ROTHAMSTED RESEARCH

Yields of the Field Experiments 1975

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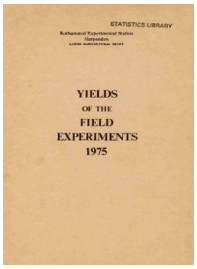

75/ R/CS/24 - Pk & Take-all - Wheat

Rothamsted Research

Rothamsted Research (1976) *75/ R/CS/24 - Pk & Take-all - Wheat ;* Yields Of The Field Experiments 1975, pp 167 - 170 **- DOI: https://doi.org/10.23637/ERADOC-1-141**

75/R/CS/24

PK AND TAKE-ALL

Object: To study the effects of different amounts of phosphate and potassium fertiliser on the yields and incidence of take-all (Gaeumannomyces graminis) in continuous wheat - West Barnfield II.

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The eighth year, continuous winter wheat (after continuous barley 1968-1973).

For previous years see 68/C/16(t), 69/R/CS/24, 70/R/CS/24(t) and 71-74/R/CS/24.

Design: 4 randomised blocks of 10 plots, split into 2.

Whole plot dimensions: 5.33 x 20.1.

Treatments: All combinations of:-

Whole plots: 1. Phosphate (kg P) as superphosphate:

	P
None	0
15 annually	15 A
60 annually	60 A
90 six-yearly, last applied autumn 1973	90 S
360 six-yearly, last applied autumn 1973	360 S

2. Potassium (kg K) annually as muriate of potash:

	K
30	30
120	120

Sub plots: 3. Residues of nitrogen fertiliser, applied annually 1970-1973 (kg N) as 'Nitro-Chalk':

	N RESID
(37.5)	37.5
(75.0)	75.0
(113)	113
(150)	150

Basal applications: Manures: 'Nitro-Chalk' at 500 kg. Weedkillers: Glyphosate at 1.7 kg in 220 l, and dicamba with mecoprop and MCPA ('Banlene Plus' 5.6 l in 220 l).

Seed: Cappelle, sown at 200 kg.

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Cultivations, etc.:- Glyphosate applied: 30 Sept, 1974. Ploughed: 17 Oct. Annual P and K applied: 2 Dec. Seed sown: 6 Dec. N applied: 23 Apr, 1975. 'Banlene Plus' applied: 12 May. Combine harvested: 14 Aug.

NOTE: Samples were taken in May and July for estimation of take-all. Soil samples were taken in autumn for P and K analyses.

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75/R/CS/24

GRAIN TONNES/HECTARE

*** TABLES OF MEANS ***

N RESID / K	37.5	75.0	113	150	MEAN
30	5.05	4.92	5.25	4.86	5.02
120	5.41	4.68	5.25	4.87	5.05
MEAN	5.23	4.80	5.25	4.86	5.04

P / K	0	15 A	60 A	90 S	360 S	MEAN
30	4.35	5.06	5.45	5.08	5.17	5.02
120	4.30	5.04	5.37	5.17	5.38	5.05
MEAN	4.33	5.05	5.41	5.12	5.27	5.04

P / N RESID	0	15 A	60 A	90 S	360 S	MEAN
37.5	4.76	5.01	5.53	5.53	5.31	5.23
75.0	3.84	5.12	5.12	4.88	5.06	4.80
113	4.65	5.25	5.09	5.58	5.67	5.25
150	4.05	4.82	5.90	4.50	5.05	4.86
MEAN	4.33	5.05	5.41	5.12	5.27	5.04

K / P	N RESID	0	15 A	60 A	90 S	360 S
30	37.5	4.76	4.69	5.51	5.23	5.06
	75.0	3.98	5.19	5.09	5.28	5.08
	113	4.51	5.25	5.09	5.31	6.10
	150	4.16	5.10	6.10	4.48	4.43
120	37.5	4.75	5.33	5.56	5.84	5.57
	75.0	3.70	5.04	5.15	4.48	5.05
	113	4.79	5.26	5.09	5.86	5.25
	150	3.94	4.54	5.70	4.51	5.66

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

TABLE	K	N RESID	P	K / N RESID
SED	0.169	0.239	0.267	0.340

TABLE	K / P	N RESID / P	K / N RESID / P
SED	0.377	0.533	0.792

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GRAIN TONNES/HECTARE

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

STRATUM	DF	SE	CV%
BLOCK.WP+BLOCK.WP.SP	37	0.754	15.0

GRAIN MEAN DM% 87.7

STRAW TONNES/HECTARE

*** TABLES OF MEANS ***

N RESID	37.5	75.0	113	150	MEAN
K					
30	3.86	4.00	4.28	3.80	3.99
120	4.35	4.31	4.24	4.13	4.26
MEAN	4.11	4.15	4.26	3.97	4.12

P	0	15 A	60 A	90 S	360 S	MEAN
K						
30	3.28	4.08	4.27	4.11	4.20	3.99
120	3.38	4.31	4.64	4.30	4.65	4.26
MEAN	3.33	4.20	4.46	4.20	4.42	4.12

P	0	15 A	60 A	90 S	360 S	MEAN
N RESID						
37.5	3.69	3.78	4.55	4.15	4.36	4.11
75.0	3.17	4.47	4.27	4.37	4.47	4.15
113	3.22	4.61	4.28	4.50	4.70	4.26
150	3.24	3.92	4.71	3.79	4.17	3.97
MEAN	3.33	4.20	4.46	4.20	4.42	4.12

P		0	15 A	60 A	90 S	360 S
K	N RESID					
30	37.5	3.76	3.19	4.56	3.93	3.87
	75.0	3.16	4.22	3.71	4.45	4.44
	113	3.17	4.88	4.18	4.38	4.80
	150	3.02	4.01	4.64	3.67	3.67
120	37.5	3.61	4.36	4.55	4.38	4.84
	75.0	3.17	4.73	4.84	4.29	4.50
	113	3.28	4.34	4.38	4.62	4.59
	150	3.46	3.83	4.78	3.90	4.67

STRAW MEAN DM% 91.9

SUB PLOT AREA HARVESTED 0.00270

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