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71/R/B/3 and 71/W/B/3 Rates, Forms and Methods of Applying N - Barley

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71/R/B/3 and 71/W/B/3

BARLEY

RATES, FORMS AND METHODS OF APPLYING N

Object: To study the effects of urea, liquid or solid, broadcast or injected, on the yields of barley - Rothamsted, Great Knott III (R) and Woburn, Horsepool (W).

Design: Great Knott III (R): 4 randomised blocks of 14 plots.
Horsepool (W): 3 randomised blocks of 14 plots.

Whole plot dimensions: 2.13 x 30.5. Area harvested: 0.00650.

Treatments: No nitrogen (2 plots per block) (NO) and all combinations of:-

1. Forms of nitrogen: 'Nitro-Chalk' 21% N (NC). Solid (prilled) urea 46% N (SU). Urea solution 18% N (LU).
2. Methods of applying nitrogen: Injected (I), broadcast (sprayed for LU treatment) (B).
3. Rates of nitrogen: 63 kg, 126 kg.

Basal applications: 250 kg (0:20:20) broadcast by drill. Weedkillers:-

Great Knott III (R): Paraquat at 0.56 kg ion in 225 l. Ioxynil octanoate, bromoxynil octanoate and the iso-octyl ester of dichlorprop ('Oxytril P' at 1.4 l in 225 l).
Horsepool (W): Ioxynil at 0.53 g and mecoprop at 1.58 kg in 281 l.

Cultivations, etc.:-

Great Knott III (R): Paraquat applied: 14 Oct, 1970. Ploughed: 2 - 10 Nov. Basal PK applied: 24 Feb, 1971. Treatments applied, seed drilled at 157 kg: 27 Feb. 'Oxytril P' applied: 11 May. Combine harvested: Aug 18. Variety: Julia. Previous crops: Potatoes 1969, winter wheat 1970.

Horsepool (W): Sub-soiled 142 cm wide by 61 cm deep: 11 Sept, 1970. Rotary cultivated 1st stroke: 15 - 17 Sept, 2nd stroke: 2 - 3 Oct. Deep-tine cultivated: 11 Oct. Treatments and basal PK applied, seed drilled at 157 kg: 26 Feb, 1971. Weedkiller applied: 11 May. Combine harvested: 17 Aug. Variety: Julia. Previous crops: Spring beans 1969, winter wheat 1970.

Standard errors per plot. Grain, tonnes/hectare.

Great Knott III (R): 0.195 or 3.3% (33 d.f.)
Horsepool (W): 0.288 or 5.0% (22 d.f.)

71/R/B/3 and 71/W/B/3

SUMMARY OF RESULTS

GRAIN: TONNES/HECTARE

GREAT KNIGHT III (R)

	N: KG/HA				Mean
	I	B	63	126	
	(±0.069)		(±0.069)		(±0.049)
NC	6.01	5.85	5.67	6.18	5.93
SU	5.99	6.04	5.78	6.26	6.02
LU	6.01	5.98	5.74	6.24	5.99
			(±0.056)		(±0.040)
		I	5.75	6.26	6.00
		B	5.72	6.20	5.96
Mean (±0.040)			5.73	6.23	5.98

NO 3.99 (±0.069)

General Mean: 5.70

Mean D.M. %: 84.8

71/R/B/3 and 71/W/B/3

GRAIN: TONNES/HECTARE

HORSEPOOL (W)

N: KG/HA

	I	B	63	126	Mean
	(±0.118)		(±0.118)		(±0.083)
NC	5.83	5.64	5.95	5.53	5.74
SU	5.86	5.86	6.21	5.51	5.86
LU	5.68	5.75	5.88	5.55	5.71
			(±0.096)		(±0.068)
		I	6.09	5.49	5.79
		B	5.93	5.57	5.75
Mean (±0.068)			6.01	5.53	5.77

NO 5.80 (±0.118)

General mean: 5.78

Mean D.M. %: 83.1