ROTHAMSTED RESEARCH

Yields of the Field Experiments 1955

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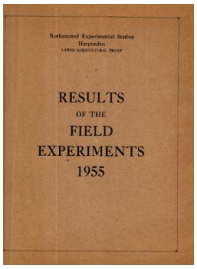

Short-term Experiments

Rothamsted Research

Rothamsted Research (1956) *Short-term Experiments ;* Yields Of The Field Experiments 1955, pp 71 - 101 **- DOI: https://doi.org/10.23637/ERADOC-1-175**

WINTER WHEAT

The effects of Crop sequences, Varieties, Seed rates and Nitrogen on the incidence of Eyespot (Cercosporella herpotrichoides) - Long Hoos I, II and III, 1955. The 2nd preliminary year.

For details of treatments and crop sequences etc., see "Results of the Field Experiments 1954", Section 54/Ca/2.1 with the exception that in 1955 the seed rates were changed to

Holdfast: 1½, 3 bushels per acre
Cappelle: 2, 4 bushels per acre,

in order to give approximately the same number of seeds of each variety per acre.

Area of each plot: 0.0212 acre. Area harvested: 0.0140 acre.

Cultivations, etc.: Ploughed: Oct 8, 1954. Seed combine drilled: Oct 15. 1st application of nitrochalk: Mar 15, 1955. 2nd application: May 9. Combine harvested: Aug 19.

Standard error per plot:
Grain (at 85% D.M.): 1.92 cwt per acre or 5.8% (12 d.f.)

Records of incidence of disease (Eyespot and Take-All), estimates of % area lodged, and counts of plant, shoot and straw numbers were made.

https://doi.org/10.23637/ERADOC-1-175

55/Ca/1.2

Summary of Results

Response to	Mean	Variety: Holdfast	Variety: Cappelle	Seed rate: Single	Seed rate: Double	Nitrogen: cwt per acre 0.46	Nitrogen: cwt per acre 0.93
		Responses to treatments					
Grain (at 85% Dry Matter)							
Previous crop wheat: Mean yield 17.1 cwt per acre							
	(±0.96)			(±1.36)			
Variety (Cappelle - Holdfast)	+6.5	-	-	+7.1	+5.9	+4.8	+8.2
Seed rate (Double - Single)	-0.8	-0.2	-1.4	-	-	-1.6	0.0
Nitrogen (0.93 - 0.46)	+3.6	+1.9	+5.3	+2.8	+4.4	-	-
Previous crop potatoes: Mean yield 49.3 cwt per acre							
	(±0.96)			(±1.36)			
Variety (Cappelle - Holdfast)	+12.9	-	-	+12.8	+13.0	+9.9	+15.9
Seed rate (Double - Single)	+3.3	+3.2	+3.4	-	-	+2.8	+3.8
Nitrogen (0.93 - 0.46)	+5.6	+2.6	+8.6	+5.1	+6.1	-	-
Straw							
Previous crop wheat: Mean yield 24.3 cwt per acre							
Variety (Cappelle - Holdfast)	+4.3	-	-	+4.1	+4.5	+8.3	+0.3
Seed rate (Double - Single)	+0.5	+0.3	+0.7	-	-	+0.7	+0.3
Nitrogen (0.93 - 0.46)	+8.1	+12.1	+4.1	+8.3	+7.9	-	-
Previous crop potatoes: Mean yield 42.0 cwt per acre							
Variety (Cappelle - Holdfast)	-2.5	-	-	-4.3	-0.7	-3.2	-1.8
Seed rate (Double - Single)	+5.3	+3.5	+7.1	-	-	+2.8	+7.8
Nitrogen (0.93 - 0.46)	+4.2	+3.5	+4.9	+1.7	+6.7	-	-

General means. Grain: 33.2 cwt per acre
Straw: 33.2 cwt per acre

Mean dry matter % as harvested, Grain: 81.8

https://doi.org/10.23637/ERADOC-1-175

WINTER WHEAT

Control of wheat bulb fly by insecticides - Pennell's Piece 1955.

