ROTHAMSTED RESEARCH

Yields of the Field Experiments 1953

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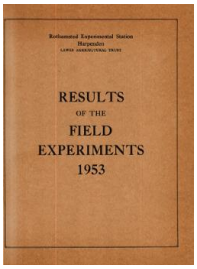

Short-term Experiments

Rothamsted Research

Rothamsted Research (1954) *Short-term Experiments ;* Yields Of The Field Experiments 1953, pp 68 - 106 **- DOI: https://doi.org/10.23637/ERADOC-1-173**

WHEAT

The effects of various crop sequences on the incidence of Eyespot (Cercosporella herpotrichoides) - Little Knott 1953, the 4th year.

Arrangement of previous treatment crops: 4 longitudinal and 8 cross strips.

Area of each sub plot, acres: In 3 longitudinal strips - 0.0498; in the other - 0.0348 acre. Area harvested: 0.0482 and 0.0335 respectively.

Preparatory crops 1950-52:-

1950 North and South, strips of Fallow, Ryegrass, Wheat, Potatoes
1951 East and West, strips of Ryegrass, Wheat, Fallow, Potatoes
1951 East and West, strips ½ width Ryegrass, Wheat, Oats, Beans
Wheat, Oats, Barley, Wheat

giving 32 crop sequences in all.

In 1949 the field carried a crop of wheat heavily infested with Eyespot, Take-all (Ophiobolous graminis) and weeds.

Basal dressing: 2½ cwt sulphate of ammonia per acre in spring.

Cultivations, etc.: Ploughed: Aug 7, 1952. Seed drilled at 2¾ bushels per acre: Oct 29. Sulphate of ammonia applied: Apr 24, 1953. Harvested: Aug 28. Variety: Squareheads Master 13/4.

https://doi.org/10.23637/ERADOC-1-173

Summary of Results

Previous crop 1950	1951	1952	Grain (at 85% dry matter): cwt per acre	Mean	Straw (less cavings and chaff): cwt per acre	Mean
W	W	W	15.5	15.5	54.0	54.0
H	W	W	19.2		50.3	
P	W	W	23.7	19.3	56.8	53.0
F	W	W	15.1		51.8	
W	H	W	24.4		56.4	
W	P	W	24.4	23.5	41.5	48.7
W	F	B	21.5		48.2	
H	H	W	23.9		56.1	
P	H	W	30.7		57.4	
F	H	W	22.6		52.8	
H	P	W	29.9		44.2	
P	P	W	30.5	27.6	45.3	49.7
F	P	W	27.3		41.8	
H	F	B	25.7		48.3	
P	F	B	30.6		51.4	
F	F	B	27.4		50.0	
W	W	O	32.9	32.9	58.8	58.8
H	W	O	36.1		54.6	
P	W	O	38.6	35.8	57.7	57.2
F	W	O	32.6		59.3	
W	H	H	34.6		70.3	
W	F	O	36.7	36.0	57.0	62.1
W	P	Be	36.8		59.1	
H	F	O	38.6		57.9	
F	F	O	37.6		60.3	
P	F	O	39.2		54.8	
F	H	H	31.3		63.1	
F	P	Be	38.8	37.1	58.7	62.2
H	H	H	32.8		63.1	
P	H	H	36.3		73.5	
H	P	Be	39.9		64.2	
P	P	Be	39.0		64.2	
		Mean		30.4		55.7

Mean dry matter %: 82.1

Crop symbols: B - Barley. Be - Beans. F - Fallow. H - Ryegrass.
O - Oats. P - Potatoes. W - Wheat.

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53/Ca/2.1

WHEAT

The effects of varieties, seed rates and time of applying N on the incidence of Eyespot - Great Field 1953, the 2nd year.

System of replication: 8 randomized blocks of 8 plots each, certain high order interactions and the effect of spraying being confounded with block differences. In addition each block contained two extra plots with no nitrogen, the variety x seed rate interaction being confounded.

Area of each plot: 0.0197 acre. Area harvested: 0.0129 acre.

Treatments: All combinations of
Variety: Squareheads Master 13/4; Bersee (V_1; V_2).
Seedrate: 1½; 3 bushels per acre (R_1; R_2).
Nitrogen: 0.4; 0.8 cwt per acre applied as sulphate of ammonia (N_1; N_2).
Time of application of N: At time of autumn sowing; early March; mid-April; 3rd week May (T_1; T_2; T_3; T_4).
Spraying: 4 blocks sprayed with 12½% sulphuric acid at 100 gallons per acre.

Basal dressing: None.

Cultivations, etc.: Ploughed: Sept 2, 1952. Seed drilled: V_1 - Oct 17, V_2 - Oct 21. T_1 applied: Oct 24. Sprayed 4 blocks with sulphuric acid: Mar 4, 1953. T_2 applied: Mar 5. T_3 applied: Apr 11. T_4 applied: May 22. Combine harvested: Aug 22. Previous crop: Wheat.

Standard error per plot:
Grain (at 85% D.M.): 3.41 cwt per acre or 16.3% (24 d.f.)

N.B. (1) In the Summary of Results:-
(a) The standard errors given are not valid for testing the effects of spraying for any particular treatment level; the interactions of spraying with treatments may however be tested.
(b) The V x R tables do not include the plots receiving no nitrogen
(2) Records of incidence of disease (Take-all and Eyespot) and counts of plant, shoot and straw numbers were made. Estimates of % area lodged were also recorded.

https://doi.org/10.23637/ERADOC-1-173

Summary of Results

Grain (at 85% Dry Matter): cwt per acre

	Unsprayed T_1	T_2	T_3	T_4	Mean
Mean (±1.20)	20.6	21.8	21.4	23.5	21.8
		(±1.70)			(±0.85)
V_1	17.1	18.9	18.6	23.4	19.5
V_2	24.1	24.8	24.1	23.7	24.2
Difference (±2.41)	+7.0	+5.9	+5.5	+0.3	+4.7 (±1.20)
R_1	21.5	22.0	23.7	27.2	23.6
R_2	19.7	21.7	19.0	19.9	20.1
Difference (±2.41)	-1.8	-0.3	-4.7	-7.3	-3.5 (±1.20)
N_1	17.5	23.1	18.8	22.0	20.3
N_2	23.7	20.6	24.0	25.0	23.3
Difference (±2.41)	+6.2	-2.5	+5.2	+3.0	+3.0 (±1.20)

	R_1	R_2	Diff.	N_0	N_1	N_2	Mean
Mean (±0.85)				15.1 (2)	20.3	23.3	20.5
	(±1.20)		(±1.70)	(±1.70)	(±1.20)		(±0.76)
V_1	22.1	16.9	-5.2	11.7	19.1	19.9	17.9
V_2	25.2	23.2	-2.0	18.5	21.6	26.8	23.1
Diff. (±1.70)	+3.1	+6.3	+3.2	+6.8 (1)	+2.5	+6.9	+5.2
				(±1.70)	(±1.20)		(±0.76)
R_1				16.2	22.2	25.1	22.1
R_2				14.1	18.5	21.6	18.9
Diff. (±1.70)				-2.1 (1)	-3.7	-3.5	-3.2

(1) ±2.41 (2) ±1.70 Mean D.M.%: 87.3

Treatment symbols

V_1 Squareheads Master 13/4 R_1 1½ bushels per acre N_0 No N
V_2 Bersee R_2 3 bushels per acre N_1 0.4 cwt N per acre
N_2 0.8 cwt N per acre

T_1 Sulphate of ammonia at time of autumn sowing
T_2 Sulphate of ammonia in early March
T_3 Sulphate of ammonia mid-April
T_4 Sulphate of ammonia 3rd week May

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Grain (at 85% Dry Matter): cwt per acre

