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86/R/CS/319 Nitrophosphates - S. Barley

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86/R/CS/319

NITROPHOSPHATES

Object: To study the residual effects of different amounts of water soluble phosphate in nitrophosphate fertilizers on growth and P uptake of s. barley following potatoes - Highfield V.

Sponsor: K.H.G. Copestake.

Design: 3 randomised blocks of 13 plots.

The second year, s. barley.

For previous year see 85/R/P/5.

Whole plot dimensions: 3.0 x 21.0.

Treatments: All combinations of:-

1. P SOL Phosphate water solubility (%):

59	Compound fertilizer (16.4 : 14.2 : 17.5) with 59% of the P205 water soluble
73	Compound fertilizer (15.9 : 16.2 : 15.3) with 73% of the P205 water soluble
95	Compound fertilizer (15.0 : 15.0 : 15.0) with 95% of the P205 water soluble

2. P RATE(85) Rate of phosphate (kg P205) applied in 1985:

50
100
150
200

plus one extra treatment:

EXTRA

NONE No phosphate fertilizer

NOTE: The compound fertilizers used to apply the phosphate treatments in 1985 supplied differing amounts of the total 231 kg N and 242 kg K2O required on all plots. Additional amounts of N (as 'Nitrotop' 33.5% N) and K2O (as muriate of potash 60% K2O) were applied as needed to achieve this total. Combinations of P SOL 59 with P RATE 150 and 200 each received a total of 247 kg K2O in error.

Basal applications: Manures: 'Nitrotop' (33.5% N) at 360 kg. Muriate of potash at 120 kg. Weedkillers: Clopyralid at 0.05 kg, bromoxynil octanoate at 0.24 kg and mecoprop at 2.1 kg applied with the fungicide in 200 l. Fungicide: Tridemorph at 0.52 kg.

Seed: Klaxon, sown at 160 kg.

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Cultivations, etc.:- Heavy spring-tine cultivated twice: 12 Nov, 1985.
N and K applied, spring-tine cultivated, rotary harrowed, seed sown:
30 Apr, 1986. Weedkillers with fungicide applied: 2 June. Combine
harvested: 6 Sept.

NOTE: Emergence and stem counts were made. Green crop and sheaf samples
were taken for fresh and dry weight measurements. Components of
yield were measured. P contents of crop and soil were determined
after harvest.

GRAIN TONNES/HECTARE

***** TABLES OF MEANS *****

P RATE(85)	50	100	150	200	MEAN
P SOL					
59	7.70	8.00	7.46	7.24	7.60
73	7.18	7.19	7.18	7.72	7.32
95	6.57	7.02	7.11	7.60	7.07
MEAN	7.15	7.40	7.25	7.52	7.33
NONE	6.60				
GRAND MEAN	7.27				

***** STANDARD ERRORS OF DIFFERENCES OF MEANS *****

TABLE	P SOL	P RATE(85)	P SOL P RATE(85) & NONE
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SED	0.205	0.237	0.411

***** STRATUM STANDARD ERRORS AND COEFFICIENTS OF VARIATION *****

STRATUM	DF	SE	CV%
BLOCK.WP	24	0.503	6.9
GRAIN MEAN DM%	84.6		
PLOT AREA HARVESTED	0.00224		