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71/R/M/4 N P Fertiliser (Phenylphosphonic Acid) for Barley - Mixed Crops

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71/R/M/4

BARLEY

NP FERTILISER (PHENYLPHOSPHONIC ACID) FOR BARLEY

Object: To study the effects of phenylphosphonic acid on barley -
West Barnfield I.

Design: 3 randomised blocks of 18 plots.

Whole plot dimensions: 1.83 x 3.66. Area harvested: 0.00026.

Treatments: All combinations of:-

1. Varieties: Julia (J), Sultan (S).
2. Nitrogen: 56 kg (N1), 112 kg (N2) as 'Nitro-Chalk'.
3. Seed treated with phenylphosphonic acid: Untreated (P0),
0.25 (P1), 0.5 (P2), 1.0 (P4) % of weight of seed.

Two additional treatments were included, SN1A1, SN2A1 (where A1 was phenylphosphonic acid at 2% sprayed over seed by Scottish Agricultural Industries).

Basal applications: 336 kg (0:20:20). Weedkillers: Paraquat at 0.28 kg ion in 225 l, and later at 0.56 kg ion in 225 l. 2,4-D at 0.56 kg plus dichlorprop at 2.24 kg in 449 l.

Cultivations, etc.: Paraquat applied: 19 Sept, 1970. Ploughed: 24 Sept. Paraquat applied: 5 Feb, 1971. N and basal PK applied, seed drilled at 191 kg: 12 Mar. 2,4-D/dichlorprop applied: 5 May. Harvested by hand: 17 Aug. Previous crops: Spring oilseed rape 1969, winter wheat 1970.

Standard error per plot.

Barley: Grain, tonnes/hectare: 0.383 or 9.6% (30 d.f.)

71/R/M/4

SUMMARY OF RESULTS

	N1	N2	P0	P1	P2	P4	Mean
GRAIN: TONNES/HECTARE							
	(±0.111)		(±0.156)				(±0.078)
J	4.41	4.81	4.57	4.71	4.70	4.45	4.61
S	3.50	3.30	3.50	3.37	3.49	3.24	3.40
			(±0.156)				(±0.078)
		N1	3.96	4.18	3.88	3.80	3.96
		N2	4.11	3.90	4.31	3.89	4.05
Mean (±0.111)			4.04	4.04	4.09	3.85	4.00

SN1A1 3.55 (±0.221)
 SN2A1 3.58

	N1	N2	P0	P1	P2	P4	Mean
STRAW: TONNES/HECTARE							
J	4.85	5.73	5.32	5.33	5.15	5.37	5.29
S	4.05	4.45	4.33	4.35	4.37	3.95	4.25
		N1	4.48	4.67	4.35	4.29	4.45
		N2	5.17	5.00	5.17	5.03	5.09
Mean			4.82	4.84	4.76	4.66	4.77

SN1A1 4.08
 SN2A1 4.67

General mean: Grain: 3.96
 Straw: 4.73

Mean D.M. %: Grain: 84.3
 Straw: 86.7