ROTHAMSTED RESEARCH

# Yields of the Field Experiments 1963

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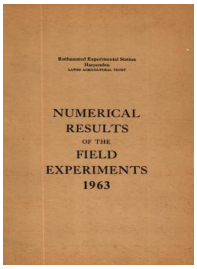


## 63/R/LL/C/3 and 63/W/WLL/C/3 Long-term Liming - Spring Beans

### Rothamsted Research

Rothamsted Research (1964) *63/R/LL/C/3 and 63/W/WLL/C/3 Long-term Liming - Spring Beans ;* Yields Of The Field Experiments 1963, pp 135 - 138 **- DOI: https://doi.org/10.23637/ERADOC-1-183**

63/C/3.1

# LONG TERM LIMING EXPERIMENT - SPRING BEANS 1963

## (LL and WLL)

Effect of lime on the yield and composition of crops and on the status of P and K in soils - Rothamsted (R) Sawyers I and Woburn (W) Stackyard Series C 1963, the second year.

Design (each field): 2 randomised blocks of 16 plots each.

Area of each plot (acres): 0.0289. Area harvested: 0.0121.

Treatments. All combinations of:-

Ground chalk (tons per acre): Sawyers I (R): None, 2, 4 applied in March 1962 (O, A and B), 8 (6 in March 1962, 2 in winter 1962 - 63 in divided dressings) (C). Stackyard Series C (W): None, 2 applied in Spring 1962 (O and A), 4.75 (4 in spring, 0.75 in October 1962) (B), 7.5 (6 in spring, 1.5 in October 1962) (C).

P: None, 0.5 cwt $P_2O_5$ per acre as superphosphate (cumulative).

K: None, 1.0 cwt $K_2O$ per acre as muriate of potash (cumulative).

The pH ranges between plots after harvest 1962 were as follows:-

| Field | Chalk per acre (Spring 1962) | pH range |
|---|---|---|
| Sawyers I (R) | None | 4.8 - 5.2 |
| | 2 tons | 6.0 - 6.4 |
| | 4 tons | 6.8 - 7.2 |
| | 6 tons | 7.1 - 7.4 |
| Stackyard Series C (W) | None | 5.7 - 6.2 |
| | 2 tons | 6.7 - 7.1 |
| | 4 tons | 7.1 - 7.4 |
| | 6 tons | 7.2 - 7.4 |

Cultivations, etc.

Sawyers I (R): Ground chalk applied at 1 ton per acre to 'C' plots: Dec 4, 1962. Ploughed: Mar 27, 1963. Ground chalk applied at 1 ton per acre to 'C' plots: Apr 1. Superphosphate and muriate of potash applied: Apr 3. Seed drilled at 200 lb per acre: Apr 8. Sprayed with simazine at 1 lb in 40 gallons per acre: Apr 18. Sprayed with demeton-methyl at 6 fluid oz in 40 gallons per acre: June 14. Combine harvested: Oct 18. Variety: Tick 30B. Previous crops: Potatoes and fallow 1960, potatoes and fallow 1961.

Stackyard Series C (W): Ploughed: Oct 12, 1962. Ground chalk applied at 0.75 tons per acre to 'B' plots and at 1.5 tons per acre to 'C' plots: Oct 19. Superphosphate and muriate of potash applied: Mar 13, 1963. Seed drilled at 200 lb per acre: Mar 27. Sprayed with simazine at 1 lb in 40 gallons per acre: Apr 8. Sprayed with demeton-methyl at 6 fluid oz in 40 gallons per acre: June 13. Combine harvested: Sept 21. Variety: Tick 30B. Previous crops: Barley 1960, sugar beet 1961.

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Notes: (1) Samples were taken for counts of pods and beans.
(2) For details of the previous year's results see 'Numerical Results of the Field Experiments' 62/C/8.

Standard errors per plot. Grain (at 85% dry matter):
Sawyers I (R) 3.42 cwt per acre or 17.8% (15 d.f.)
Stackyard Series C(W) 2.37 cwt per acre or 15.1% (15 d.f.)