Design: 4 randomized blocks of 6 plots each.

Area of each plot: 0.00643 acre.

Treatments: Insecticides:-

None (2 plots per block). (0)
Seed dressed with Technical Dieldrin (97%) at 2.25% of seed w/w using cellulose ether sticker. (1)
4% Dieldrin dust at 1 cwt per acre combine drilled with seed. (2)
Sprayed early with Parathion 0.05% v/v at 100 gallons per acre. (3)
Sprayed late with Parathion 0.05% v/v at 100 gallons per acre. (4)

Basal dressing per acre: 3 cwt nitrochalk, 20 cwt hydrated lime.

Note: All seed treated with organo-mercurial fungicide.

Cultivations, etc.: Ploughed (for bare fallow): Nov 2, 1953. Lime applied: Mar 3, 1954. Ploughed: May 17. Seed drilled at 2 bushels per acre: Dec 21. "3" plots sprayed with Parathion: Feb 11, 1955. "4" plots sprayed with Parathion: Apr 7. Nitrochalk applied: May 9. Combine harvested: Aug 24. Variety: Cappelle. Previous crop: Bare fallow.

Standard error per plot:
Grain (at 85% dry matter): 3.75 cwt per acre or 8.4% (16 d.f.)

Counts of numbers of plants, tillers, damaged tillers and of wheat bulb fly larvae were made.

Summary of Results

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

	Insecticide					
	0	1	2	3	4	Mean
Mean (±1.88)	41.0(1)	47.2	53.7	47.9	38.7	44.9
Increase (±2.30)		+6.2	+12.7	+6.9	-2.3	

(1) ±1.33

Mean dry matter % as harvested: 84.4

https://doi.org/10.23637/ERADOC-1-175

WHEAT

Seed rates in relation to control of wheat bulb fly - Long Hoos 7.
Preliminary years 1954 (spring wheat) and 1955 (winter wheat).

Design: 4 4 × 4 squares with treatments on rows in 1954 and on columns in 1955.

Area of each plot: 0.063 acre. Area harvested: 1954 - 0.0226 acre.
1955 - 0.0262 acre.

Treatments: 1954 and 1955.
Bare fallow.
Seed rates: $\frac{1}{3}$; 1; 3 bushels per acre.
The 1954 treatments were ignored in 1955, so that there were, in effect, 4 randomized blocks of 3 plots in each year.

Basal dressings per acre.
1954. $2\frac{1}{2}$ cwt sulphate of ammonia.
1955. $1\frac{1}{2}$ cwt compound granular fertilizer (12% N, 12% P_2O_5, 15% K_2O) combine drilled; 3 cwt sulphate of ammonia.

Cultivations, etc.:
1954. Ploughed: Dec 29, 1953. Sulphate of ammonia applied: Mar 15, 1954. Seed sown: Mar 18. Combine harvested: Sept 22. Variety: Koga II. Previous crop: Sugar beet.
1955. Ploughed: Oct 14, 1954. Seed (dressed with organo-mercurial compound only), combine drilled: Dec 22. Sulphate of ammonia applied: May 13, 1955. Combine harvested: Aug 25. Variety: Cappelle.

Standard errors per plot: Grain (at 85% D.M.).
1954: 2.12 cwt per acre or 6.3% (6 d.f.)
1955: 5.66 cwt per acre or 16.3% (6 d.f.)

Records were made of the following:
1954. Plant number.
1955. Number of wheat bulb fly larvae, weight per ear and no. of grains per ear.

Summary of Results

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

	Seed rate: bushels per acre $\frac{1}{3}$	1	3	Mean
1954. Spring wheat (±1.06)	29.9	33.7	37.5	33.7
1955. Winter wheat (±2.83)	26.1	40.3	37.4	34.6

Mean dry matter % as harvested, 1954: 79.4
1955: 84.8

https://doi.org/10.23637/ERADOC-1-175

WINTER WHEAT

Varieties, seed rates, levels and times of application of N - Woburn, Roadpiece 1955, the 2nd year.