	Sprayed T_1	T_2	T_3	T_4	Mean
Mean (±1.20)	22.6	22.9	21.0	21.0	21.9
		(±1.70)			(±0.85)
V_1	20.0	21.8	18.3	19.3	19.8
V_2	25.2	24.1	23.7	22.7	23.9
Difference (±2.41)	+5.2	+2.3	+5.4	+3.4	+4.1 (±1.20)
R_1	25.1	22.0	22.8	24.7	23.6
R_2	20.1	23.9	19.1	17.4	20.1
Difference (±2.41)	-5.0	+1.9	-3.7	-7.3	-3.5 (±1.20)
N_1	21.2	25.1	18.8	23.2	22.1
N_2	24.0	20.8	23.1	18.9	21.7
Difference (±2.41)	+2.8	-4.3	+4.3	-4.3	-0.4 (±1.20)

	R_1	R_2	Diff.	N_0	N_1	N_2	Mean
Mean (±0.85)				18.7 (2)	22.1	21.7	21.2
	(±1.20)		(±1.70)	(±1.70)	(±1.20)		(±0.76)
V_1	22.0	17.7	-4.3	19.0	19.7	19.9	19.7
V_2	25.3	22.6	-2.7	18.3	24.4	23.5	22.8
Diff. (±1.70)	+3.3	+4.9	+1.6	-0.7 (1)	+4.7	+3.6	+3.1
				(±1.70)	(±1.20)		(±0.76)
R_1				24.7	24.0	23.3	23.8
R_2				12.6	20.2	20.1	18.6
Diff. (±1.70)				-12.1 (1)	-3.8	-3.2	-5.2

(1) ±2.41 (2) ±1.20 Mean D.M.%: 85.3

Treatment symbols

V_1 Squareheads Master 13/4
V_2 Bersee

R_1 1½ bushels per acre
R_2 3 bushels per acre

N_0 No N
N_1 0.4 cwt N per acre
N_2 0.8 cwt N per acre

T_1 Sulphate of ammonia at time of autumn sowing
T_2 Sulphate of ammonia in early March
T_3 Sulphate of ammonia mid-April
T_4 Sulphate of ammonia 3rd week May

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WHEAT

The effect of varieties, seed rates and N on the incidence of Eyespot - Great Field I 1953.

System of replication: 4 randomized blocks of 8 plots each, certain high order interactions and the effect of spraying being confounded with block differences.

Area of each plot: 0.0197 acre. Area harvested: 0.0129 acre.

Treatments: All combinations of:
- Varieties: Hybrid 46; Yeoman; Cappelle; Scandia.
- Seed rates: 1½; 3 bushels per acre.
- Nitrogen: 0.4; 0.8 cwt N per acre as sulphate of ammonia applied in spring.
- Spraying (on blocks): None; 100 gallons of 12½% Sulphuric acid per acre.

Basal dressing: None

Cultivations, etc.: Ploughed: Sept 2, 1952. Seed drilled: Oct 24. Sprayed with sulphuric acid: Mar 4, 1953. Sulphate of ammonia applied: Mar 5. Combine harvested: Sept 9. Previous crop: Wheat.

Standard error per plot:
Grain: 3.50 cwt per acre or 15.0% (11 d.f.)

Summary of Results

Grain: cwt per acre

	Variety				Seed rate: bu. per acre		N: cwt per acre		Mean
	Hybrid 46	Yeoman	Cappelle	Scandia	1.5	3.0	0.4	0.8	
	(±1.79)*				(±1.27)*				
Unsprayed	22.0	22.5	24.9	24.6	24.1	22.9	21.7	25.4	23.5
Sprayed	26.9	22.2	24.7	24.1	25.5	23.4	23.7	25.2	24.5
Mean	24.5	22.3	24.8	24.3	24.8	23.2	22.7	25.3	24.0
	(±1.27)				(±0.90)				

Variety				
	(±1.79)			
Hybrid 46	25.0	24.0	22.5	26.5
Yeoman	24.2	20.5	20.5	24.2
Cappelle	24.9	24.7	23.7	25.9
Scandia	25.1	23.5	24.0	24.6
			(±1.27)	
Seed rate: bushels per acre				
1.5			23.0	26.6
3.0			22.3	24.0

*For use in horizontal and interaction comparisons only

N.B. Records of incidence of disease (Eyespot and Take-all) and counts of plant shoot and straw numbers were made. Estimates of % area lodged were also recorded.

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WHEAT

Residual effect of dung - West Barnfield II 1953.

System of replication: 4 randomized blocks of 12 plots each.

Area of each plot: 0.0318 acre. Area harvested: 0.0129 acre.

Treatments: All combinations of:-
Dung: None; 5; 10; 15 tons per acre applied to potatoes 1951-52.
Methods of application: Ploughed in, in winter (1951); ploughed in, in spring (1952); placed in ridges (1952).

Basal dressing: 3 cwt sulphate of ammonia per acre as top dressing in spring.

Cultivations, etc.: Cultivated: Oct 22 and again Oct 30 1952. Seed drilled at 3 bushels per acre: Nov 4. Sulphate of ammonia applied: April 24, 1953. Sprayed with M.C.P.A. low volume, 2 pints per acre: May 21. Combine harvested: Aug 21. Variety: Cappelle. Previous crop: Potatoes.

Standard error per plot:
Grain*: 5.06 cwt per acre or 12.4% (35 d.f.)

Summary of Results

Method of application	Dung applied to potatoes 1951-52: tons per acre None	5	10	15	Mean
	Grain*: cwt per acre				
			(±2.53)		(±1.46)
Ploughed in, in winter		40.6	42.8	42.3	41.9
Ploughed in, in spring		41.9	39.3	45.4	42.2
Placed in ridges		37.7	41.4	42.8	40.6
Mean (±1.46)	38.6	40.1	41.2	43.5	40.8

*Corrected to 85% D.M. Mean D.M.%:84.3.

N.B. For details of original experiment see "Results of the Field Experiments 1952", Section Ce/1.

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WHEAT

The residual effect of insecticides on the control of wireworm - Geescroft 1953.

System of replication: 3 randomized blocks of 8 plots each.

Area of each plot: 0.0289 acre. Area harvested: 0.0178 acre.

Treatments (applied autumn 1951 to previous wheat):

None (triplicate plots)		(O)
Gammexane seed dressing, 2 oz per bushel		(S)
Gammexane combine drilled with seed at	56 lb per acre, 3.5% dust	(G)
Aldrin " " " "	200 lb per acre, 1.78% "	(A)
Chlordane " " " "	100 lb per acre, 5% "	(C)
D.D.T. " " " "	150 lb per acre, 5% "	(D)

Basal dressing: 3 cwt sulphate of ammonia per acre.

Cultivations, etc.: Ploughed: Sept 8, 1952. Seed drilled at 2¼ bushels per acre: Oct 27. Sulphate of ammonia applied: Apr 25, 1953. Combine harvested: Sept 26. Variety: Nord Desprez. Previous crop: Wheat.

Standard error per plot:
Grain: 2.76 cwt per acre or 10.4% (16 d.f.)

Note: Wireworm counts were made and are available.

For details of original experiment see "Results of the Field Experiments 1952", Section Ca/4.

Summary of Results

	O	S	G	A	C	D	Mean
	Grain: cwt per acre						
Mean (±1.60)	21.6(1)	22.9	30.2	34.6	32.9	26.7	26.5
Increase (±1.84)		1.3	8.6	13.0	11.3	5.1	

Standard error (1) ±0.92

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WHEAT

Late application of nitrogen - Highfield 1953.

System of replication: 4 randomized blocks of 3 plots each.

Area of each plot: 0.0204 acre.

Treatments:
Nitrogen: None; 0.23; 0.46 cwt per acre applied as nitrochalk top dressing.

Basal dressing: 2 cwt sulphate of ammonia per acre.