## Summary of Results

### Sawyers I (R)

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

| | Ground chalk: tons per acre | | | | |
|---|---|---|---|---|---|
| | None | 2 | 4 | 8 | Mean |
| Mean (±1.21) | 10.7 | 20.7 | 23.0 | 22.5 | 19.2 |
| $P_2O_5$: cwt per acre | | (±1.71) | | | |
| None | 10.3 | 22.5 | 22.5 | 21.1 | 19.1 |
| 0.5 | 11.1 | 18.8 | 23.5 | 23.9 | 19.3 |
| Diff. (±2.42) | +0.8 | -3.7 | +1.0 | +2.8 | +0.2 (±1.21) |
| $K_2O$: cwt per acre | | | | | |
| None | 10.5 | 19.1 | 21.9 | 20.8 | 18.0 |
| 1.0 | 11.0 | 22.3 | 24.1 | 24.2 | 20.4 |
| Diff. (±2.42) | +0.5 | +3.2 | +2.2 | +3.4 | +2.4 (±1.21) |

| | $P_2O_5$: cwt per acre | |
|---|---|---|
| | None | 0.5 |
| $K_2O$ cwt per acre | (±1.21) | |
| None | 18.4 | 17.7 |
| 1.0 | 19.8 | 20.9 |

Mean dry matter % as harvested: 68.7

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Sawyers I (R)

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

| | Ground chalk: tons per acre | | | | |
|---|---|---|---|---|---|
| | None | 2 | 4 | 8 | Mean |
| Mean | 7.6 | 14.1 | 17.3 | 14.8 | 13.5 |
| $P_2O_5$: cwt per are | | | | | |
| None | 7.3 | 14.4 | 17.0 | 14.2 | 13.2 |
| 0.5 | 7.9 | 13.8 | 17.6 | 15.4 | 13.7 |
| Diff. | +0.6 | -0.6 | +0.6 | +1.2 | +0.5 |
| $K_2O$: cwt per acre | | | | | |
| None | 7.4 | 13.1 | 15.4 | 11.8 | 11.9 |
| 1.0 | 7.8 | 15.1 | 19.2 | 17.9 | 15.0 |
| Diff. | +0.4 | +2.0 | +3.8 | +6.1 | +3.1 |

| | $P_2O_5$: cwt per acre | |
|---|---|---|
| | None | 0.5 |
| $K_2O$: cwt per acre | | |
| None | 12.0 | 11.8 |
| 1.0 | 14.4 | 15.6 |

Mean dry matter % as harvested: 46.2

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63/C/3.4

## Stackyard Series C (W)

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

| | Ground chalk: tons per acre | | | | |
|---|---|---|---|---|---|
| | None | 2.00 | 4.75 | 7.50 | Mean |
| Mean (±0.84) | 12.4 | 17.5 | 16.5 | 16.5 | 15.7 |
| $P_2O_5$: cwt per acre | | (±1.18) | | | |
| None | 11.2 | 15.8 | 17.0 | 15.4 | 14.9 |
| 0.5 | 13.7 | 19.2 | 16.0 | 17.7 | 16.6 |
| Diff. (±1.68) | +2.5 | +3.4 | -1.0 | +2.3 | +1.7 (±0.84) |
| $K_2O$: cwt per acre | | | | | |
| None | 11.6 | 14.3 | 14.7 | 15.2 | 13.9 |
| 1.0 | 13.3 | 20.7 | 18.3 | 17.9 | 17.5 |
| Diff. (±1.68) | +1.7 | +6.4 | +3.6 | +2.7 | +3.6 (±0.84) |

| | $P_2O_5$: cwt per acre | |
|---|---|---|
| | None | 0.5 |
| $K_2O$: cwt per acre | (±0.84) | |
| None | 13.4 | 14.5 |
| 1.0 | 16.4 | 18.7 |

Mean dry matter % as harvested: 76.5

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