Design: 4 randomized blocks of 8 plots each, certain high order interactions being confounded with block differences. In addition each block contained 2 plots with no nitrogen, the variety x seed rate interaction being confounded.

Area of each plot: 0.0159 acre. Area harvested: 0.0140 acre.

Treatments: All combinations of:-
Varieties: Holdfast; Cappelle.
Seed rates: Holdfast, 1½; 3 bushels per acre.
Cappelle, 2; 4 bushels per acre.
Nitrogen: 0.5; 1.0 cwt N per acre as nitrochalk.
Time of application of N: half dressing in March and again in May; whole dressing mid March; mid April; mid May.

Basal dressing: 1 cwt per acre compound granular fertilizer (12% N, 12% P_2O_5, 15% K_2O) combine drilled with seed.

Cultivations, etc.: Ploughed: Sept 28, 1954. Combine drilled: Oct 25. March top dressing applied: Mar 15, 1955. April top dressing applied: Apr 20. All plots sprayed with D.N.O.C. at 1½ gallons in 80 gallons: May 19. May top dressing applied: May 24. Combine harvested: Aug 22. Varieties: Holdfast and Cappelle. Previous crop: Wheat.

Note (1) The experiment is a repetition on the same plots of the one carried out in 1954 (see "Results of the Field Experiments 1954", Section 54/Ca/7). There were minor changes in the treatments but the same randomization was used.

(2) Records of incidence of disease (Take-all and Eyespot) and weeds, and counts of plant, shoot and ear numbers were made.

Standard error per plot.
Grain: 3.95 cwt per acre or 26.9% (12 d.f.)

https://doi.org/10.23637/ERADOC-1-175

Summary of Results

Grain: cwt per acre

	T_1	T_2	T_3	T_4	Mean	
Mean (±1.40)	16.5	16.9	18.9	12.2	16.1	
		(±1.97)			(±0.99)	
V_1	17.0	15.6	18.3	12.4	15.8	
V_2	16.0	18.3	19.6	12.0	16.5	
Difference (±2.79)	-1.0	+2.7	+1.3	-0.4	+0.7	(±1.40)
R_1	14.1	16.3	16.8	9.6	14.2	
R_2	18.9	17.6	21.1	14.8	18.1	
Difference (±2.79)	+4.8	+1.3	+4.3	+5.2	+3.9	(±1.40)
N_1	14.9	11.9	15.2	12.2	13.6	
N_2	18.1	22.0	22.6	12.1	18.7	
Difference (±2.79)	+3.2	+10.1	+7.4	-0.1	+5.1	(±1.40)

	R_1	R_2	N_0	N_1	N_2	Mean
			(±1.40)	(±0.99)		
Mean (±0.99)			8.8	13.6	18.7	14.7
	(±1.40)		(±1.97)	(±1.40)		(±0.88)
V_1	13.7	18.0	8.8	13.6	18.0	14.4
V_2	14.7	18.2	8.8	13.5	19.4	14.9
R_1			8.9	11.9	16.5	13.1
R_2			8.6	15.3	20.9	16.2

Mean dry matter % as harvested: 85.5

Treatments

V_1 Holdfast
V_2 Cappelle

R_1, R_2 1½, 3 bushels per acre
R_1, R_2 2, 4 bushels per acre

N_0 No N
N_1 0.46 cwt N per acre
N_2 0.93 cwt N per acre

T_1 Nitrochalk half in March half in May
T_2 Nitrochalk all in mid March
T_3 Nitrochalk all in mid April
T_4 Nitrochalk all in mid May

The V × R table does not include the plots receiving no nitrogen.

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55/Ca/5

SPRING WHEAT

Residual effects of Dung, Nitrogen, Phosphate and Potash - Sawyers I 1955.

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

Area of each plot: 0.0210 acre. Area harvested: 0.0150 acre.

Treatments, applied to potatoes in 1954: All combinations of:-
Dung: None; 10 tons per acre.
Nitrogen: None; 0.6 cwt N per acre applied as sulphate of ammonia.
Phosphate: None; 0.6 cwt P_2O_5 per acre applied as superphosphate.
Potash: None; 1.0 cwt K_2O per acre applied as muriate of potash.