Cultivations, etc.: Ploughed: Aug 23, 1952. Seed drilled at 3 bushels per acre: Oct 30. Sulphate of ammonia applied: Apr 29, 1953. Nitrochalk applied: June 26. Harvested: Aug 19. Variety: Nord Desprez. Previous crop: Wheat.

Standard error per plot:
Grain: 1.12 cwt per acre or 3.5% (6 d.f.)

Summary of Results

	Nitrogen (as nitrochalk top dressing): cwt per acre None	0.23	0.46	Mean
Yield: cwt per acre				
Grain (±0.56)	31.8	32.2	31.8	31.9
Straw*	44.6	43.3	43.3	43.7
Crude protein: cwt per acre				
Grain	3.79	3.91	3.88	
Increase		+0.12	+0.09	
Straw	1.78	1.73	1.82	
Increase		-0.05	+0.04	
Percentage uptake of added nitrogen				
Grain		+8	+3	
Straw		-3	+1	

*Corrected to 85% dry matter. Mean dry matter %: 83.6.

53/Ca/7

WHEAT

The effects of sowing date and N on the incidence of Powdery Mildew - Long Hoos I, II and III 1953.

System of replication: 4 randomized blocks of 4 plots each, arranged in 2 block pairs, the effect of sowing date being confounded with block differences.

Area of each plot: 0.0197 acre.

Treatments: All combinations of:-
Sowing date (on blocks): Early; Late - 3 weeks later than Early sown.
N in seed bed: None; 0.2 cwt N per acre applied as sulphate of ammonia.
N top dressing: 0.3; 0.6 cwt N per acre applied as sulphate of ammonia in spring.

Basal dressing: None.

Cultivations, etc.:
'Early' blocks. Harrowed after potatoes: Oct 17 and again Oct 29, 1952. Seed drilled at 2¾ bushels per acre: Oct 29. Sulphate of ammonia applied: Oct 31.
'Late' blocks. Harrowed after potatoes: Oct 17 and again Nov 12. Seed drilled at 2¾ bushels per acre, sulphate of ammonia applied: Nov 12. Crop failed, resown: Mar 13, 1953.
All blocks. Sulphate of ammonia top dressing applied: June 5. Variety: Squareheads Master 13/4, the 'Late' blocks were resown with Fylgia. Previous crop: Potatoes.

Note: No yields were taken as owing to the resowing, the main object of the experiment could not be tested. In addition the crop was poor, particularly the 'Early' blocks which were sown under very wet conditions.

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WHEAT

Methods of harvesting and levels of N - Sawyers III 1953.

System of replication: 4 randomized blocks of 9 plots each.

Area of each plot: 0.0200 acre. Area harvested: Binder - full area, combine - 0.0129 acre.

Treatments: All combinations of:-
N: None; 0.4; 0.8 cwt N per acre applied as nitrochalk.
Method of harvesting: Binder; Combine (Massey Harris 726).

Note: The experiment was originally designed to test also the N.I.A.E. combine (i.e. 3 methods in all) but this was not available. The 3 plots per block (1 at each level of N) which should have been harvested by the N.I.A.E. combine were harvested by Binder in 2 of the blocks, and by the Massey Harris 726 in the other 2 blocks: each treatment combination was therefore replicated 6 times.

Basal dressing: None.

Cultivations, etc.: Cultivated twice: Nov 7, 1952. Seed drilled at 3 bushels per acre: Nov 9. Nitrochalk applied: May 20, 1953. Sprayed with M.C.P.A.: May 21. Harvested: Binder plots - Sept 3. Combine plots - Sept 10. Variety: Cappelle. Previous crop: Potatoes.

Standard error per plot:
Grain: 2.67 cwt per acre or 8.9% (27 d.f.)

Summary of Results

Grain: cwt per acre

Method of Harvesting	N: cwt per acre None	0.4	0.8	Mean
	(1) and (2)			
Binder	26.3	30.4	33.4	30.0
Combine	25.9	29.9	35.2	30.3
Mean (±0.77)	26.1	30.2	34.3	30.2
Difference (±1.57)	-0.4	-0.5	+1.8	+0.3 (±0.94)

(1) ±1.09 for use in horizontal comparisons only.
(2) ±1.11 for use in diagonal comparisons only.

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53/Cb/1

BARLEY

Late application of nitrogen - Deacons. Field 1953.

System of replication: 4 randomized blocks of 3 plots each.

Area of each plot: 0.0204 acre.

Treatments:
Nitrogen: None; 0.23; 0.46 cwt per acre applied as nitrochalk top dressing.

Basal dressing per acre: 2¼ cwt sulphate of ammonia, 1 cwt superphosphate.

Cultivations, etc.: Ploughed: Feb 5. Seed drilled at 3 bushels per acre with Superphosphate: Mar 7. Sulphate of ammonia applied: Mar 9. Nitrochalk applied: June 25. Harvested: Aug 13. Variety: Herta. Previous crop: Potatoes.

Standard error per plot:
Grain: 0.582 cwt per acre or 1.4% (6 d.f.)

Summary of Results

	Nitrogen (as nitrochalk top dressing): cwt per acre None	0.23	0.46	Mean
	Yield: cwt per acre			
Grain (±0.29)	38.6	40.3	42.0	40.3
Straw*	39.8	39.3	40.8	40.0
	Crude protein: cwt per acre			
Grain	3.74	4.26	4.63	
Increase		0.52	0.89	
Straw	0.80	0.96	1.22	
Increase		0.16	0.42	
	Percentage uptake of added nitrogen			
Grain		36	31	
Straw		11	14	

*Corrected to 85% dry matter. Mean dry matter %:85.1.

53/Cb/2

BARLEY

Nitrophosphate and fertilizers broadcast or drilled - Highfield 5 1953.

System of replication: 4 randomized blocks of 8 plots each.

Area of each plot: 0.0194 acre.

Treatments:
Sulphate of ammonia broadcast; Nitrochalk broadcast; Nitrophosphate (British) broadcast or drilled; Compound fertilizer (9% N; 9% P_2O_5) broadcast or drilled; Nitrochalk and superphosphate mixture broadcast or drilled. All fertilizers were applied at rates to give 0.5 cwt N and 0.5 cwt. P_2O_5 per acre.

Basal dressing: 94 lb sulphate of potash per acre.

Cultivations, etc.: Ploughed: Sept 24, 1952 and again Jan 20, 1953.
Seed drilled at 3 bushels per acre, fertilizers applied: Mar 9.
Combine harvested: Aug 19. Variety: Herta. Previous crop: Linseed.

Standard error per plot:
Grain (at 85% D.M.): 2.74 cwt per acre or 8.7% (20 d.f.)

Note: The yield of grain (at 85% D.M.) has been adjusted to allow for tractor damage to two plots.

Summary of Results

	Sulphate of ammonia	Nitro-chalk	Nitrophosphate (British)		National Compound No. 9		Nitrochalk and Superphosphate		Mean
	Broadcast		Broad-cast	Drilled	Broad-cast	Drilled	Broad-cast	Drilled	
	Grain (at 85% Dry Matter): cwt per acre								
Mean (±1.37)	30.3	29.5	31.0	30.0	31.5	33.6	33.3	32.2	31.4

Mean D.M.%: 79.8

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53/Cb/3.1

BARLEY

Control of Powdery Mildew - Little Knott I 1953.

System of replication: 8 randomized blocks of 2 plots each, each plot being split into two for spraying, one group of 4 blocks being sown early, the other late.

Area of each sub plot: 0.0159 acre.

Treatments: All combinations of:
Blocks. Sowing date: Early, 12th March; Late, 15th April.
Whole plots. Varieties: Plumage Archer; Haisa II.
Sub plots. Spraying: None; 160 gals. per acre of 1 in 80 Lime sulphur.

Basal dressing per acre: 2 cwt sulphate of ammonia; 1 cwt superphosphate combine drilled.

