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# Yields of the Field Experiments 1971

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## 71/R/B/6 Weedkiller and Aqueous N - Barley

### Rothamsted Research

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71/R/B/6

BARLEY

WEEDKILLER AND AQUEOUS N

Object: To study the effects of a combined spray of liquid nitrogen fertiliser and a hormone weedkiller as a top dressing on barley - Great Knott III.

Design: 4 randomised blocks of 28 plots.

Whole plot dimensions: 2.13 x 2.74. Area harvested: 0.00038.

Treatments: All combinations of:-

1. Weedkiller (dichlorprop/MCPA): None (H0), 1.4 (H1), 2.8 (H2), 4.2 (H3) kg total a.e.
2. Forms of nitrogen: Solid, as 'Nitro-Chalk' 21% N applied immediately after the weedkiller (S), liquid, as urea/ammonium nitrate (26% N) mixed with the weedkiller (L).
3. Levels of nitrogen: 37.7, 75.3, 113.0 kg N.  
Together with 4 additional treatments  
SN2 E H0, SN2 E H1, SN2 E H2, SN2 E H3 (N2 = 75.3)  
where 'Nitro-Chalk' was applied early (E) and the H0 plots were hand weeded.

NOTE: The weedkiller was applied in 337 l where solid fertiliser was used. The liquid fertiliser (with or without weedkiller) was applied as a spray at 112, 225 and 337 l for rates 1, 2 and 3 respectively.

Basal applications: 224 kg (8:20:16) combine drilled. Weedkiller: Paraquat at 0.56 kg ion in 225 l.

Cultivations, etc.: Paraquat applied: 14 Oct, 1970. Ploughed: 2 - 10 Nov. Seed combine drilled at 157 kg: 1 Mar, 1971. N applied to E plots: 20 Apr. Remaining N treatments and weedkiller applied: 11 May. H0 plots hand weeded: 29 June. Cut by sickle: 10 Aug. Variety: Julia. Previous crops: Potatoes 1969, winter wheat 1970.

NOTE: Soil samples were taken in April for pH and the site examined for weed species. Scores were made of weedkiller scorch, growth and weed control and plots examined for ear deformities. Weeds were identified on the H0 plots. The percentage of N in grain was determined.

Standard error per plot.

Grain, tonnes/hectare: 0.373 or 6.9% (68 d.f.)

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SUMMARY OF RESULTS

GRAIN: TONNES/HECTARE

	H0	H1	H2	H3	Mean
		(±0.108)			(±0.054)
S	5.50	5.42	5.39	5.58	5.47
L	5.52	5.48	5.18	5.13	5.33
N: KG/HA		(±0.132)			(±0.066)
37.7	5.05	5.03	4.73	4.78	4.90
75.3	5.71	5.51	5.46	5.50	5.54
113.0	5.77	5.82	5.67	5.78	5.76
Mean (±0.076)	5.51	5.45	5.28	5.36	5.40

	N: KG/HA		
	37.7	75.3	113.0
		(±0.093)	
S	5.01	5.64	5.76
L	4.78	5.45	5.76

SN2 E H0 5.71  
 SN2 E H1 5.67 (±0.186)  
 SN2 E H2 5.62  
 SN2 E H3 5.44

General mean: 5.43

Mean D.M. %: 80.6

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STRAW: TONNES/HECTARE

	H0	H1	H2	H3	Mean
S	5.12	5.09	5.15	5.16	5.13
L	5.36	5.12	4.79	4.78	5.01
N: KG/HA					
37.7	4.68	4.58	4.30	4.35	4.48
75.3	5.28	5.10	5.13	5.11	5.16
113.0	5.75	5.63	5.49	5.45	5.58
Mean	5.24	5.10	4.97	4.97	5.07

N: KG/HA

	37.7	75.3	113.0
S	4.54	5.25	5.60
L	4.41	5.06	5.56

SN2 E H0 5.88  
 SN2 E H1 5.73  
 SN2 E H2 5.61  
 SN2 E H3 5.50

General mean: 5.15

Mean D.M. %: 72.3