Basal dresssing to wheat: 4 cwt nitrochalk per acre; 21 cwt ground chalk per acre.

Cultivations, etc.: Ploughed: Jan 21, 1955. Chalk applied: Mar 31. Nitrogen applied, seed drilled at 2 bushels per acre: Apr 1. Sprayed with DNOC at 8 lb per acre in 80 gallons: May 2. Combine harvested: Sept 1. Variety: Koga II. Previous crop: Potatoes.

Standard error per plot:
Grain: 2.20 cwt per acre or 7.5% (18 d.f.)

For details of the preceding potato experiment see 54/Cd/1.

Summary of Results

Grain: Mean yield 29.5 cwt per acre

Responses to treatments

Response to	Mean	Dung: tons per acre		cwt per acre N		P_2O_5		K_2O	
		None	10	None	0.6	None	0.6	None	1.0
	(±0.78)	(±1.10)							
Dung	+1.2	-	-	+1.1	+1.3	+1.5	+0.9	+0.5	+1.9
N	+1.7	+1.6	+1.8	-	-	+0.8	+2.6	+1.4	+2.0
P_2O_5	+1.4	+1.7	+1.1	+0.5	+2.3	-	-	+2.0	+0.8
K_2O	-0.1	-0.8	+0.6	-0.4	+0.2	+0.5	-0.7	-	-

Mean dry matter % as harvested: 85.0

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SPRING WHEAT

Rates and times of application of nitrogen - Rothamsted (R) Great Field I and Woburn (W) Butt Close.

Design (each field): 22 treatments arranged in 4 blocks of 13 plots each, the control and 3 treatments occurring in every block, the other 18 treatments occurring in 2 blocks. The total amounts of N applied per block were equal.

Area of each plot: 0.0212 acre. Area harvested: 0.0140 acre.

Treatments: None, and all combinations of:-
Nitrogen: 0.3; 0.6; 0.9 cwt N per acre applied as 'Nitro-Chalk'.
Times of application: All in seed bed (S); all as early top dressing (E); all as late top dressing (L); $\frac{1}{2}$ S & $\frac{1}{2}$ E; $\frac{1}{2}$ S & $\frac{1}{2}$ L; $\frac{1}{2}$ E & $\frac{1}{2}$ L; $\frac{1}{3}$ S, $\frac{1}{3}$ E & $\frac{1}{3}$ L.

Basal dressing: 1.15 cwt per acre compound fertilizer (13% P_2O_5; 13% K_2O) combine drilled with the seed.

Cultivations, etc.:
Great Field I (R). Ploughed: Nov - Dec 1954. Seed bed 'Nitro-Chalk' applied: Mar 31, 1955. Seed drilled at $2\frac{3}{4}$ bushels per acre with basal fertilizer: Apr 4. Early 'Nitro-Chalk' top dressing applied: Apr 30. Sprayed with D.N.C. 8 lb active material at 80 gallons per acre: May 11. Late 'Nitro-Chalk' top dressing applied: May 19. Combine harvested: Sept 1. Variety: Koga II. Previous crop: Potatoes.
Butt Close (W). Ploughed: Dec 23-28, 1954. 2 tons ground chalk per acre applied: Feb 3, 1955. Seed bed 'Nitro-Chalk' applied, seed drilled at $2\frac{3}{4}$ bushels per acre with basal fertilizer: Mar 22. Early 'Nitro-Chalk' top dressing applied: Apr 20. Late 'Nitro-Chalk' top dressing applied: May 16. Sprayed with MCPA amine at low volume: May 22. Combine harvested: Aug 23. Variety: Koga II. Previous crop: Potatoes.

Standard errors per plot. Grain: cwt per acre.
Great Field I (R): 2.01 cwt per acre or 4.5% (27 d.f.)
Butt Close (W): 2.87 cwt per acre or 11.1% (27 d.f.)