Cultivations, etc.:
'Early' plots: Ploughed: Feb 23. Seed drilled at 3 bushels per acre with superphosphate, sulphate of ammonia applied: Mar 12. Harvested: Aug 17.
'Late' plots: Ploughed: Apr 11. Seed drilled at 3 bushels per acre with superphosphate, sulphate of ammonia applied: Apr 15. Harvested: Aug 18.
Whole experiment: Sprayed appropriate plots with lime sulphur: May 5 and again June 11. Previous crop: Kale.

Standard errors per plot. Grain:
Whole plot: 1.92 cwt per acre or 5.7% (6 d.f.)
Sub plot: 1.55 cwt per acre or 4.6% (12 d.f.)

Note: Counts of incidence of Powdery Mildew were made.

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Summary of Results

Lime sulphur	Early sowing 11th March: Plumage Archer	Haisa II	Mean	Late sowing 15th April: Plumage Archer	Haisa II	Mean
Grain: cwt per acre						
	(a) and (b)		(±0.55)	(a) and (b)		(±0.55)
-	33.6	31.4	32.5	34.6	35.8	35.2
Sprayed	33.3	31.6	32.4	35.9	35.0	35.5
Mean (±0.96)	33.4	31.5	32.5	35.3	35.4	35.3
Straw: cwt per acre						
-	42.2	42.4	42.3	41.9	41.9	41.9
Sprayed	45.3	40.5	42.9	46.5	43.3	44.9
Mean	43.7	41.5	42.6	44.2	42.6	43.4

(a) ±0.77 for use in vertical comparisons only.
(b) ±1.11 for use in all others.

N.B. The standard errors given are not valid for testing the effect of sowing date for any particular treatment; the interactions of sowing date with treatments may, however, be tested.

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53/Cb/4

BARLEY

Methods of harvesting - Deacons Field 1953.

System of replication: 12 randomized blocks of 2 plots each.

Area of each plot: 0.0200 acre. Area harvested: Binder - full area; Combine harvester - 0.0129 acre.

Treatments:
Methods of harvesting: Binder; Combine harvester (Massey Harris 726 8'6" cut).

Basal dressing per acre: 1 cwt superphosphate; 2¼ cwt sulphate of ammonia.

Cultivations, etc.: Ploughed: Feb 5. Seed drilled with superphosphate: Mar 7. Sulphate of ammonia applied: Mar 9. Harvested: Combine plots - Aug 22, Binder - Aug 25. Variety: Herta. Previous crop: Potatoes.

Standard error per plot:
Grain: 2.41 cwt per acre or 6.1% (11 d.f.)

Summary of Results

	Methods of Harvesting		Mean	Difference
	Binder	Combine Harvester		
	Yields: cwt per acre			
Grain	36.8	41.6	39.2	4.8 (±0.98)
Straw	39.4	-		

Mean Dry Matter %: Combine plots - 84.2, Binder plots - no value available.

https://doi.org/10.23637/ERADOC-1-173

53/Cc/1

SPRING OATS

Late application of nitrogen - Great Field II 1953.

System of replication: 4 randomized blocks of 3 plots each.

Area of each plot: 0.0204 acre. Area harvested: 0.0103 acre.

Treatments:
Nitrogen: None; 0.23; 0.46 cwt per acre applied as nitrochalk top dressing.

Basal dressing: 2 cwt nitrochalk per acre.

Cultivations, etc.: Ploughed: Sept 26, 1952. Seed drilled at 3 bushels per acre with basal nitrochalk: Feb 26, 1953. Nitrochalk applied: June 26. Combine harvested: Sept 10. Variety: Marne. Previous crop: Barley.

Standard error per plot:
Grain: 2.50 cwt per acre or 6.0% (6 d.f.)

Summary of Results

	Nitrogen (as nitrochalk top dressing): cwt per acre			
	None	0.23	0.46	Mean
	Yield: cwt per acre			
Grain (±1.25)	42.1	41.5	40.9	41.5
Straw*	42.4	43.7	42.0	42.7
	Crude protein: cwt per acre			
Grain	5.05	5.16	5.21	
Increase		0.11	0.16	
Straw	1.62	1.85	1.90	
Increase		0.23	0.28	
	Percentage uptake of added nitrogen			
Grain		8	5	
Straw		16	9	

*Corrected to 85% dry matter. Mean dry matter %: 78.2.

https://doi.org/10.23637/ERADOC-1-173

53/Cd/1.1

WINTER BEANS

Effect of cultivations on ploughed in beans - Long Hoos V 1953.

System of replication: 6 randomized blocks of 6 plots each, in 3 block pairs, the effect of spraying being confounded with block differences.

Area of each plot: 0.0145 acre.

Treatments: All combinations of:
Cultivations on furrows: Work down furrows in autumn (A); work down furrows in spring (B); A and B.
Cultivations by weeding: None; mechanical weeder cultivation in spring (W).
Spraying (on blocks): None; DNBP medium volume.

Basal dressing: None.

Cultivations, etc.: Beans ploughed in at 3 cwt per acre: Nov 4, 1952. Heavy harrowed 'A' and 'AB' plots: Nov 7. Medium harrowed 'A' and 'AB' plots twice: Nov 8. Sprayed appropriate blocks with DNPB: Apr 28, 1953. Harrowed 'B' plots: May 5. Weeded 'W' plots: May 12. Horse hoed all plots: May 12 and again June 6. Hand weeded: June 17, June 29, July 27. Harvested: Sept 5. Variety: Deneb (own seed). Previous crop: Potatoes.

Standard errors per plot:
Unsprayed blocks: 4.25 cwt per acre or 17.2% (10 d.f.).
Sprayed blocks: 1.50 cwt per acre or 6.1% (9 d.f.)*

* 1 missing value.

https://doi.org/10.23637/ERADOC-1-173

Summary of Results

Grain: cwt per acre

Weeding	Unsprayed Work down furrows: In Autumn	In Spring	In Autumn and Spring	Mean	Sprayed Work down furrows: In Autumn	In Spring	In Autumn and Spring	Mean
		(±2.46)				(±0.87)		
None	25.6	26.4	24.4	25.5	21.6	23.7	25.9	23.8
Mechanical	24.3	24.8	23.1	24.1	26.6	25.4	23.6	25.2
Mean	24.9	25.6 (±1.74)	23.8	24.8	24.1	24.6 (±0.61)	24.8	24.5
Difference	-1.3	-1.6 (±3.47)	-1.3	-1.4 (±2.01)	+5.0	+1.7 (±1.23)	-2.3	+1.4 (±0.71)

Straw: cwt per acre

None	40.3	35.2	41.5	39.0	40.4	27.5	37.2	35.0
Mechanical	38.5	35.4	36.4	36.8	37.7	30.2	33.7	33.8
Mean	39.4	35.3	39.0	37.9	39.0	28.8	35.4	34.4
Difference	-1.8	+0.2	-5.1	-2.2	-2.7	+2.7	-3.5	-1.2

Grain: cwt per acre

Weeding	Responses to spraying: In Autumn	In Spring	In Autumn and Spring	Mean
		(±2.66)*		
None	-4.0	-2.7	+1.5	-1.7
Mechanical	+2.3	+0.6	+0.5	+1.1
Mean	-0.8	-1.0 (±1.88)*	+1.0	-0.3
Difference	+6.3	+3.3 (±3.76)	-1.0	+2.8 (±2.17)

*for use in testing the differences of 2 responses to spraying.

https://doi.org/10.23637/ERADOC-1-173

53/Cd/2

WINTER BEANS

Fertilizer placement - Sawyers I 1953.

System of replication: 8 randomized blocks of 9 plots each.

Area of each plot: 0.0152 acre.

