ROTHAMSTED RESEARCH

Yields of the Field Experiments 1971

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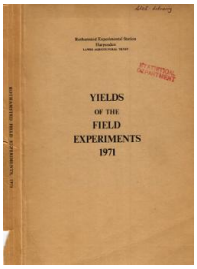

71/R/WW/5 Weedkillers and Aqueous N - W. Wheat

Rothamsted Research

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71/R/WW/5

WINTER WHEAT

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 wheat - Great Knott II.

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), 1.40 (H1), 2.80 (H2), 4.20 (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. Rates 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 in 112, 225, 337 l for rates 1, 2 and 3 respectively.

Basal applications: 377 kg (0:20:20) combine drilled.

Cultivations, etc.: Deep-tine cultivated: 6 Oct, 1970. Deep-tine cultivated second time: 7 Oct. Seed combine drilled at 202 kg: 14 Oct. N applied to E plots: 7 Apr, 1971. Remaining N treatments and weedkiller applied: 21 Apr. H0 plots hand weeded: 3 June. Cut by sickle: 18 Aug, Variety: Cappelle. Previous crops: Fallow 1969, potatoes 1970.

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NOTE: Soil samples were taken for pH in April. Scores were made of weedkiller scorch, growth and colour of crop and weed control. Weeds were identified on HO plots, and their dry matter determined. Plots were examined in July for ear deformities from spraying. Thousand grain weights and the percentage of N in grain and straw were determined.

Standard error per plot.
Grain, tonnes/hectare: 0.386 or 6.2% (69 d.f.)

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SUMMARY OF RESULTS

GRAIN: TONNES/HECTARE

	H0	H1	H2	H3	Mean
		(±0.112)			(±0.056)
S	6.29	6.35	6.38	6.41	6.36
L	6.03	6.11	5.97	6.04	6.04
N: KG/HA		(±0.137)			(±0.068)
37.7	5.65	5.42	5.62	5.63	5.58
75.3	6.34	6.38	6.26	6.47	6.36
113.0	6.49	6.88	6.65	6.59	6.65
Mean (±0.079)	6.16	6.23	6.18	6.23	6.20

N: KG/HA

	37.7	75.3	113.0
		(±0.097)	
S	5.72	6.52	6.83
L	5.44	6.20	6.47

SN2 E H0 6.63
SN2 E H1 6.41 (±0.193)
SN2 E H2 6.59
SN2 E H3 6.33

General mean: 6.24

Mean D.M. %: 81.5

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STRAW: TONNES/HECTARE

	H0	H1	H2	H3	Mean
S	9.75	9.30	9.05	9.21	9.33
L	9.37	9.03	8.71	8.68	8.95
N: KG/HA					
37.7	8.93	8.08	8.15	8.09	8.31
75.3	9.54	9.34	9.04	9.26	9.30
113.0	10.21	10.07	9.46	9.48	9.81
Mean	9.56	9.16	8.88	8.94	9.14

N: KG/HA

	37.7	75.3	113.0
S	8.46	9.56	9.96
L	8.16	9.03	9.65

SN2 E H0 10.35
SN2 E H1 10.08
SN2 E H2 9.23
SN2 E H3 10.29

General mean: 9.26

Mean D.M. %: 57.9

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