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Summary of Results

Grain: cwt per acre

Rothamsted Great Field I

	Time of application							
	S	E	L	½S½E	½S½L	½E½L	⅓S⅓E⅓L	Mean
			(±1.52)				(±1.01)	(±0.50)
N: cwt per acre								
None								41.5(1)
0.3	44.1	42.9	44.5	46.0	45.9	44.9	44.1	44.6
0.6	45.9	45.0	43.7	43.7	45.8	44.1	46.4	45.1
0.9	46.1	44.4	45.7	45.8	44.3	45.9	45.0	45.3
Mean (±0.84)	45.3	44.1	44.7	45.2	45.3	44.9	45.2(2)	44.7

(1) ±1.01 (2) ±0.58

Mean dry matter % as harvested: 84.5

Woburn Butt Close

	Time of application							
	S	E	L	½S½E	½S½L	½E½L	⅓S⅓E⅓L	Mean
			(±2.16)				(±1.43)	(±0.72)
N: cwt per acre								
None								12.2(1)
0.3	26.4	21.0	24.0	21.0	21.3	22.4	20.8	22.2
0.6	32.7	29.1	22.9	28.7	29.9	29.9	29.0	28.9
0.9	33.4	25.9	26.4	30.8	30.6	23.7	33.5	29.7
Mean (±1.20)	30.8	25.3	24.4	26.8	27.3	25.4	27.7(2)	25.8

(1) ±1.43 (2) ±0.83

Mean dry matter % as harvested: 84.1

Time of application

S In Seedbed.
E Early top dressing.
L Late top dressing.

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SPRING WHEAT

Varieties and levels of nitrogen - Great Field I 1955.

Design: 3 randomized blocks of 5 plots each, plots being split into 2 for the application of nitrogen.

Area of each sub plot: 0.0083 acre. Area harvested: 0.0057 acre.

Treatments: All combinations of:
Whole plots. Varieties: Atle; Atson; Koga II; Peko; Progress.
Sub plots. Nitrogen: 0.3; 0.6 cwt N per acre applied as nitrochalk.

Basal dressing: 1.15 cwt compound granular fertilizer (13% P_2O_5, 13% K_2O) per acre, combine drilled with seed.

Cultivations, etc.: Ploughed: Dec 29, 1954. Nitrogen applied, seed combine drilled at 2½ bushels per acre: Apr 14, 1955. Sprayed with DNOC at 6 lb per acre in 80 gallons: May 12. Combine harvested: Aug 31. Previous crop: Potatoes.

Standard errors per plot, Grain:
Whole plot: 1.75 cwt per acre or 4.7% (8 d.f.)
Sub plot: 1.35 cwt per acre or 3.6% (10 d.f.)

Summary of Results

Grain: cwt per acre

	Variety					
	Atle	Atson	Koga II	Peko	Progress	Mean
N: cwt per acre			(±1.15)*			
0.3	35.9	35.0	40.6	38.3	38.0	37.6
0.6	33.4	32.8	41.0	38.0	37.4	36.5
Mean (±1.01)	34.7	33.9	40.8	38.1	37.7	37.0
Diff. (±1.10)	-2.5	-2.2	+0.4	-0.3	-0.6	-1.1 (±0.49)

*for use in comparisons other than vertical.

Mean dry matter % as harvested: 83.5

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BARLEY

Seed rates and levels of nitrogen - Great Field I 1955.

Design: 3 randomized blocks of 12 plots each.

Area of each plot: 0.0140 acre.

Treatments: All combinations of:-
Seed rates: 1; 2; 3 bushels per acre.
Nitrogen: None; 0.3; 0.6; 0.9 cwt N per acre applied as sulphate of ammonia.

Basal dressing: 1.15 cwt compound granular fertilizer (13% P_2O_5, 13% K_2O) per acre combine drilled. 1 ton ground chalk per acre.

Cultivations, etc.: Ploughed: Dec 29, 1954. Chalk and sulphate of ammonia applied: April 1, 1955. Seed combine drilled: April 2. Sprayed with D.N.O.C. at 6 lb. per acre in 80 gallons: May 11. Combine harvested: Aug 20. Variety: Proctor. Previous crop: Potatoes.

