

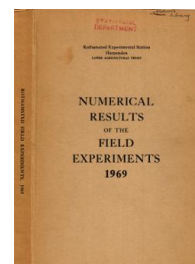
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## Numerical Results of the Field Experiments 1969

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### 69/R&W/M/2 - Inocula & N - Beans and Spring Wheat - Mixed Crop

#### Rothamsted Research

Rothamsted Research (1970) *69/R&W/M/2 - Inocula & N - Beans and Spring Wheat - Mixed Crop* ;  
Numerical Results Of The Field Experiments 1969, pp 327 - 332 - DOI:

<https://doi.org/10.23637/ERADOC-1-96>

### INOCULA AND N

(69/R/M/2 and 69/W/M/2)

Beans and spring wheat - Rothamsted (R) Stackyard and Woburn (W)  
Horsepool.

Design: 4 blocks of 4 plots split into 4 sub plots with confounding.

Area of each sub plot: 0.0011. Area harvested Stackyard (R): 0.0003.  
Horsepool (W): 0.0003.

Treatments: All combinations of:-

- Whole plots: 1. Beans, seed inoculum (Rhizobium leguminosarum): None (O), ineffective strain 1019 (I), effective strain 1038 (E). Spring wheat (SW).
- Sub plots: 2. Fertiliser: Unmanured (U), 360 lb of compound fertiliser (0:14:28) plus 1 ton ground chalk Stackyard (R) 1.5 tons Horsepool (W), (M).
3. Nitrogen: None (O), 1.0 (N1), 2.0 (N2), 3.0 (N3) cwt N as 'Nitro-Chalk', half in the seedbed, and half top dressed.

Standard applications: Weedkiller: Simazine to beans at 1 lb in 40 gals.  
Insecticide: Dimethoate to beans at 0.4 fl oz in 3 gals.

Cultivations, etc.:

Stackyard (R): Ploughed: 25 Oct, 1968. Ground chalk, PK and first half N applied: 27 Mar, 1969. Beans drilled at 200 lb, spring wheat drilled at 180 lb: 2 Apr. Weedkiller applied: 11 Apr. Remaining half N applied: 5 May. First harvest: 7 July. Insecticide applied: 30 July. Second harvest: 4 Aug. Varieties: Spring beans - Tarvin, spring wheat - Kolibri. Previous crops: Barley 1967, fallow 1968.

Horsepool (W): Ploughed: 4 Dec, 1968. Ground chalk, PK, and first half N applied: 8 Apr, 1969. Beans drilled at 200 lb, spring wheat drilled at 180 lb: 9 Apr. Weedkiller applied: 11 Apr. Remaining half N applied: 8 May. First harvest: 8 July. Insecticide applied: 30 July. Second harvest: 7 Aug. Varieties: Spring beans - Tarvin, spring wheat - Kolibri. Previous crops: Potatoes 1967, winter wheat 1968.

- NOTES: (1) Soil samples were taken for pH determination in February, and Rhizobium counts in February and June.
- (2) Grain yields were not taken - separate part plots were harvested green on two occasions.
- (3) Dry matter and % N determinations were made on crop produce.

Standard errors per plot: Dry matter, cwt:

|                         |             |      |    |       |           |
|-------------------------|-------------|------|----|-------|-----------|
| Stackyard (R): 1st cut: | Whole plot: | 1.22 | or | 3.2%  | (6 d.f.)  |
|                         | Sub plot:   | 5.20 | or | 13.4% | (24 d.f.) |
| 2nd cut:                | Whole plot: | 5.33 | or | 9.3%  | (6 d.f.)  |
|                         | Sub plot:   | 6.76 | or | 11.8% | (24 d.f.) |
| Horsepool (W): 1st cut: | Whole plot: | 3.66 | or | 7.6%  | (6 d.f.)  |
|                         | Sub plot:   | 5.88 | or | 12.3% | (24 d.f.) |
| 2nd cut:                | Whole plot: | 5.04 | or | 7.5%  | (6 d.f.)  |

SUMMARY OF RESULTS

STACKYARD (R)