Treatments: All combinations of:-
Superphosphate, cwt. per acre: None; 3.2 broadcast on seed bed; 3.2 drilled in band 2" to side of seed.
Sulphate of potash, cwt per acre: None; 2.3 broadcast on seed bed; 2.3 drilled in band 2" to side of seed.

Basal manuring: None.

Cultivations, etc.: Ploughed: Sept 22, 1952. Seed drilled at 3 bushels per acre, fertilizers applied: Nov 13. Variety: S.Q.Giant. Previous crop: Wheat.

Note: Owing to the heavy bird damage and infestation with weeds, the crop was not harvested and therefore no yields are available.

https://doi.org/10.23637/ERADOC-1-173

SPRING BEANS

Phosphate placement - Sawyers I 1953.

System of replication: 6 randomized blocks of 6 plots each.

Area of each plot: 0.0092 acre.

Treatments: No phosphate (two plots per block) and all combinations of:-
Phosphate: Dicalcium phosphate; Superphosphate, each providing 0.5 cwt P_2O_5 per acre.

Method of placement: Broadcast; Drilled in band beneath seed.

Basal dressing: None.

Cultivations, etc.: Ploughed: Sept 22, 1952. Seed drilled at 3 bushels per acre, fertilizers applied: Mar 2, 1953. Harvested: Sept 8. Variety: Ashwells Selection. Previous crop: Wheat.

Standard error per plot:
Grain (at 85% Dry Matter): 1.60 cwt per acre or 13.9% (25 d.f.)

Note: The yield of grain has been adjusted to allow for the fact that several plots were drilled at the wrong seed rate.

Summary of Results

	Phosphate					
	None	Dicalcium Broadcast	Super Broadcast	Dicalcium Drilled	Super Drilled	Mean
	Grain (at 85% Dry Matter): cwt per acre					
Mean (±0.65)	11.8(1)	9.7	9.7	12.9	13.1	11.5
Increase (±0.80)		-2.1	-2.1	+1.1	+1.3	

(1) ±0.46

Mean Dry Matter %: 83.1

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SPRING BEANS

Control of Black Aphis by insecticides – Woburn, Stackyard and Warren Field.

System of replication: 4 randomized blocks of 5 plots each.

Area of each plot: 0.000735 acre. Area harvested: 0.000367 acre.

Treatments:
No insecticide (two plots per block).
Seed soaked 4 hours in 2% emulsion Systox active ingredient.
Seed dressing, 0.012 grams active ingredient of Systox per seed.
Soil dressing, 0.75 grams active ingredient of Systox per foot of drill.

Basal dressing: None.

Cultivations, etc.:

Stackyard

Ploughed: Sept 10, 1952. Seed drilled at 100 lb per acre: Mar 10, 1953. Harvested: Aug 28. Variety: Spring Tick. Previous crop: Fallow.

Warren Field

Ploughed: Sept 12, 1952. Seed drilled at 100 lb per acre: Mar 14, 1953. Variety: Spring Tick. Previous crop: Barley. No yields were recorded.

Standard error per plot. Stackyard.
Grain: 2.51 cwt per acre or 14.1% (13 d.f.)

Note. Counts of Black Aphis, Pea and Bean Weevil were made on both fields.

Summary of Results

Grain: cwt per acre

Stackyard

	Systox				
	None	Seed soaked	Seed dressing	Soil dressing	Mean
Mean (±1.25)	16.0(1)	17.4	19.1	20.4	17.8
Increase (±1.54)		1.4	3.1	4.4	

(1) ±0.89

https://doi.org/10.23637/ERADOC-1-173

BEANS

Control of Black Aphis - Long Hoos V 1953.

System of replication: 8 randomized blocks of 2 plots each, arranged in 4 block pairs, the effect of sowing date being confounded with block differences.

Area of each plot: 0.0339 acre.

Treatments: All combinations of:
Sowing date (by blocks): Winter; Spring.
Insecticidal spray: None; Systox 0.1% active ingredient at 100 gallons per acre.
N.B. The experiment was originally designed to test a control and 4 sprays, but owing to the lack of aphids, it was decided to test Systox only.

Basal dressing: None.

Cultivations, etc.: Ploughed in winter beans at 340 lb per acre: Nov 13, 1952. Ploughed in spring beans at 320 lb per acre: Feb 23, 1953. Sprayed with Systox: June 8. Harvested: Sept 5. Variety: Winter - S.Q.Giant; Spring - Garton's Tick. Previous crop: Potatoes.

Standard error per plot:
Grain: 2.81 cwt per acre or 9.4% (6 d.f.)

Summary of Results

Spray	Sown Winter	Sown Spring	Mean
Grain: cwt per acre			
None	26.4	28.8	27.6
Systox	31.3	33.1	32.2
Mean	28.8	30.9	29.9
Difference (±1.99)	+4.9	+4.3	+4.6 (±1.41)
Straw: cwt per acre			
None	35.3	31.7	33.5
Systox	32.4	33.8	33.1
Mean	33.8	32.8	33.3
Difference	-2.9	+2.1	-0.4

https://doi.org/10.23637/ERADOC-1-173

53/Cd/6.

BROAD BEANS

Fertilizer placement - Sawyers I 1953.

System of replication: 4 randomized blocks of 6 plots each.

Area of each plot: 0.00379 acre. Area harvested: 0.00318 acre.

Treatments: No fertilizer (duplicate plots) and all combinations of:-
Compound granular NPK fertilizer (8% N, 6% P_2O_5, 10½% K_2O):
3; 6 cwt per acre.
Method of placement: Broadcast on seed bed; drilled in band beside seed.

Basal dressing: None.

Cultivations, etc.: Ploughed: Sept 22, 1952. Beans sown at 2 cwt per acre fertilizers applied: Feb 6,1953. Harvested: 1st picking - July 15, 2nd - July 27. Variety: Prolific Longpod. Previous crop: Wheat.

Standard errors per plot. Yield of green beans in pod:
1st picking: 7.31 cwt per acre or 16.6% (16 d.f.)
2nd picking: 5.08 cwt per acre or 16.0% (16 d.f.)
Total of 2 pickings: 9.77 cwt per acre or 12.9% (16 d.f.)

Summary of Results

Yield of green beans in pod: cwt per acre

		Compound PK fertilizer: cwt per acre					
		None	3 Broad-cast	3 Drilled	6 Broad-cast	6 Drilled	Mean
1st Picking							
Mean	(±3.66)	38.0(1)	36.4	54.4	47.7	50.7	44.2
Increase	(±4.48)		-1.6	+16.4	+9.7	+12.7	
2nd Picking							
Mean	(±2.54)	29.7(2)	25.7	33.8	26.7	45.5	31.9
Increase	(±3.11)		-4.0	+4.1	-3.0	+15.8	
Total of two pickings							
Mean	(±4.89)	67.7(3)	62.2	88.2	74.4	96.1	76.0
Increase	(±5.98)		-5.5	+20.5	+6.7	+28.4	

(1) ±2.59
(2) ±1.80
(3) ±3.46

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53/Ce/1

POTATOES

Dung, N, P and K - West Barnfield I 1953.

System of replication: 4 randomized blocks of 8 plots each, the interaction DNPK being confounded with block differences.

Area of each plot: 0.0210 acre. Area harvested: 0.0140 acre.

Treatments: All combinations of:-
Dung: None; 10 tons per acre.
N: None; 0.6 cwt per acre applied as sulphate of ammonia.
P_2O_5: None; 0.6 cwt per acre applied as superphosphate.
K_2O: None; 1.0 cwt per acre applied as muriate of potash.

Basal dressing: None.

Cultivations, etc.: Ploughed: Sept 18, 1952. Dung applied and ploughed in: Feb 26, 1953. Ridged and fertilizers applied in ridges: Apr 10. Potatoes planted: Apr 11. Earthed up: June 25. Sprayed with copper fungicide: Aug 5. Sprayed with 20% sulphuric acid: Sept 25. Lifted: Oct 2. Variety: Majestic. Previous crop: Wheat.