Standard error per plot:
Grain (at 85% D.M.): 2.43 cwt per acre or 5.7% (22 d.f.).

Summary of Results

Seed rate: bushels per acre	N: cwt per acre None	0.3	0.6	0.9	Mean
	Grain (at 85% dry matter): cwt per acre				
		(±1.40)			(±0.70)
1	41.4	44.7	41.7	42.9	42.7
2	43.3	44.6	44.7	40.7	43.3
3	41.4	42.4	43.2	41.6	42.1
Mean (±0.81)	42.1	43.9	43.2	41.7	42.7
	Straw: cwt per acre				
1	27.7	33.0	30.9	32.8	31.1
2	27.7	31.9	33.0	35.3	32.0
3	25.5	29.6	33.2	36.6	31.2
Mean	27.0	31.5	32.4	34.9	31.4

Mean dry matter % as harvested, Grain: 82.6

Records of incidence of disease (Eyespot and Take-All), estimates of % area lodged and counts of ear emergence and plant, straw and ear numbers, were made.

https://doi.org/10.23637/ERADOC-1-175

BARLEY

Rates and times of application of nitrogen - Rothamsted (R) Great Field I and Woburn (W) Butt Close.

Design (each field): 22 treatments arranged in 4 blocks of 13 plots each, the control and 3 treatments occurring in every block, the other 18 treatments occurring in 2 blocks. The total amounts of N applied per block were equal.

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

Treatments: None, and all combinations of:-
Nitrogen: N_1; N_2; N_3.
Times of application: All in seed bed (S); all as early top dressing (E); all as late top dressing (L); $\frac{1}{2}$ S & $\frac{1}{2}$ E; $\frac{1}{2}$ S & $\frac{1}{2}$ L; $\frac{1}{2}$ E & $\frac{1}{2}$ L; $\frac{1}{3}$ S, $\frac{1}{3}$ E & $\frac{1}{3}$ L.
Where N_1; N_2; N_3 =
Great Field I (R): 0.23; 0.46; 0.69 cwt N per acre applied as 'Nitro-Chalk'.
Butt Close (W): 0.3; 0.6; 0.9 cwt N per acre applied as 'Nitro-Chalk'.

Basal dressing: 1.15 cwt per acre compound fertilizer (13% P_2O_5, 13% K_2O) combine drilled with the seed.

Cultivations, etc.:
Great Field I (R). Ploughed: Nov - Dec 1954. Seed drilled at 2 bushels per acre with basal fertilizer, and seed bed 'Nitro-Chalk' applied: Apr 2, 1955. Early 'Nitro-Chalk' top dressing applied: Apr 30. Sprayed with DNC 8 lb active material in 80 gallons per acre: May 11. Late 'Nitro-Chalk' top dressing applied: May 19. Combine harvested: Aug 21. Variety: Herta. Previous crop: Potatoes.
Butt Close (W). Ploughed: Dec 23-28, 1954. Applied ground chalk at 2 tons per acre: Feb 4, 1955. Seed bed 'Nitro-Chalk' applied: Mar 21. Seed drilled at 2 bushels per acre with basal fertilizer: Mar 22. Early top dressing of 'Nitro-Chalk' applied: Apr 20 Late top dressing of 'Nitro-Chalk' applied: May 16. Sprayed with MCPA amine at low volume: May 22. Combine harvested: Aug 22. Variety: Herta. Previous crop: Potatoes.

Standard errors per plot. Grain: cwt per acre.
Great Field I(R): 1.68 cwt per acre or 3.4% (27 d.f.)
Butt Close (W): 3.84 cwt per acre or 9.9% (27 d.f.)*

Note: The Woburn crop was severely and irregularly damaged by birds. Estimates of damage were made before harvesting and the yields have been corrected on the basis of these.

*At 85% dry matter.

