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Numerical Results of the Field Experiments 1970

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70/R/CS/24 P, K and Take-all - Barley

Rothamsted Research

Rothamsted Research (1971) *70/R/CS/24 P, K and Take-all - Barley* ; Numerical Results Of The Field Experiments 1970, pp 166 - 170 - DOI: <https://doi.org/10.23637/ERADOC-1-59>

P, K AND TAKE-ALL

(70/R/CS/24)

P, K and take-all (*Ophiobolus graminis*), West Barnfield II 1970, the third year, barley. For treatments etc. and for the previous years' results see 'Results' 68/C/16 and 69/R/CS/24.

Design: 2 replicates of 5x2x4 in 4 blocks of 10 plots split into 2 for N.

Area of each sub plot: 0.0127. Area harvested: 0.0067.

N test: A test of 0.3 (N1), 0.6 (N2), 0.9 (N3), 1.2 (N4) cwt N as 'Nitro-Chalk' is now applied to half plots. The test is cumulative in successive years.

Basal applications: Manures: None. Weedkiller: 2,4-D at 0.5 lb and dichlorprop at 2 lb in 20 gals.

Cultivations, etc.: Ploughed: 29 Sept, 1969. N, P and K applied: 25 Mar, 1970. Seed drilled at 140 lb: 31 Mar. Weedkiller applied: 18 May. Combine harvested: 15 Aug. Variety: Julia.

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

Standard errors per plot.

Grain, cwt: Whole plot: 1.91 or 5.7% (17 d.f.)
Sub plot: 2.21 or 6.6% (20 d.f.)
Pooled (used for calculation of standard errors in summary): 2.45 or 7.3% (37 d.f.)

70/R/CS/24

SUMMARY OF RESULTS

GRAIN: CWT

| | P0 | P1 | P4 | P6* | P24* | Mean |
|--------------|------|------|---------|------|------|---------|
| | | | (±0.86) | | | (±0.39) |
| K1 | 24.4 | 33.0 | 38.0 | 31.7 | 37.7 | 33.0 |
| K4 | 24.5 | 31.3 | 38.6 | 34.2 | 40.3 | 33.8 |
| | | | (±1.22) | | | (±0.55) |
| N1 | 24.4 | 30.8 | 35.4 | 32.0 | 36.6 | 31.8 |
| N2 | 23.0 | 32.3 | 40.2 | 31.9 | 39.7 | 33.4 |
| N3 | 26.3 | 33.6 | 39.6 | 34.0 | 40.2 | 34.7 |
| N4 | 24.2 | 32.2 | 37.9 | 33.9 | 39.5 | 33.5 |
| Mean (±0.61) | 24.5 | 32.2 | 38.3 | 33.0 | 39.0 | 33.4 |
| | N1 | N2 | N3 | N4 | | |
| | | | (±0.77) | | | |
| K1 | 31.9 | 33.2 | 33.9 | 33.0 | | |
| K4 | 31.8 | 33.7 | 35.6 | 34.0 | | |

* Applied 1968 only

Mean D.M. %: 86.1

70/R/GS/24

GRAIN: CWT

| | K1 | | | | | K4 | | | | |
|----|---------|------|------|------|------|------|------|------|------|------|
| | P0 | P1 | P4 | P6 | P24 | P0 | P1 | P4 | P6 | P24 |
| | (±1.73) | | | | | | | | | |
| N1 | 24.2 | 31.5 | 34.4 | 31.9 | 37.4 | 24.5 | 30.1 | 36.4 | 32.1 | 35.8 |
| N2 | 25.1 | 32.9 | 40.5 | 30.1 | 37.2 | 20.9 | 31.6 | 39.9 | 33.7 | 42.3 |
| N3 | 22.7 | 34.1 | 38.9 | 33.4 | 40.2 | 29.8 | 33.0 | 40.2 | 34.7 | 40.1 |
| N4 | 25.6 | 33.8 | 38.1 | 31.5 | 36.1 | 22.7 | 30.6 | 37.7 | 36.3 | 42.8 |

70/R/CS/24

STRAW: CWT

| | P0 | P1 | P4 | P6* | P24* | Mean |
|------|------|------|------|------|------|------|
| K1 | 9.2 | 11.7 | 14.8 | 11.8 | 13.9 | 12.3 |
| K4 | 10.8 | 13.5 | 17.9 | 14.4 | 17.3 | 14.8 |
| N1 | 9.4 | 11.4 | 12.7 | 12.0 | 13.7 | 11.8 |
| N2 | 8.9 | 13.1 | 17.8 | 13.1 | 15.7 | 13.7 |
| N3 | 11.5 | 14.1 | 16.7 | 13.1 | 15.9 | 14.3 |
| N4 | 10.1 | 11.9 | 18.2 | 14.4 | 16.9 | 14.3 |
| Mean | 10.0 | 12.6 | 16.3 | 13.1 | 15.6 | 13.5 |
| | N1 | N2 | N3 | N4 | | |
| K1 | 11.3 | 12.4 | 13.1 | 12.3 | | |
| K4 | 12.3 | 15.1 | 15.4 | 16.3 | | |

* Applied 1968 only

Mean D.M. %: 88.8

70/R/CS/24

STRAW: CWT

| | K1 | | | | | K4 | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|
| | PO | P1 | P4 | P6 | P24 | PO | P1 | P4 | P6 | P24 |
| N1 | 9.8 | 11.3 | 11.2 | 11.2 | 13.0 | 8.9 | 11.4 | 14.2 | 12.7 | 14.4 |
| N2 | 9.1 | 12.1 | 15.9 | 10.8 | 14.0 | 8.7 | 14.2 | 19.7 | 15.3 | 17.4 |
| N3 | 8.9 | 12.7 | 16.2 | 12.4 | 15.1 | 14.2 | 15.4 | 17.2 | 13.7 | 16.7 |
| N4 | 8.9 | 10.7 | 15.7 | 12.8 | 13.3 | 11.3 | 13.1 | 20.6 | 16.0 | 20.6 |