

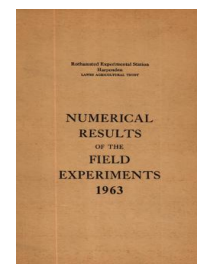
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Yields of the Field Experiments 1963

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

Rothamsted Research

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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.

63/C/3.2

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				Mean
	None	2	4	8	
Mean (± 1.21)	10.7	20.7	23.0	22.5	19.2
P ₂₀ : 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 ₂₀ : 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 ₂₀ : cwt per acre				
	None	0.5			
	K ₂₀ cwt per acre				
	(± 1.21)				
None	18.4	17.7			
1.0	19.8	20.9			

Mean dry matter % as harvested: 68.7

63/C/3.3

Sawyers I (R)

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

	Ground chalk: tons per acre				Mean
	None	2	4	8	
Mean	7.6	14.1	17.3	14.8	13.5
<u>P205</u> : cwt per acre					
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
<u>K20</u> : 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
	<u>P205</u> : cwt per acre	None	0.5		
<u>K20</u> : cwt per acre					
None	12.0	11.8			
1.0	14.4	15.6			

Mean dry matter % as harvested: 46.2

63/c/3.4

Stackyard Series C (W)

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

	Ground chalk: tons per acre				Mean
	None	2.00	4.75	7.50	
Mean (± 0.84)	12.4	17.5	16.5	16.5	15.7
P ₂₀₅ : 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 ₂₀ : 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 ₂₀₅ : cwt per acre				
	None	0.5			
K ₂₀ : cwt per acre	(± 0.84)				
None	13.4	14.5			
1.0	16.4	18.7			

Mean dry matter % as harvested: 76.5