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72/R/CS/24 Pk and Take-all - Barley

Rothamsted Research

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72/R/CS/24

PK AND TAKE-ALL

Object: To study the effects of different amounts of phosphate, potash and nitrogen fertiliser on the yields and incidence of take-all (*Gaeumannomyces graminis* formerly *Ophiobolus graminis*) in continuous barley - West Barnfield II.

Sponsors: G.E.G. Mattingly, D.B. Slope.

The fifth year, barley.

For previous years see 68/C/16(t), 69/R/CS/24, 70/R/CS/24(t), and 71/R/CS/24.

Whole plot dimensions: 5.33 x 20.1. Sub plot area harvested: 0.00264.

Seed: Julia sown at 160 kg.

Cultivations, etc.: Sprayed with paraquat at 0.42 kg ion in 220 l: 24 Sept, 1971. Ground chalk applied at 5000 kg: 1 Nov. Ploughed: 12 Nov. N, P and K applied, seed drilled: 29 Mar, 1972. Sprayed with ioxynil, bromoxynil, 2,4-DP and MCPA ('Tetroxone' at 5.6 l in 220 l): 17 May. Combine harvested: 24 Aug.

NOTE: Samples were taken in spring and summer for estimation of incidence of root-rotting diseases.

Standard error per plot (pooled).

Grain, tonnes/hectare: 0.717 or 18.2% (39 d.f.)

72/R/CS/24

TABLES OF MEANS

GRAIN: TONNES/HECTARE

	0	1	P 4	6*	24*	Mean
K						
1	2.78	3.97	4.28	3.74	4.03	3.76
4	3.33	4.10	4.59	4.00	4.56	4.12
N						
1	2.86	3.59	4.12	3.76	4.74	3.81
2	2.58	4.00	5.02	3.90	3.89	3.88
3	3.75	3.78	4.14	3.94	4.92	4.10
4	3.01	4.78	4.46	3.91	3.63	3.96
Mean	3.05	4.04	4.44	3.87	4.29	3.94

	1	2	N 3	4
K				
1	3.35	4.23	3.59	3.87
4	4.28	3.53	4.61	4.05

* Applied 1968 only

STANDARD ERRORS OF DIFFERENCES

P	K	N	P K	P N	K N
0.254	0.161	0.227	0.359	0.508	0.321

Mean D.M. %: 81.9

72/R/CS/24

GRAIN: TONNES/HECTARE

K	1					4				
	0	1	4	6*	24*	0	1	4	6*	24*
N										
1	2.47	3.69	3.74	2.66	4.22	3.26	3.50	4.51	4.85	5.26
2	3.07	3.97	5.05	4.84	4.25	2.10	4.03	5.00	2.96	3.54
3	2.58	3.38	4.04	3.67	4.29	4.91	4.18	4.23	4.20	5.55
4	2.99	4.85	4.31	3.81	3.37	3.04	4.71	4.61	4.00	3.90

* Applied 1968 only

STANDARD ERROR OF DIFFERENCES

P
K
N

0.718

72/R/CS/24

STRAW: TONNES/HECTARE

	0	1	P 4	6*	24*	Mean
K						
1	3.13	4.11	4.25	3.73	4.27	3.90
4	3.30	4.09	4.75	3.94	4.62	4.14
N						
1	2.97	3.38	3.14	3.32	3.85	3.33
2	2.94	4.20	4.73	3.79	4.41	4.02
3	3.42	4.28	5.34	4.18	4.90	4.42
4	3.53	4.54	4.79	4.03	4.63	4.30
Mean	3.22	4.10	4.50	3.83	4.45	4.02

	1	2	N 3	4
K				
1	3.25	4.02	4.21	4.12
4	3.41	4.01	4.64	4.49

Mean D.M. %: 87.0

K	1					4				
P	0	1	4	6*	24*	0	1	4	6*	24*
N										
1	2.98	3.25	3.35	3.08	3.61	2.96	3.52	2.94	3.57	4.08
2	2.96	4.26	4.67	3.90	4.32	2.92	4.14	4.80	3.69	4.50
3	3.10	4.28	4.60	4.10	4.96	3.74	4.28	6.09	4.26	4.84
4	3.47	4.67	4.40	3.84	4.21	3.59	4.41	5.19	4.23	5.05

* Applied 1968 only