Standard error per plot:
Total tubers: 1.44 tons per acre or 12.6% (18 d.f.)

Summary of Results

Responses to Treatments

Response to	Mean	Dung: tons per acre		N cwt per acre		P_2O_5 cwt per acre		K_2O	
		0.0	10	0.0	0.6	0.0	0.6	0.0	1.0
	Total tubers: Mean yield 11.45 tons per acre (±0.510)				(±0.721)				
Dung	+3.70	-	-	+3.72	+3.68	+2.68	+4.72	+4.65	+2.75
N	+1.67	+1.69	+1.65	-	-	+1.78	+1.56	+1.51	+1.83
P_2O_5	-0.05	-1.07	+0.97	+0.06	-0.16	-	-	-1.25	+1.15
K_2O	+2.12	+3.07	+1.17	+1.96	+2.28	+0.92	+3.32	-	-
	Percentage ware ($1\frac{1}{2}$" riddle): Mean 87.6								
Dung	+4.8	-	-	+4.5	+5.1	+2.8	+6.8	+7.7	+1.9
N	0.0	-0.3	+0.3	-	-	+0.8	-0.8	+1.2	-1.2
P_2O_5	-2.3	-4.3	-0.3	-1.5	-3.1	-	-	-4.9	+0.3
K_2O	+4.1	+7.0	+1.2	+5.3	+2.9	+1.5	+6.7	-	-

https://doi.org/10.23637/ERADOC-1-173

53/Ce/2.1

POTATOES

Methods of planting and fertilizer application - Deacons Field 1953.

System of replication: 4 randomized blocks of 12 plots each, plots being split into 2 for the application of N and K with the NK interaction confounded with whole plot differences, and certain high order interactions confounded with block differences.

Area of each sub-plot: 0.0140 acre. Area harvested: 0.0105 acre.

Treatments:

Whole plots: All combinations of:-

Compound granular fertilizer (7% N, 7% P_2O_5, 10.5% K_2O):
None; 7½; 15 cwt per acre.

Methods of planting and fertilizer application: Ridge, broadcast fertilizer, hand plant and split back at once (A); Ridge, expose ridges for 7 days, broadcast fertilizer over ridges, hand plant same time as A and split back ridges (B); Broadcast fertilizer on flat, plant from flat with dropper (C); plant from flat with dropper, fertilizers placed 2" to side of seed (D).

Sub plots: All combinations of:-

N: None; 0.53 cwt per acre applied as Sulphate of ammonia.
K_2O: None; 0.79 cwt per acre applied as Muriate of potash.
Both N and K_2O were applied as top dressings before the final earthing up.

Basal dressing: None.

Cultivations, etc.: Ploughed: Sept 15, 1952. Ridged 'B' plots: Apr 9, 1953. Ridged 'A' plots, fertilizers applied and potatoes planted on 'A' and 'B' plots: Apr 16. Fertilizers applied, potatoes planted on 'C' and 'D' plots: Apr 17. Top dressings applied, earthed up: June 30. Sprayed with copper fungicide, 5 lb per acre: Aug 1. Sprayed with sulphuric acid, 15% B.O.V: Sept 23. Lifted: Oct 5. Variety: Majestic. Previous crop: Barley.

Standard errors per plot, Total tubers:
Whole plot: 1.02 tons per acre or 8.6% (33 d.f.)
Sub plot: 0.550 tons per acre or 4.6% (26 d.f.)

https://doi.org/10.23637/ERADOC-1-173

Summary of Results

Compound fertilizer: cwt per acre

	None			7.5				15.0				Mean	
	A	B	C & D	A	B	C	D	A	B	C	D		
Total tubers: tons per acre													
N: cwt per acre	(±0.548)*		(±0.387)*	(±0.548)*									
None	9.43	7.89	8.71	12.29	12.52	11.69	11.85	14.75	14.73	14.99	15.31	11.91	
0.53	8.66	8.57	9.04	12.89	13.02	11.25	11.32	15.39	14.08	14.08	14.06	11.78	
Difference (±0.389)	-0.77	+0.68	+0.33(1)	+0.60	+0.50	-0.44	-0.53	+0.64	-0.65	-0.91	-1.25	-0.13	(±0.112)
K_2O: cwt per acre	(±0.548)*		(±0.387)*	(±0.548)*									
None	8.77	8.21	8.88	12.31	13.16	11.60	11.52	15.37	14.09	14.62	14.64	11.84	
0.79	9.32	8.25	8.88	12.87	12.38	11.34	11.65	14.77	14.72	14.46	14.73	11.85	
Difference (±0.389)	+0.55	+0.04	0.00(1)	+0.56	-0.78	-0.26	+0.13	-0.60	+0.63	-0.16	+0.09	+0.01	(±0.112)
Mean (±0.512)	9.05	8.23	8.88(2)	12.59	12.77	11.47	11.59	15.07	14.41	14.54	14.68	11.84	

(1) ±0.275 (2) ±0.362

* for use in comparisons other than vertical.

K_2O: cwt per acre	N: cwt per acre None	N: cwt per acre 0.53
	(±0.296)	
None	11.84	11.83
0.79	11.97	11.74

Treatments

A. Ridge, broadcast fertilizer, hand plant and split back ridges at once.

B Ridge, expose ridges for 7 days, broadcast fertilizer over ridges, hand plant, same time as A, split back ridges.

C Broadcast fertilizer on flat, plant from flat with dropper

D Plant from flat with dropper, fertilizer placement 2" to side of seed.

53/Ce/2.2

Compound fertilizer: cwt per acre

	None			7.5				15.0				
	A	B	C & D	A	B	C	D	A	B	C	D	Mean
	Percentage ware											
N: cwt per acre												
None	87.4	88.4	87.0	87.9	90.5	88.5	85.7	91.4	87.0	91.7	89.9	88.5
0.53	90.9	87.8	87.3	88.4	88.2	90.5	83.6	89.4	86.8	86.4	88.8	87.9
Difference	+3.5	-0.6	+0.3	+0.5	-2.3	+2.0	-2.1	-2.0	-0.2	-5.3	-1.1	-0.6
K_2O: cwt per acre												
None	88.4	87.2	86.7	88.1	89.3	89.1	82.6	91.0	88.2	89.4	87.9	87.9
0.79	89.8	89.0	87.6	88.2	89.4	89.9	86.8	89.8	85.6	88.7	90.8	88.6
Difference	+1.4	+1.8	+0.9	+0.1	+0.1	+0.8	+4.2	-1.2	-2.6	-0.7	+2.9	+0.7
Mean	89.2	88.1	87.1	88.1	89.3	89.5	84.7	90.4	86.9	89.1	89.3	88.2

Treatments A Ridge, broadcast fertilizer, hand plant and split back ridges at once.
B Ridge, expose ridges for 7 days, broadcast fertilizer over ridges, hand plant, same time as A, and split back ridges.
C Broadcast fertilizers on flat, plant from flat with dropper.
D Plant from flat with dropper, fertilizer placement 2" to side of seed.

	N: cwt per acre None	0.53
K_2O: cwt per acre		
None	88.1	87.7
0.79	89.0	88.2

53/Ce/2.3

POTATOES

Control of Blight - Deacons Field 1953.

System of replication: 4 x 4 Latin Square, plots being split into 2 for determination of tractor damage.

Area of each sub plot: 0.0175 acre.

Treatments:

Whole plots: No spray; Copper fungicide 5 lb in 40 gallons per acre sprayed twice; 100 gallons Sulphuric acid, 15% B.O.V. sprayed to destroy haulms; Copper fungicide and sulphuric acid sprayed as above. The tractor used for spraying was driven over all the plots on each occasion.

