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74/R/B/14 Slow-release N - Barley

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74/R/B/14

BARLEY

SLOW-RELEASE N

Object: To compare the effects of slow-release nitrogen fertiliser ('Gold-N', sulphur-coated urea) with a conventional form ('Nitro-Chalk', ammonium nitrate/calcium carbonate) on the yield of barley - Long Hoos VI/VII.

Sponsors: D. Cox, T.M. Addiscott.

Design: 2 randomised blocks of 26 plots.

Whole plot dimensions: 4.27 x 9.14. Area harvested: 0.00195.

Treatments: All combinations of:-

1. Form and time of applying nitrogen fertiliser: N FORM(1)

'Gold-N' (sulphur-coated urea), to seedbed Gold-N/E

'Nitro-Chalk' (ammonium nitrate/calcium carbonate) to seedbed Nitro/E

2. Rate of nitrogen fertiliser (kg N): N RATE(1)

None	0
15	15
30	30
45	45
60	60
75	75
90	90
105	105
120	120

plus all combinations of:-

1. Form and time of applying nitrogen fertiliser: N FORM(2)

'Nitro-Chalk', half to seedbed (3 Apr) and half in mid-May (23 May) Nitro/EL

'Nitro-Chalk', all in mid-May (23 May) Nitro/L

2. Rate of nitrogen fertiliser (kg N): N RATE(2)

30	30
60	60
90	90
120	120

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Basal applications: Manures: (0:20:20) at 190 kg combine drilled.
Weedkiller: Dicamba with mecoprop and MCPA ('Tetralix Plus' at 7.0 l in 220 l).

Seed: Julia, dressed with ethirimol, sown at 160 kg.

Cultivations, etc.:— Ploughed: 20 Nov, 1973. Spring-tine cultivated: 23 Nov. Power harrowed and seed sown: 4 Apr, 1974. Weedkiller applied: 28 May. Combine harvested: 21 Aug. Previous crops: Winter wheat 1972, fallow 1973.

NOTE: The percentage of N in the crop was determined at growth stages 3, 7 and 10.5.

Standard error per plot.

Grain, tonnes/hectare: 0.179 or 2.8% (26 d.f.)

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TABLES OF MEANS

GRAIN: TONNES/HECTARE

N RATE(1)

	0	15	30	45	60	75	90	105	120	Mean
N FORM(1)										
Gold-N/E		6.37	6.57	6.44	6.44	6.49	6.24	6.52	6.39	6.43
Nitro/E		6.63	6.54	6.22	6.48	6.18	6.34	5.97	6.24	6.32
Mean	6.54	6.50	6.55	6.33	6.46	6.34	6.29	6.24	6.32	6.40

N RATE(2)

	30	60	90	120	Mean
N FORM(2)					
Nitro/EL	6.44	6.44	5.98	5.95	6.20
Nitro/L	6.48	6.49	6.06	5.83	6.22
Mean	6.46	6.46	6.02	5.89	6.21

STANDARD ERRORS OF DIFFERENCES

N FORM(1)	N RATE(1)	N FORM(1) N RATE(1)	N FORM(2)	N RATE(2)	N FORM(2) N RATE(2)
0.063	0.127	0.179	0.090	0.127	0.179
Between any of N RATE(1)	v	any of N RATE(2)	0.127		
Between any of N FORM(1)		any of N FORM(2)			
x	v	x	0.179		
N RATE(1)		N RATE(2)			

Grand mean 6.34

Mean D.M. % 83.8

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STRAW: TONNES/HECTARE

N RATE(1)

	0	15	30	45	60	75	90	105	120	Mean
N FORM(1)										
Gold-N/E		4.20	4.41	3.79	3.90	4.11	3.97	4.05	4.00	4.05
Nitro/E		3.80	4.13	4.09	4.40	4.72	4.52	4.12	4.63	4.30
Mean	3.81	4.00	4.27	3.94	4.15	4.42	4.25	4.08	4.32	4.14

N RATE(2)

	30	60	90	120	Mean
N FORM(2)					
Nitro/EL	4.01	4.01	3.90	4.25	4.04
Nitro/L	3.86	3.93	4.30	4.15	4.06
Mean	3.94	3.97	4.10	4.20	4.05

GRAND MEAN 4.11

Mean D.M. % 89.2