

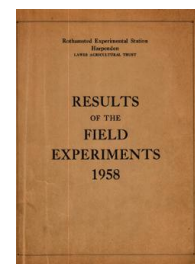
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# Yields of the Field Experiments 1958

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## 58/W/CB/6 Barley - K and Residual N Fertilizers

### Rothamsted Research

Rothamsted Research (1959) *58/W/CB/6 Barley - K and Residual N Fertilizers* ; Yields Of The Field Experiments 1958, pp 99 - 100 - DOI: <https://doi.org/10.23637/ERADOC-1-181>

BARLEY

Residual effects of nitrogenous fertilizers and direct effect of potash  
- Long Hoos I, II and III 1958.

Design: 4 randomized blocks of 16 plots each, plots being split into 2  
for the application of potash.

Area of each sub plot: 0.0038 acres. Area harvested: 0.0032 acres.

Treatments: All combinations of:-

Applied to ryegrass. (whole plots):

None (2 plots per block) together with all combinations of:-

Materials and methods of application

Applied in 1 single dressing:

|                    |                          |
|--------------------|--------------------------|
| Formalized casein, | 12.2% N in 1956          |
| " "                | 12.2% N in 1957          |
| Casein,            | 12.6% N in 1956 and 1957 |

Applied in 4 dressings of one quarter the single rate:

|                    |                          |
|--------------------|--------------------------|
| Ammonium sulphate, | 21.0% N in 1957          |
| " "                | 21.0% N in 1956 and 1957 |
| Urea,              | 43.5% N in 1956 and 1957 |
| Calcium nitrate,   | 15.5% N in 1956 and 1957 |

Rates of application

0.75; 1.5 cwt N per acre

Applied to barley (1958). (sub plots):

K: None; 1.0 cwt K<sub>2</sub>O per acre as muriate of potash.

Basal dressing: 3 cwt compound fertilizer (9% N, 18% P<sub>2</sub>O<sub>5</sub>) per acre  
combine drilled with seed.

Cultivations, etc.: Ploughed: Nov 28, 1957. Seed combine drilled at  
2½ bushels per acre, muriate of potash applied: Mar 22, 1958.

Sprayed with MCPA at 5 pints in 40 gallons per acre: May 27.

Harvested: Aug 11. Variety: Proctor. Previous crop: Ryegrass.

Standard errors per plot. Grain (at 85% dry matter):

Whole plot: 2.10 cwt per acre or 7.8% (46 d.f.)

Sub plot: 1.76 cwt per acre or 6.6% (49 d.f.)

Summary of Results

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

| Level of N<br>in fertilizer:<br>cwt per acre | Fertilizer |                 |           |                 |                  |           |          |           | Mean           |
|--|------------|-----------------|-----------|-----------------|------------------|-----------|----------|-----------|----------------|
|  | None       | Single dressing |           |                 | Divided dressing |           |          |           |                |
|  |            | 1956<br>F       | 1957<br>F | 1957<br>C       | 1957<br>A        | 1956<br>A | and<br>U | 1957<br>N |                |
| Mean ( $\pm 0.74$ )                          | 25.5       | 25.4            | 31.9      | 26.2            | 25.7             | 24.7      | 27.9     | 26.9      | 26.8           |
|  |            |                 |           | ( $\pm 1.05$ )  |                  |           |          |           |                |
| 0.75   | -          | 24.2            | 30.9      | 26.3            | 25.1             | 23.8      | 27.0     | 23.5      | 25.8           |
| 1.50   | -          | 26.7            | 33.0      | 26.2            | 26.4             | 25.6      | 28.9     | 30.3      | 28.2           |
| Diff. ( $\pm 1.48$ )                         |            | +2.5            | +2.1      | -0.1            | +1.3             | +1.8      | +1.9     | +6.8      | +2.4           |
|  |            |                 |           | ( $\pm 0.86$ *) |                  |           |          |           | ( $\pm 0.56$ ) |
| K <sub>2</sub> O: cwt per<br>acre            |            |                 |           |                 |                  |           |          |           |                |
| None   | 25.9       | 25.0            | 31.5      | 25.3            | 25.6             | 23.7      | 28.0     | 26.0      | 26.4           |
| 1.0  | 25.1       | 25.8            | 32.4      | 27.1            | 25.9             | 25.7      | 27.9     | 27.8      | 27.2           |
| Diff. ( $\pm 0.88$ )                         | -0.8       | +0.8            | +0.9      | +1.8            | +0.3             | +2.0      | -0.1     | +1.8      | +0.8           |
|  |            |                 |           |                 |                  |           |          |           | ( $\pm 0.31$ ) |

Straw (at 85% dry matter): cwt per acre

| Level of N<br>in fertilizer:<br>cwt per acre | None | F    | C    | A    | A    | U    | N    | Mean |      |
|--|------|------|------|------|------|------|------|------|------|
| Mean   | 21.6 | 23.4 | 29.7 | 23.5 | 22.8 | 22.4 | 25.4 | 24.0 | 24.1 |
| 0.75   | -    | 22.2 | 27.0 | 25.1 | 23.2 | 21.6 | 23.6 | 20.8 | 23.4 |
| 1.50   | -    | 24.5 | 32.4 | 22.0 | 22.5 | 23.3 | 27.2 | 27.1 | 25.6 |
| Diff.  |      | +2.3 | +5.4 | -3.1 | -0.7 | +1.7 | +3.6 | +6.3 | +2.2 |
| K <sub>2</sub> O: cwt per<br>acre            |      |      |      |      |      |      |      |      |      |
| None   | 22.2 | 22.9 | 29.2 | 22.0 | 21.8 | 21.8 | 25.3 | 22.8 | 23.5 |
| 1.0  | 21.0 | 23.8 | 30.2 | 25.0 | 23.9 | 23.1 | 25.5 | 25.2 | 24.7 |
| Diff.  | -1.2 | +0.9 | +1.0 | +3.0 | +2.1 | +1.3 | +0.2 | +2.4 | +1.2 |

Treatments

- F = Formalized casein 12.2% N
- C = Casein 12.6% N
- A = Ammonium sulphate 21.0% N
- U = Urea 43.5% N
- N = Calcium nitrate 15.5% N

Mean dry matter % as harvested:

- Grain, 77.3
- Straw, 67.0

\*For use in horizontal and diagonal comparisons only.