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Numerical Results of the Field Experiments 1970

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70/R/WW/1 and 70/W/WW/1 Winter Wheat Varieties X N

Rothamsted Research

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WINTER WHEAT

(70/R/WW/1 and 70/W/WW/1)

Varieties x N, Rothamsted (R) Great Knott III (pathogen free) and West Barnfield II (pathogen infected), and Woburn (W) Great Hill Bottom I (pathogen free) 1970.

Design: Great Knott III (R) and West Barnfield II (R): 3 randomised blocks of 8 plots, split into 4.
Great Hill Bottom I (W): 4 randomised blocks of 8 plots, split into 4.

Area of each sub-plot: Great Knott III (R) and West Barnfield II (R): 0.0096. Area harvested: 0.0064.
Great Hill Bottom I (W): 0.0024. Area harvested: 0.0016.

Treatments: All combinations of:-

- Whole plots: 1. Varieties: Champlain (CH), Cama (CM), Cappelle (CP), Joss Cambier (JC), Maris Beacon (MB), Maris Ranger (MR), Maris Widgeon (MW), West Desprez (WD).
Sub plots: 2. Nitrogen (in cwt N): 0.5 (N1), 1.0 (N2), 1.5 (N3) in spring, and 1.0 in spring plus 0.5 at flowering (N2 + 1). All N as 'Nitro-Chalk'.

Basal applications:

- Great Knott III (R) and West Barnfield II (R): 280 lb (8:20:16) combine drilled. Weedkiller: 2,4-D at 0.5 lb and dichlorprop at 2 lb in 20 gals.
Great Hill Bottom I (W): 280 lb (8:20:16). Weedkiller: Ioxynil at 9 oz and mecoprop at 27 oz in 25 gals.

Cultivations, etc.:-

- Great Knott III (R): Deep-tine cultivated: 21 Oct, 1969. Seed combine drilled at 180 lb: 23 Oct. Spring N applied: 8 May, 1970. Weedkiller applied: 13 May. Late N applied: 9 June. Combine harvested: 28 Aug. Previous crops: Spring beans 1968, potatoes 1969.
West Barnfield II (R): Ploughed: 29 Sept, 1969. Rotary cultivated, seed combine drilled at 180 lb: 10 Nov. Weedkiller applied: 8 May, 1970. Spring N applied: 13 May. Late N applied: 9 June. Combine harvested: 28 Aug. Previous crops: Barley 1968 and 1969.

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Great Hill Bottom I (W): Spring-tine cultivated: 24 Oct, 1969.
Seed drilled at 170 lb: 27 Oct. Basal NPK applied: 28 Oct.
Spring N applied: 28 Apr, 1970. Weedkiller applied: 7 May.
Late N applied: 8 June. Combine harvested: 14 Aug. Previous
crops: Sugar beet and barley 1968, potatoes 1969.

Standard errors per plot.

| | |
|----------------------------------|------------------------------------|
| Grain, cwt: Great Knott III (R): | Whole plot: 1.74 or 3.7% (14 d.f.) |
| | Sub plot: 2.24 or 4.8% (48 d.f.) |
| West Barnfield II (R): | Whole plot: 1.71 or 6.3% (14 d.f.) |
| | Sub plot: 3.63 or 13.4% (48 d.f.) |
| Great Hill Bottom I (W): | Whole plot: 1.90 or 3.5% (21 d.f.) |
| | Sub plot: 3.48 or 6.4% (72 d.f.) |

70/R&T/WV/1

SUMMARY OF RESULTS

GRAIN: CWT

| | CH | CM | CP | JC | MB | MR | MW | WD | Mean |
|---------------------|------|------|------|------|------|------|------|------|---------|
| GREAT KNOTT III (R) | | | | | | | | | |
| (1) and (2) | | | | | | | | | (±0.46) |
| N1 | 45.0 | 45.4 | 38.4 | 47.0 | 50.0 | 45.1 | 38.9 | 45.0 | 44.3 |
| N2 | 50.6 | 46.8 | 42.5 | 49.1 | 54.8 | 46.1 | 42.9 | 48.6 | 47.7 |
| N3 | 51.7 | 44.3 | 42.8 | 51.7 | 53.3 | 44.2 | 43.8 | 47.2 | 47.4 |
| N2+1 | 50.4 | 43.6 | 44.7 | 50.3 | 54.4 | 43.7 | 42.3 | 50.1 | 47.4 |
| Mean (±1.01) | 49.4 | 45.0 | 42.1 | 49.5 | 53.1 | 44.8 | 42.0 | 47.7 | 46.7 |

(1) (±1.51) For use in horizontal and diagonal comparisons only
 (2) (±1.29) For use in vertical and interaction comparisons only

Mean D.M. %: 86.0

WEST BARNFIELD II (R)

| | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|---------|
| (1) and (2) | | | | | | | | | (±0.74) |
| N1 | 24.4 | 20.2 | 21.3 | 26.7 | 28.9 | 25.0 | 29.9 | 25.2 | 25.2 |
| N2 | 30.3 | 22.6 | 26.4 | 31.8 | 29.0 | 30.3 | 29.6 | 22.3 | 27.8 |
| N3 | 30.1 | 25.2 | 24.3 | 29.7 | 27.0 | 30.0 | 26.3 | 28.9 | 27.7 |
| N2+1 | 26.9 | 22.8 | 27.1 | 31.0 | 33.1 | 26.4 | 27.5 | 25.0 | 27.5 |
| Mean (±0.99) | 27.9 | 22.7 | 24.8 | 29.8 | 29.5 | 27.9 | 28.3 | 25.4 | 27.0 |

(1) (±2.06) For use in horizontal and diagonal comparisons only
 (2) (±2.09) For use in vertical and interaction comparisons only

Mean D.M. %: 85.0

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GRAIN: CWT

GREAT HILL BOTTOM I (W)

| | CH | CM | CP | JC | MB | MR | MW | WD | Mean |
|--------------|-------------|------|------|------|------|------|------|------|---------|
| | (1) and (2) | | | | | | | | (±0.62) |
| N1 | 46.2 | 50.2 | 47.4 | 49.7 | 52.3 | 46.2 | 47.7 | 50.3 | 48.7 |
| N2 | 52.6 | 56.8 | 56.5 | 53.4 | 61.2 | 54.8 | 49.7 | 55.2 | 55.0 |
| N3 | 62.1 | 52.3 | 58.7 | 55.6 | 63.8 | 57.8 | 53.8 | 57.0 | 57.6 |
| N2+1 | 56.0 | 54.3 | 58.2 | 57.0 | 59.2 | 52.8 | 49.3 | 52.8 | 55.0 |
| Mean (±0.95) | 54.2 | 53.4 | 55.2 | 53.9 | 59.1 | 52.9 | 50.1 | 53.8 | 54.1 |

- (1) (±1.78) For use in horizontal and diagonal comparisons only
 (2) (±1.74) For use in vertical and interaction comparisons only

Mean D.M. %: 83.1