Sub plots: The 4 inner rows damaged by three passages of the tractor were compared with the 4 outer and undamaged rows.

Basal dressing: 15 cwt compound granular fertilizer (7% N; 7% P_2O_5; 10½% K_2O) per acre.

Cultivations, etc.: Ploughed: Sept 15, 1952. Cultivated twice: Mar 17, 1953. Ridged: Mar 26. Potatoes planted: Apr 16. Earthed up: June 26. Sprayed appropriate plots with copper fungicide: Aug 1 and again Aug 13. Sprayed appropriate plots with sulphuric acid: Sept 14. Lifted: Oct 6. Variety: Majestic. Previous crop: Barley.

Standard errors per plot: Total tubers.
Whole plot: 0.361 tons per acre or 2.7% (6 d.f.)
Sub plot: 0.454 tons per acre or 3.4% (12 d.f.)

Blight counts were made and are available. The mean level of infection was only 0.3%.

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Summary of Results

	Spray				
	None	Copper fungicide	Sulphuric Acid	Copper fungicide and sulphuric Acid	Mean
	Total tubers: tons per acre ($\pm$0.242)*				
Undamaged rows	13.45	13.87	13.28	14.66	13.82
Damaged rows	12.49	13.67	12.71	13.52	13.10
Mean ($\pm$0.181)	12.97	13.77	13.00	14.09	13.46
Difference ($\pm$0.321)	-0.96	-0.20	-0.57	-1.14	-0.72 ($\pm$0.161)
	Percentage Ware				
Undamaged rows	91.4	88.4	91.8	89.7	90.3
Damaged rows	90.6	89.6	90.7	92.5	90.9
Mean	91.0	89.0	91.2	91.1	90.6
Difference	-0.8	+1.2	-1.1	+2.8	+0.6

* for use in comparisons other than vertical.

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53/Cf/1.1

SUGAR BEET

Control of Virus Yellows - Long Hoos VII 1953.

System of replication: 4 randomized blocks of 9 plots each.

Area of each plot: 0.0300 acre.

Treatments: All combinations of:-
Sowing date: 1 - As early as possible; 2 - As soon as first sowing above ground; 3 - As soon as second sowing above ground.
Singling date: A - Early (Cotyledons and first leaf less than 1"); B - Normal (Cotyledons and 4 leaves); C - Late (8-12 leaves).

Basal manuring per acre: 3 cwt nitrate of soda; 4 cwt superphosphate; 2 cwt muriate of potash; 5 cwt salt.

Cultivations, etc.: Ploughed: Jan 21. Basal fertilizers except nitrate of soda applied: Mar 17. Seed drilled at 18 lb per acre, nitrate of soda applied: '1' plots - Mar 17, '2' - Apr 9, '3' - May 4. Sprayed with D.D.T. emulsion: May 11. Singled: '1A' plots - May 18; '1B', '2A' - May 26; '2B', '2C' - May 29; '3A', '2B', '1C' - June 1; '2C', '2B' - June 10; '3C' - June 24. Lifted: Nov 30. Variety: Klein E. Previous crop: Cauliflower.

Standard errors per plot:
Total sugar: 3.55 cwt per acre or 6.3% (24 d.f.)
Percentage Virus Yellows (transformed values): 6.53 or 66.1% (24 d.f.)

Note. The analysis of the incidence of Virus Yellows has been carried out on percentages transformed to degrees, and all tests of significance should be carried out on the transformed values.

Summary of Results

Sowing Date	Singling Date: Early	Normal	Late	Mean
	Roots (washed): tons per acre			
17th March	16.80	16.46	16.36	16.54
9th April	16.40	15.81	16.31	16.17
4th May	13.66	13.91	13.23	13.60
Mean	15.62	15.39	15.30	15.44

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Sowing Date	Singling Date: Early	Normal	Late	Mean
Sugar Percentage				
17th March	17.95	18.27	18.06	18.09
9th April	18.25	18.62	18.22	18.36
4th May	18.32	18.18	18.38	18.29
Mean	18.17	18.35	18.22	18.25
Total Sugar: cwt per acre				
		(±1.78)		(±1.03)
17th March	60.4	60.2	59.2	59.9
9th April	59.8	58.9	59.6	59.4
4th May	50.1	50.7	48.7	49.8
Mean (±1.03)	56.8	56.6	55.8	56.4
Plant Number: thousands per acre				
17th March	31.2	29.0	26.8	29.0
9th April	29.4	27.2	27.9	28.2
4th May	26.0	26.6	25.0	25.9
Mean	28.9	27.6	26.6	27.7
Noxious Nitrogen: mg per 100 g.				
17th March	17.5	16.2	16.2	16.7
9th April	22.5	18.8	20.0	20.4
4th May	22.5	21.2	23.8	22.5
Mean	20.8	18.7	20.0	19.9

https://doi.org/10.23637/ERADOC-1-173

Sowing Date	Singling Date: Early	Normal	Late	Mean
	Percentage Virus Yellows (means calculated from transformed values)			
17th March	3.5	2.2	1.7	2.4
9th April	0.9	2.9	4.6	2.6
4th May	1.0	8.2	4.2	3.9
Mean	1.6	4.1	3.4	3.0
	Percentage Virus Yellows (transformed values)			
		(±3.27)		(±1.89)
17th March	10.8	8.6	7.6	9.0
9th April	5.4	9.8	12.4	9.2
4th May	5.7	16.6	11.8	11.4
Mean (±1.89)	7.3	11.7	10.6	9.9

https://doi.org/10.23637/ERADOC-1-173

LUCERNE

Fertilizer placement - Highfield 5 1953 - the 2nd year.

System of replication: 8 randomized blocks of 8 plots each, a high order interaction being confounded with block differences.

Area of each plot: 0.0136 acre.

Treatments, applied 1952: All combinations of:-
P_2O_5: None; 1.0 cwt per acre applied as superphosphate.
K_2O: None; 1.0 cwt per acre applied as muriate of potash.
Method of placement: Broadcast on seed bed; Ploughed in 10".
Starter: None; 2 cwt granular superphosphate per acre placed beneath seed.

Basal dressing: None.

Cultivations, etc.: Cut and weighed green: three times - June 30, Aug 11 and Oct 20. Variety: Du Puits.

Standard errors per plot. Dry Matter:

1st cut:	3.89 cwt per acre or	6.8% (42 d.f.)
2nd cut:	2.52 cwt per acre or	12.9% (42 d.f.)
3rd cut:	1.21 cwt per acre or	10.5% (42 d.f.)
Total of 3 cuts:	5.20 cwt per acre or	5.9% (42 d.f.)

Note: For the 1st year's results see "Results of the Field Experiments 1952", Section Cf/1.

