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## Yields of the Field Experiments 1972

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### 72/R/B/10 Barley Methods of Applying Phenylphosphonic Acid

#### Rothamsted Research

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72/R/B/10

BARLEY

METHODS OF APPLYING PHENYLPHOSPHONIC ACID

Object: To study the effects of a range of rates of phenylphosphonic acid, applied as a seed dressing or foliar spray, on yield and nitrogen uptake of barley - Pastures.

Sponsor: A. Penny.

Design: 3 randomised blocks of 16 plots.

Whole plot dimensions: 1.83 x 3.66. Area harvested: 0.00032.

Treatments: All combinations of:-

1. Rates of phenylphosphonic acid (PPA): None (0), 0.28 kg (1), 0.57 kg (2), 1.13 kg (4).
2. Methods of application: As a seed dressing (D), as a spray in 300 l at 5 leaf stage on 16 May (S).
3. Levels of N: 56, 112 kg as 'Nitro-Chalk'.

Basal applications: 310 kg (0:20:20) broadcast on the seedbed.

Weedkillers: Paraquat at 5.6 kg ion in 220 l. Dichlorprop plus MCPA ('Mephetol Plus' at 5.6 l in 340 l).

Seed: Julia, dressed ethirimol, sown at 140 kg.

Cultivations, etc.: Paraquat applied: 2 Oct, 1971. Ploughed: 23 Nov.

N and basal PK applied: 23 Mar, 1972. Seed drilled: 24 Mar.

'Mephetol Plus' applied: 18 May. Cut by sickle: 17 Aug.

Previous crops: Beans 1970, barley 1971.

NOTE: Green crop samples were taken on 3 July, 1972 for total dry matter and % N. Grain and straw were sampled at harvest for % N.

Standard error per plot.

Grain, tonnes/hectare: 0.337 or 5.5% (34 d.f.)

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TABLES OF MEANS

GRAIN: TONNES/HECTARE

	PPA				METHOD		Mean
	0	1	2	4	D	S	
N: KG/HA							
56	6.00	6.10	6.24	6.10	6.07	6.23	6.11
112	5.77	6.22	6.33	5.89	6.11	6.18	6.05
			PPA				
				0			5.88
				1	6.24	6.08	6.16
				2	6.31	6.25	6.28
				4	5.71	6.29	6.00
Mean					6.09	6.21	6.08

Mean D.M. %: 80.3

NOTE: The N x METHOD table is meaned over PPA1, 2 and 4 only.

STANDARD ERRORS OF DIFFERENCES

N	PPA	METHOD	N	N	PPA
			PPA	METHOD	METHOD
0.097	0.138	0.122	0.195	0.159	0.195



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SPRAW: TONNES/HECTARE

	PPA				METHDD		Mean
	0	1	2	4	D	S	
N: KG/HA							
56	6.00	6.23	6.38	6.02	6.08	6.35	6.16
112	6.94	7.13	6.55	6.38	6.58	6.79	6.75
				PPA			
				0			6.47
				1	6.51	6.84	6.68
				2	6.48	6.45	6.46
				4	5.99	6.42	6.20
Mean					6.33	6.57	6.45

Mean D.M. %: 57.0

NOTE: The N x METHDD table is meaned over PPA1, 2 and 4 only.