DRY MATTER: CWT

|              | O           | I    | E    | SW   | Mean    |
|--------------|-------------|------|------|------|---------|
|              | 1ST CUT     |      |      |      |         |
|              | (1) and (2) |      |      |      | (±0.92) |
| U            | 27.4        | 24.9 | 27.0 | 70.3 | 37.4    |
| M            | 29.2        | 28.1 | 24.0 | 78.8 | 40.0    |
|              | (3) and (4) |      |      |      | (±1.30) |
| N0           | 29.4        | 23.7 | 24.5 | 47.4 | 31.2    |
| N1           | 28.1        | 27.9 | 25.9 | 80.5 | 40.6    |
| N2           | 27.0        | 26.5 | 26.1 | 84.8 | 41.1    |
| N3           | 28.8        | 28.0 | 25.3 | 85.6 | 41.9    |
| Mean (±0.61) | 28.3        | 26.5 | 25.5 | 74.6 | 38.7    |

(1) (±1.44) (3) (±2.33) For use in horizontal and diagonal comparisons only

(2) (±1.84) (4) (±2.60) For use in vertical and interaction comparisons only

Mean D.M. %: 18.7

STACKYARD (R)

DRY MATTER: CWT

|              | O    | I    | E    | SW    | Mean    |
|--------------|------|------|------|-------|---------|
| 2ND CUT      |      |      |      |       |         |
| (1) and (2)  |      |      |      |       | (±1.19) |
| U            | 47.7 | 42.2 | 40.5 | 101.1 | 57.9    |
| M            | 39.7 | 43.9 | 40.8 | 102.7 | 56.8    |
| (3) and (4)  |      |      |      |       | (±1.69) |
| NO           | 41.8 | 35.6 | 39.6 | 74.5  | 47.9    |
| N1           | 46.3 | 47.0 | 41.6 | 111.8 | 61.6    |
| N2           | 42.9 | 48.7 | 39.5 | 105.6 | 59.2    |
| N3           | 43.9 | 40.9 | 42.0 | 115.7 | 60.6    |
| Mean (±2.67) | 43.7 | 43.1 | 40.7 | 101.9 | 57.3    |

(1) (±3.16) (3) (±3.96) For use in horizontal and diagonal comparisons only  
 (2) (±2.39) (4) (±3.38) For use in vertical and interaction comparisons only

Mean D.M. %: 26.8

HORSEPOOL (W)

DRY MATTER: CWT

|              | O           | I    | E    | SW   | Mean    |
|--------------|-------------|------|------|------|---------|
|              | 1ST CUT     |      |      |      |         |
|              | (1) and (2) |      |      |      | (±1.04) |
| U            | 38.3        | 38.4 | 37.6 | 74.2 | 47.1    |
| M            | 39.7        | 39.6 | 37.2 | 78.7 | 48.8    |
|              | (3) and (4) |      |      |      | (±1.47) |
| NO           | 35.8        | 36.9 | 35.0 | 59.4 | 41.8    |
| N1           | 43.4        | 41.0 | 36.4 | 80.5 | 50.3    |
| N2           | 37.0        | 37.1 | 38.2 | 82.2 | 48.6    |
| N3           | 39.8        | 41.0 | 40.1 | 84.0 | 51.2    |
| Mean (±1.83) | 39.0        | 39.0 | 37.4 | 76.5 | 48.0    |

(1) (±2.35) (3) (±3.14) For use in horizontal and diagonal comparisons only  
 (2) (±2.08) (4) (±2.94) For use in vertical and interaction comparisons only

Mean D.M. %: 18.5

HORSEPOOL (W)  
DRY MATTER: CWT

|                     | O    | I    | E    | SW    | Mean |
|---------------------|------|------|------|-------|------|
| 2ND CUT             |      |      |      |       |      |
| (1) and (2)         |      |      |      |       |      |
| U                   | 60.8 | 60.2 | 58.1 | 87.2  | 66.6 |
| M                   | 60.5 | 57.9 | 56.0 | 97.4  | 67.9 |
| (3) and (4)         |      |      |      |       |      |
| NO                  | 56.3 | 58.8 | 52.3 | 65.2  | 58.2 |
| N1                  | 65.0 | 61.1 | 56.4 | 97.4  | 70.0 |
| N2                  | 59.2 | 60.9 | 59.7 | 93.5  | 68.3 |
| N3                  | 62.3 | 55.3 | 59.6 | 113.1 | 72.6 |
| Mean ( $\pm 2.52$ ) | 60.7 | 59.0 | 57.0 | 92.3  | 67.3 |

(1) ( $\pm 3.11$ ) (3) ( $\pm 4.05$ ) For use in horizontal and diagonal comparisons only  
 (2) ( $\pm 2.58$ ) (4) ( $\pm 3.65$ ) For use in vertical and interaction comparisons only

Mean D.M. %: 30.8