Summary of Results

Dry Matter: cwt per acre
Treatments applied 1952

Starter	No fertilizer	Superphosphate Broadcast	Superphosphate Ploughed in	Muriate of Potash Broadcast	Muriate of Potash Ploughed in	Superphosphate and Muriate of Potash Broadcast	Superphosphate and Muriate of Potash Ploughed in	Mean
				1st cut				
				(±1.94)				
None	55.0(1)	55.8	57.3	57.9	60.1	57.7	56.1	56.9
Granular Super	56.1(1)	55.5	57.1	60.3	59.1	58.6	58.3	57.6
Mean (±1.37)	55.5(2)	55.6	57.2	59.1	59.6	58.1	57.2	57.2
Difference (±2.75)	+1.1(3)	-0.3	-0.2	+2.4	-1.0	+0.9	+2.2	+0.7(2)

(1) ±1.37
(2) ±0.97
(3) ±1.94

Mean Dry Matter %: 23.0

53/Cg/1.2

Dry Matter: cwt per acre
Treatments applied 1952

Starter	No fertilizer	Superphosphate Broadcast	Superphosphate Ploughed in	Muriate of Potash Broadcast	Muriate of Potash Ploughed in	Superphosphate and Muriate of Potash Broadcast	Superphosphate and Muriate of Potash Ploughed in	Mean
2nd cut								
				(±1.26)				
None	16.5(1)	19.0	18.2	18.3	20.7	22.5	21.0	19.1
Granular Super	19.4(1)	18.6	20.8	20.6	19.9	20.8	21.0	20.1
Mean (±0.89)	17.9(2)	18.8	19.5	19.5	20.3	21.6	21.0	19.6
Difference (±1.78)	+2.9(3)	-0.4	+2.6	+2.3	-0.8	-1.7	0.0	+1.0(2)

(1) ±0.89
(2) ±0.63
(3) ±1.26

Mean Dry Matter %: 37.5

3rd cut

				(±0.60)				
None	10.6(1)	11.1	9.5	12.6	11.3	12.4	12.0	11.3
Granular Super	10.9(1)	10.7	12.1	11.5	13.1	12.7	11.6	11.7
Mean (±0.43)	10.8(2)	10.9	10.8	12.1	12.2	12.6	11.8	11.5
Difference (±0.85)	+0.3(3)	-0.4	+2.6	-1.1	+1.8	+0.3	-0.4	+0.4(2)

(1) ±0.43
(2) ±0.30
(3) ±0.60

Mean Dry Matter %: 26.2

Total of 3 cuts

				(±2.60)				
None	82.1(1)	85.8	85.1	88.9	92.1	92.6	89.1	87.2
Granular Super	86.4(1)	84.7	89.9	92.4	92.1	92.0	90.9	89.4
Mean (±1.84)	84.3(2)	85.3	87 5	90.6	92.1	92.3	90.0	88.3
Difference (±3.67)	+4.3(3)	-1.1	+4.8	+3.5	0.0	-0.6	+1.8	+2.2(2)

(1) ±1.84
(2) ±1.30
(3) ±2.60

Mean Dry Matter %: 28.9

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CARROTS

Residual effects of Krilium - Rothamsted, Fosters and Barnfield; Woburn, Stackyard and Warren Field.

System of replication: 4 x 4 Latin Square.

Area of each plot: 0.00207 acre. Area harvested: 0.00138 acre.

Treatments, applied 1952:
Krilium per acre: None; 3 cwt broadcast and twice rotary cultivated in; 6 cwt broadcast and twice rotary cultivated in; 3 cwt broadcast and raked into seed bed.

Basal dressing: 5 cwt compound fertilizer (7% N, 7% P_2O_5, 10.5% K_2O).

Cultivations, etc.:

Fosters: Ploughed: Mar 13. Rotc tilled: Mar 13. Basal dressing applied, seed drilled: Apr 22. Lifted: Sept 24 and Oct 23.

Barnfield: Ploughed: Jan 28. Basal dressing applied, seed drilled: Apr 21. Lifted: Oct 20 and 26.

Stackyard: Hand dug: Jan 23. Seed sown: May 5. Basal dressing applied: May 14. Lifted: Sept 22.

Warren Field: Hand dug: Jan 27. Seed sown: May 6. Basal dressing applied: May 15. Singled: June 26. Lifted: Oct 5.

All fields, Variety: James' Scarlet Intermediate. Previous crop: Clover, Carrots, Ryegrass and Red Beet in strips on all plots.

Standard errors per plot. Roots tons per acre:

Fosters:	0.995	tons	per	acre	or 4.5%	(6 d.f.)
Barnfield:	1.41	"	"	"	" 11.1%	(6 d.f.)
Stackyard:	1.46	"	"	"	" 17.2%	(6 d.f.)
Warren Field:	0.573	"	"	"	" 7.7%	(6 d.f.)

https://doi.org/10.23637/ERADOC-1-173

Summary of Results

	Krilium: cwt per acre (applied 1952)				
		Rotary Cultivated in		Raked into seed bed	
	None	3	6	3	Mean
Roots: tons per acre					
Fosters					
Mean (±0.497)	22.80	21.82	21.43	21.58	21.91
Increase (±0.704)		-0.98	-1.37	-1.22	
Barnfield					
Mean (±0.71)	13.76	11.20	13.50	12.38	12.71
Increase (±1.00)		-2.56	-0.26	-1.38	
Stackyard					
Mean (±0.73)	7.70	9.02	9.02	8.22	8.49
Increase (±1.03)		1.32	1.32	0.52	
Warren Field					
Mean (±0.286)	8.25	7.35	7.92	6.35	7.47
Increase (±0.405)		-0.90	-0.33	-1.90	

		Plant no. thousands per acre	Percentage over $1\frac{1}{2}$" diameter
General means:	Stackyard	173	43.8
	Warren Field	161	29.2

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53/Ch/2.1

CARROTS

Soil conditioners - Rothamsted, Long Hoos VI and Stackyard; Woburn, Stackyard and Warren Field.

System of replication: 4 x 4 Latin square.

Area of each plot: 0.00207 acre. Area harvested: 0.00138 acre.

Treatments:
None and 3 proprietary soil conditioners A, B and C each at 10 cwt per acre active material, rotary cultivated in to 6".

Basal dressing: 5 cwt compound fertilizer (7% N; 7% P_2O_5; 10.5% K_2O) per acre.

Cultivations, etc.:
Long Hoos VI (R). Ploughed: Jan 22. Roto tilled, soil conditioners and basal dressing applied, rotor tilled: Mar 20. Seed drilled: Apr 20. Lifted: Sept 25 and Oct 28. Previous crop: Sugar beet.
Stackyard (R). Ploughed: Oct 20, 1952 and again Mar 9, 1953. Roto tilled, soil conditioners and basal dressing applied, roto tilled: Mar 21. Seed drilled: Apr 20. Lifted: Oct 19 and 24. Previous crop: Wheat.
Stackyard (W). Hand dug: Jan 23. Soil conditioners applied: Mar 25 and Apr 23. Seed drilled: May 5. Basal dressing applied: May 15. Singled: July 2. Lifted: Oct 12. Previous crop: Fallow.
Warren Field (W). Hand dug: Jan 27. Soil conditioners applied: Mar 25 and Apr 23. Seed sown: May 6. Basal dressing applied: May 15. Singled: June 23. Lifted: Aug 27-Sept 22. Previous crop: Barley.
All fields. Variety: James' Scarlet Intermediate.

Standard errors per plot: Roots: tons per acre
Long Hoos VI (R): 1.21 tons per acre or 4.3% (6 d.f.)
Stackyard (R): 1.51 tons per acre or 6.5% (6 d.f.)
Stackyard (W): 1.24 tons per acre or 13.3% (3 d.f.)*
Warren Field (W): 0.82 tons per acre or 6.4% (6 d.f.)

*1 row of the Latin square received incorrect treatments.

Summary of Results

	Soil conditioners 10 cwt per acre active material				
	None	A	B	C	Mean
Roots: tons per acre					
Rothamsted, Long Hoos VI					
Mean (±0.606)	28.26	28.91	27.13	29.08	28.35
Increase (±0.858)		+0.65	-1.13	+0.82	
Rothamsted, Stackyard					
Mean (±0.756)	23.80	24.93	21.65	23.06	23.36
Increase (±1.069)		+1.13	-2.15	-0.74	
Woburn, Stackyard					
Mean (±0.761)	8.74	9.66	9.38	9.62	9.35
Increase (±1.077)		+0.92	+0.64	+0.88	
Woburn, Warren Field					
Mean (±0.410)	11.75	12.30	13.75	13.35	12.79
Increase (±0.579)		+0.55	+2.00	+1.60	

	Plant no. thousands per acre	Percentage over $1\frac{1}{2}$" diameter
General means:		
Woburn, Stackyard	167	50.9
Woburn, Warren Field	174	56.6