ROTHAMSTED RESEARCH

Yields of the Field Experiments 1977

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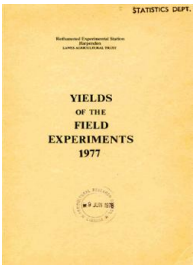

77/R/CS/24 P K and Take-all - Wheat

Rothamsted Research

Rothamsted Research (1978) *77/R/CS/24 P K and Take-all - Wheat ;* Yields Of The Field Experiments 1977, pp 139 - 141 **- DOI: https://doi.org/10.23637/ERADOC-1-29**

77/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.

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

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

For previous years see 'Details' 1973 and 74-76/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. P Phosphate (kg P) as superphosphate:

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

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

30
120

Sub plots

3. N RESID Residues of nitrogen fertiliser, applied annually 1970-1973 (kg N):

38
75
113
150

Basal applications: Manures: 'Nitro-Chalk' at 500 kg. Weedkillers: Dicamba with mecoprop and MCPA ('Banlene Plus' at 4.9 l in 220 l).

Seed: Cappelle, sown at 200 kg.

Cultivations, etc.:- Ploughed: 13 Sept, 1976. Heavy spring-tine cultivated: 3 Nov. P and K applied: 4 Nov. Seed sown: 5 Nov. N applied: 15 Apr, 1977. Weedkillers applied: 9 May. Combine harvested: 8 Sept.

NOTE: The crop was sampled in July to assess take-all.

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77/R/CS/24

GRAIN TONNES/HECTARE

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

P / K	0	15 A	60 A	90 S	360 S	MEAN
30	4.62	4.44	4.90	4.58	4.77	4.66
120	4.46	5.24	5.24	5.17	5.12	5.05
MEAN	4.54	4.84	5.07	4.88	4.95	4.85

N RESID / K	38	75	113	150	MEAN
30	4.62	4.62	4.73	4.67	4.66
120	5.12	4.88	5.24	4.95	5.05
MEAN	4.87	4.75	4.99	4.81	4.85

N RESID / P	38	75	113	150	MEAN
0	4.85	4.09	4.87	4.33	4.54
15 A	4.74	4.92	4.96	4.75	4.84
60 A	4.85	5.03	5.06	5.34	5.07
90 S	4.99	4.78	4.91	4.83	4.88
360 S	4.92	4.93	5.13	4.91	4.95
MEAN	4.87	4.75	4.99	4.81	4.85

K	N RESID / P	38	75	113	150
30	0	4.76	4.42	4.71	4.58
	15 A	4.33	4.64	4.40	4.39
	60 A	4.77	4.60	4.91	5.33
	90 S	4.42	4.76	4.46	4.67
	360 S	4.84	4.67	5.17	4.41
120	0	4.94	3.76	5.03	4.09
	15 A	5.14	5.19	5.53	5.11
	60 A	4.94	5.46	5.22	5.36
	90 S	5.55	4.79	5.35	5.00
	360 S	5.00	5.19	5.08	5.21

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

TABLE	P	K	N RESID	P K
SED	0.137	0.087	0.123	0.194

TABLE	P N RESID	K N RESID	P K N RESID
SED	0.274	0.174	0.407

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

STRATUM	DF	SE	CV%
BLOCK.WP+BLOCK.WP.SP	37	0.387	8.0

GRAIN MEAN DM% 80.5

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77/R/CS/24

STRAW TONNES/HECTARE

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

P / K	0	15 A	60 A	90 S	360 S	MEAN
30	3.76	3.66	4.34	3.95	4.28	4.00
120	3.92	4.87	5.07	4.86	5.16	4.77
MEAN	3.84	4.27	4.70	4.40	4.72	4.39

N RESID / K	38	75	113	150	MEAN
30	3.88	3.82	4.10	4.19	4.00
120	4.84	4.73	4.69	4.83	4.77
MEAN	4.36	4.28	4.39	4.51	4.39

N RESID / P	38	75	113	150	MEAN
0	4.31	3.43	4.05	3.56	3.84
15 A	4.21	4.42	4.07	4.36	4.27
60 A	4.53	4.56	4.60	5.11	4.70
90 S	4.38	4.16	4.46	4.61	4.40
360 S	4.38	4.81	4.77	4.91	4.72
MEAN	4.36	4.28	4.39	4.51	4.39

K	N RESID / P	38	75	113	150
30	0	3.98	3.33	4.02	3.72
	15 A	3.57	3.79	3.37	3.90
	60 A	4.18	3.84	4.56	4.76
	90 S	3.68	3.73	4.09	4.29
	360 S	4.00	4.42	4.45	4.27
120	0	4.65	3.53	4.09	3.41
	15 A	4.85	5.05	4.78	4.82
	60 A	4.88	5.28	4.65	5.46
	90 S	5.08	4.60	4.83	4.92
	360 S	4.77	5.20	5.09	5.56

STRAW MEAN DM% 90.6

SUB PLOT AREA HARVESTED 0.00270

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