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## Yields of the Field Experiments 1963

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### 63/R/NL/B/9 N Levels and Residues Two Course Rotation

#### Rothamsted Research

Rothamsted Research (1964) *63/R/NL/B/9 N Levels and Residues Two Course Rotation* ; Yields Of The Field Experiments 1963, pp 113 - 115 - DOI: <https://doi.org/10.23637/ERADOC-1-183>

63/B/9.1

## N LEVELS AND RESIDUES ROTATION

(NL)

Direct and residual effects of sulphate of ammonia - Long Hoos III 1963, the fourth year.

Rotation: Wheat, potatoes.

Design (each crop): 3 x 3 x 3 in 3 blocks of 9 plots each.

Area of each plot: 0.0212 acres. Area harvested: 0.0141 acres.

Treatments. All combinations of:-

Nitrogen at 3 levels in 1963.

Nitrogen at 3 levels in 1960, and repeated on the same plots in 1962.

Nitrogen at 3 levels in 1961.

To wheat: None, 0.5, 1.0 cwt N per acre.

To potatoes: None, 0.75, 1.50 cwt N per acre.

The nitrogen was applied as sulphate of ammonia.

Note: Ground chalk in addition to basal dressing was applied at 1 cwt for each cwt of sulphate of ammonia applied during the years 1960, 1961 and 1962.

Basal dressings (per acre):

To wheat: 2.25 cwt compound fertiliser (14%  $P_{2}O_{5}$ , 28%  $K_{2}O$ ), combine drilled.

To potatoes: 5 cwt compound fertiliser (14%  $P_{2}O_{5}$ , 28%  $K_{2}O$ ), broadcast on flat.

Cultivations, etc.:

Wheat: Corrective dressings of ground chalk applied: Oct 11, 1962.

Basal ground chalk applied at 30 cwt per acre: Oct 22. Ploughed: Nov 15. Seed drilled at 3.25 bushels per acre: Dec 17. Sulphate of ammonia applied: Apr 26, 1963. Sprayed with mecoprop/2,4-D at 3.2 pints in 40 gallons per acre: May 21. Combine harvested: Sept 10. Variety: Cappelle.

Potatoes: Corrective dressings of ground chalk applied: Oct 11, 1962.

Basal ground chalk applied at 30 cwt per acre: Oct 22. Ploughed: Nov 14. Basal fertiliser broadcast on flat: Apr 30, 1963. Sulphate of ammonia applied: May 4. Potatoes planted: May 6. Earthed up:

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June 27. Sprayed with maneb at 1.2 lb in 20 gallons per acre:  
 July 11. Sprayed with copper oxychloride fungicide at 2.3 lb copper  
 in 20 gallons per acre: Sept 3. Sprayed with undiluted BOV at 16  
 gallons per acre: Sept 12. Lifted: Oct 8. Variety: Majestic.

Note: For details of the previous years' results see 'Results of the  
 Field Experiments' 60/B/10, 61/B/9 and 62/B/9.

Standard errors per plot.

Wheat, Grain (at 85% dry matter): 2.60 cwt per acre or 7.9% (15 d.f.)  
 Potatoes, Total tubers: 0.566 tons per acre or 4.8% (15 d.f.)

Summary of Results

Wheat, Grain (at 85% dry matter): cwt per acre

| N: cwt per<br>acre in 1961 | N: cwt per acre in<br>1960 and 1962 |      |      | N: cwt per acre in<br>1963 |      |      | Mean    |
|----------------------------|-------------------------------------|------|------|----------------------------|------|------|---------|
|                            | None                                | 0.75 | 1.50 | None                       | 0.5  | 1.0  |         |
|                            | (±1.50)                             |      |      | (±1.50)                    |      |      | (±0.87) |
| None                       | 29.8                                | 30.7 | 36.8 | 25.1                       | 33.2 | 38.9 | 32.4    |
| 0.5                        | 28.3                                | 32.5 | 36.7 | 26.0                       | 30.5 | 41.1 | 32.5    |
| 1.0                        | 28.2                                | 35.0 | 38.2 | 27.9                       | 34.8 | 38.8 | 33.8    |
|                            | N: cwt per acre in<br>1960 and 1962 |      |      |                            |      |      |         |
|                            |                                     | None |      | 19.9                       | 30.7 | 35.7 | 28.8    |
|                            |                                     | 0.75 |      | 27.2                       | 32.1 | 38.9 | 32.7    |
|                            |                                     | 1.50 |      | 31.9                       | 35.7 | 44.2 | 37.3    |
|                            | Mean (±0.87)                        |      |      | 26.3                       | 32.8 | 39.6 | 32.9    |

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Potatoes

| N: cwt per acre in 1961                  | N: cwt per acre in 1960 and 1962 |       |       | N: cwt per acre in 1963 |       |       | Mean     |
|--|----------------------------------|-------|-------|-------------------------|-------|-------|----------|
|  | None                             | 0.5   | 1.0   | None                    | 0.75  | 1.50  |          |
| <u>Total tubers: tons per acre</u>       |                                  |       |       |                         |       |       |          |
|  | (±0.327)                         |       |       | (±0.327)                |       |       | (±0.189) |
| None                                     | 11.19                            | 11.54 | 12.06 | 8.62                    | 12.44 | 13.72 | 11.59    |
| 0.75                                     | 11.44                            | 11.89 | 12.26 | 8.80                    | 12.52 | 14.27 | 11.86    |
| 1.50                                     | 12.35                            | 11.54 | 12.43 | 8.84                    | 13.45 | 14.03 | 12.10    |
|  | N: cwt per acre in 1960 and 1962 |       |       |                         |       |       |          |
|  |                                  | None  |       | 8.21                    | 12.43 | 14.34 | 11.66    |
|  |                                  | 0.5   |       | 8.67                    | 12.87 | 13.42 | 11.65    |
|  |                                  | 1.0   |       | 9.38                    | 13.11 | 14.26 | 12.25    |
|  | Mean (±0.189)                    |       |       | 8.75                    | 12.80 | 14.01 | 11.85    |
| <u>Percentage ware (1.5 inch riddle)</u> |                                  |       |       |                         |       |       |          |
| None                                     | 95.1                             | 94.3  | 94.9  | 93.2                    | 95.3  | 95.9  | 94.8     |
| 0.75                                     | 94.6                             | 95.7  | 95.5  | 94.0                    | 95.8  | 95.9  | 95.2     |
| 1.50                                     | 94.7                             | 96.1  | 95.3  | 94.1                    | 95.7  | 96.2  | 95.3     |
|  | N: cwt per acre in 1960 and 1962 |       |       |                         |       |       |          |
|  |                                  | None  |       | 93.7                    | 95.3  | 95.3  | 94.8     |
|  |                                  | 0.5   |       | 93.8                    | 95.8  | 96.5  | 95.4     |
|  |                                  | 1.0   |       | 93.8                    | 95.7  | 96.1  | 95.2     |
|  | Mean                             |       |       | 93.8                    | 95.6  | 96.0  | 95.1     |