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71/R/CS/24 P K and Take-all - Barley

Rothamsted Research

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71/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 (*Ophiobolus graminis*) in continuous barley - West Barnfield II.

The fourth year, barley.

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

Whole plot dimensions: 5.33 x 20.1. Sub plot area harvested: 0.00266.

Cultivations, etc.: Sprayed with paraquat at 0.28 kg ion in 225 l: 18 Sept, 1970. Ploughed: 25 Sept. N, P and K applied: 4 Mar, 1971. Seed drilled at 157 kg: 11 Mar. Sprayed with ioxynil octanoate, bromoxynil octanoate and the iso-octyl ester of dichlorprop ('Oxytril P' at 1.4 l in 225 l): 11 May. Combine harvested: 17 Aug. Variety: Julia.

NOTE: Estimates of take-all (*Ophiobolus graminis*) and eyespot (*Cercospora herpotrichoides*) were made in early July.

Standard errors per plot. Grain, tonnes/hectare:

Whole plot: 0.519 or 10.6% (17 d.f.)

Sub plot: 0.450 or 9.2% (20 d.f.)

Pooled (used for calculation of standard errors in summary):
0.598 or 12.2% (37 d.f.)

71/R/CS/24

SUMMARY OF RESULTS

GRAIN: TONNES/HECTARE

	P0	P1	P4	P6*	P24*	Mean
			(±0.211)			(±0.095)
K1	3.70	5.10	5.62	4.59	5.54	4.91
K4	3.67	4.77	5.52	5.07	5.56	4.92
			(±0.299)			(±0.134)
N1	3.42	4.77	5.43	4.99	5.71	4.86
N2	3.31	4.96	6.03	4.78	5.70	4.96
N3	4.19	4.85	5.35	5.08	5.79	5.05
N4	3.82	5.16	5.47	4.47	5.00	4.79
Mean (±0.149)	3.69	4.94	5.57	4.83	5.55	4.91
	N1	N2	N3	N4		
			(±0.189)			
K1	4.68	5.26	4.80	4.89		
K4	5.05	4.65	5.30	4.68		

* Applied 1968 only

Mean D.M. %: 82.1

71/R/CS/24

GRAIN: TONNES/HECTARE

	K1					K4				
	P0	P1	P4	P6*	P24*	P0	P1	P4	P6*	P24*
	(±0.423)									
N1	3.71	4.60	5.23	4.23	5.64	3.13	4.95	5.63	5.75	5.77
N2	3.79	5.51	6.27	4.89	5.85	2.83	4.41	5.78	4.67	5.56
N3	3.31	4.70	5.48	4.77	5.76	5.07	5.01	5.21	5.39	5.82
N4	3.98	5.61	5.49	4.47	4.90	3.66	4.71	5.45	4.48	5.11

* Applied 1968 only

71/R/CS/24

STRAW: TONNES/HECTARE

	P0	P1	P4	P6*	P24*	Mean
K1	2.90	3.87	3.89	3.57	4.23	3.69
K4	2.66	4.05	4.37	3.73	4.34	3.83
N1	2.48	3.20	3.55	3.31	3.62	3.23
N2	2.37	4.26	4.30	3.25	4.26	3.69
N3	3.05	4.17	4.17	4.20	4.65	4.05
N4	3.23	4.22	4.51	3.83	4.60	4.08
Mean	2.78	3.96	4.13	3.65	4.28	3.76

	N1	N2	N3	N4
K1	3.16	3.58	4.00	4.02
K4	3.30	3.79	4.10	4.13

* Applied 1968 only

Mean D.M. %: 80.4

71/R/CS/24

STRAW: TONNES/HECTARE

	K1					K4				
	P0	P1	P4	P6*	P24*	P0	P1	P4	P6*	P24*
N1	2.62	2.96	3.23	3.21	3.77	2.34	3.43	3.86	3.42	3.47
N2	2.65	4.16	4.05	3.06	4.00	2.08	4.36	4.54	3.45	4.52
N3	2.70	4.13	3.88	4.33	4.94	3.40	4.21	4.45	4.07	4.35
N4	3.62	4.23	4.39	3.69	4.20	2.84	4.21	4.64	3.96	5.01

* Applied 1968 only