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

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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.