.

NOTE: Samples were taken for assessment of mildew (*Erysiphe graminis*)
and other foliar diseases.

Standard errors per plot. Grain, tonnes/hectare.

Great Knott III (R):	Whole plot:	0.195	or	3.5%	(33 d.f.)
	Sub plot:	0.330	or	5.9%	(72 d.f.)
Horsepool (W):	Whole plot:	0.307	or	6.6%	(33 d.f.)
	Sub plot:	0.374	or	8.1%	(72 d.f.)

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SUMMARY OF RESULTS

GRAIN: TONNES/HECTARE

GREAT KNOTT III (R)

	G	J	M	S	V	Z	Mean
	(±0.098)						(±0.040)
O	5.16	5.65	4.85	5.10	5.97	5.15	5.32
F	5.67	6.45	5.31	5.47	6.56	5.84	5.88
N: KG/HA	(1) and (2)						(±0.048)
38	5.01	5.57	4.71	5.10	5.63	5.01	5.17
75	5.54	6.24	5.18	5.48	6.58	5.68	5.78
113	5.70	6.34	5.35	5.27	6.60	5.80	5.84
Mean (±0.069)	5.42	6.05	5.08	5.28	6.27	5.49	5.60

N: KG/HA

	38	75	113
	(3) and (4)		
O	4.97	5.40	5.58
F	5.37	6.17	6.11

(1) (±0.117) (3) (±0.068) For use in vertical and diagonal comparisons only

(2) (±0.118) (4) (±0.067) For use in horizontal and interaction comparisons only

Mean D.M. %: 81.5

71/R/B/2 and 71/W/B/2

GRAIN: TONNES/HECTARE

HORSEPOOL (W)

	G	J	M	S	V	Z	Mean
	(±0.154)						(±0.063)
O	4.67	4.56	3.82	3.38	5.59	4.14	4.36
F	4.86	4.78	4.48	4.51	6.00	4.88	4.92
N: KG/HA	(1) and (2)						(±0.054)
50	4.86	5.06	4.60	4.26	5.72	4.75	4.88
100	4.83	4.79	4.10	3.94	5.77	4.64	4.68
150	4.61	4.16	3.75	3.63	5.90	4.15	4.37
Mean (±0.109)	4.77	4.67	4.15	3.94	5.80	4.51	4.64

N: KG/HA

	50	100	150
	(3) and (4)		
O	4.59	4.38	4.11
F	5.16	4.97	4.62

(1) (±0.132) (3) (±0.088) For use in vertical and diagonal comparisons only

(2) (±0.153) (4) (±0.076) For use in horizontal and interaction comparisons only

Mean D.M. %: 82.3