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71/R/CS/68 Ammonium Phosphates - Ryegrass

Rothamsted Research

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71/R/CS/68

AMMONIUM PHOSPHATES

Object: To study the residual P effects of different forms of NP fertilisers, applied in 1970 to grass - West Barnfield II.

The second year, ryegrass.

For previous year see 70/R/M/4(t).

Whole plot dimensions: 1.5 x 2.7. Area harvested: 0.00022.

The area in barley 1970 was abandoned. The area in ryegrass was continued

Treatments:

To the four plots per block which did not receive N or P in 1970, all combinations of:-

1. 'Nitro-Chalk': None (0), 112 kg N (N) for each cut.

2. Superphosphate: None (0), 11.2 kg P (P) in spring.

Remaining plots received 'Nitro-Chalk' only at 112 kg N for each cut.

Basal applications: 112 kg K as potassium chloride.

Cultivations, etc.: Basal K and first N applied: 8 Mar, 1971.

Cut 3 times: 12 May, 28 June, 7 Sept. N applied after first 2 cuts. Variety: S22 Italian Ryegrass.

NOTE: Crop samples were taken for determination of nitrogen percentage.

Standard errors per plot. Dry matter: tonnes/hectare.

1st cut: 0.276 or 5.8% (22 d.f.)

2nd cut: 0.205 or 6.5% (22 d.f.)

3rd cut: 0.168 or 9.2% (22 d.f.)

Total of 3 cuts: 0.527 or 5.4% (22 d.f.)

71/R/CS/68

SUMMARY OF RESULTS

DRY MATTER: TONNES/HECTARE

	A	M	D	T	Mean
1ST CUT					
(±0.159)					
1+N	4.98	4.93	4.72	4.73	4.84
2+N	4.88	4.88	5.16	5.25	5.04
2	4.55	4.49	4.67	4.40	4.53
Mean (±0.092)	4.81	4.77	4.85	4.79	4.80

O 0.89
 N 4.07 (±0.159)
 P 1.02
 NP 4.53

General mean: 4.26
 Mean D.M. %: 19.6

2ND CUT

	(±0.118)				(±0.059)
1+N	2.94	3.03	3.06	2.90	2.98
2+N	3.00	2.90	3.36	2.93	3.05
2	3.59	3.22	3.47	3.26	3.39
Mean (±0.068)	3.18	3.05	3.30	3.03	3.14

O 0.97
 N 3.11 (±0.118)
 P 1.08
 NP 3.50

General mean: 2.90
 Mean D.M. %: 19.7

71/R/CS/68

DRY MATTER: TONNES/HECTARE

	A	M	D	T	Mean
3RD CUT					
(±0.097)					
1+N	2.03	1.78	1.67	1.89	1.84
2+N	1.67	1.88	1.99	1.81	1.84
2	1.75	1.90	1.85	1.73	1.81
Mean (±0.056)	1.82	1.85	1.84	1.81	1.83

O 0.67
 N 1.63 (±0.097)
 P 0.73
 NP 1.78

General mean: 1.67
 Mean D.M. %: 39.2

TOTAL OF 3 CUTS

(±0.304)					
(±0.152)					
1+N	9.95	9.74	9.45	9.52	9.66
2+N	9.55	9.66	10.51	9.99	9.93
2	9.89	9.61	10.00	9.38	9.72
Mean (±0.176)	9.80	9.67	9.98	9.63	9.77

O 2.53
 N 8.81 (±0.304)
 P 2.83
 NP 9.81

General mean: 8.83
 Mean D.M. %: 26.2