

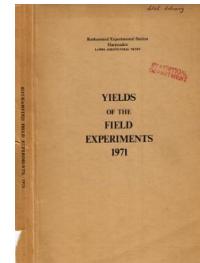
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71/R/M/4 N P Fertiliser (Phenylphosphonic Acid) for Barley - Mixed Crops

Rothamsted Research

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T/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 3.50	4.81 3.30	4.57 3.50	4.71 3.37	4.70 3.49	4.45 3.24	4.61 3.40
S				(±0.156)		(±0.078)	
			N1 N2	3.96 4.11	4.18 3.90	3.88 4.31	3.80 3.89
							3.96 4.05
Mean	(±0.111)		4.04	4.04	4.09	3.85	4.00

SN1A1 3.55 (±0.221)
SN2A1 3.58

STRAW: TONNES/HECTARE

	4.85 4.05	5.73 4.45	5.32 4.33	5.33 4.35	5.15 4.37	5.37 3.95	5.29 4.25
			N1 N2	4.48 5.17	4.67 5.00	4.35 5.17	4.29 5.03
							4.45 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