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Summary of Results

Grain: cwt per acre

Rothamsted Great Field I

	Time of application							
	S	E	L	½S½E	½S½L	½E½L	⅓S⅓E⅓L	Mean
			(±1.26)				(±0.84)	(±0.42)
N: cwt per acre								
None								46.9 (1)
0.23	48.2	47.7	49.8	46.2	47.1	47.6	49.2	48.1
0.46	50.5	51.2	47.7	49.5	50.2	48.9	49.8	49.7
0.69	48.0	46.6	51.5	48.5	47.7	48.2	48.9	48.5
Mean (±0.70)	48.9	48.5	49.7	48.0	48.3	48.2	49.3 (2)	48.7

(1) ±0.84 (2) ±0.48

Mean dry matter % as harvested: 85.0

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

Woburn Butt Close

	Time of application							
	S	E	L	½S½E	½S½L	½E½L	⅓S⅓E⅓L	Mean
			(±2.89)				(±1.92)	(±0.96)
N: cwt per acre								
None								21.2 (1)
0.3	29.7	34.7	34.0	34.8	32.6	32.2	31.5	32.6
0.6	41.4	44.4	42.0	37.3	36.2	39.3	44.4	41.2
0.9	46.5	50.5	41.9	48.7	44.7	45.4	48.3	46.8
Mean (±1.61)	39.2	43.2	39.3	40.3	37.8	38.9	41.4 (2)	38.7

(1) ±1.92 (2) ±1.11

Mean dry matter % as harvested: 84.5

Time of application

S In Seedbed.
E Early top dressing.
L Late top dressing.

https://doi.org/10.23637/ERADOC-1-175

55/Cb/3

BARLEY

Varieties and levels of nitrogen (Growth Study) - Great Field I 1955.

Design: 6 × 6 Latin square.

Area of each plot: 0.0223 acre. Area harvested: 0.0118 acre.

Treatments: All combinations of:
Varieties: Herta; Plumage Archer; Proctor.
Nitrogen: None; 0.46 cwt N per acre applied as nitrochalk.

Basal dressing: 1.15 cwt compound granular fertilizer (13% P_2O_5, 13% K_2O) per acre, combine drilled.

Cultivations, etc.: Ploughed: Dec 29, 1954. Nitrochalk applied, seed combine drilled with placement machine at 2½ bushels per acre: Apr 2, 1955. Sprayed with DNOC at 6 lb per acre in 80 gallons: May 11. Combine harvested: Aug 22. Previous crop: Potatoes.

Standard error per plot:
Grain (at 85% D.M.): 2.45 cwt per acre or 5.0% (20 d.f.).

Records were made of the following:-
At harvest:- Shoot number, 1000 corn weight
Straw height, N analyses of grain, straw and chaff.

At intermediate samplings (at fortnightly intervals from May-August):-

Dry weight of straw and ears
Shoot number
Leaf area
Straw height.

Summary of Results

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

N: cwt per acre	Variety: Herta	Plumage Archer	Proctor	Mean
		(±1.00)		
None	48.5	43.9	51.0	47.8
0.46	55.6	40.6	52.7	49.6
Mean (±0.71)	52.0	42.3	51.8	48.7
Difference (±1.42)	+7.1	-3.3	+1.7	+1.8 (±0.82)

Mean dry matter % as harvested: 87.6

BARLEY

Residual effects of phosphate and potash - Highfield V 1955.

Design: 8 randomized blocks of 8 plots each, the interaction PKS × placement being confounded with block differences.

Area of each plot: 0.00923 acre.

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

Note: the division of each plot into sub plots in 1954 was ignored in 1955.

Basal dressing: 1 cwt nitrochalk per acre.

Cultivations, etc.: Ploughed: Mar 21, 1955. Seed drilled at $2\frac{3}{4}$ bushels per acre: Apr 6. Nitrochalk applied: Apr 7. Sprayed with 2, 4D, medium volume, $2\frac{1}{2}$ pints per acre: May 20. Combine harvested: Aug 17. Variety: Herta. Previous crop: Lucerne.

Standard error per plot.
Grain (at 85% D.M.): 1.81 cwt per acre or 3.9% (42 d.f.)

For previous years' results see 52/Cf/1, 53/Cg/1 and 54/Ce/1.

https://doi.org/10.23637/ERADOC-1-175

Summary of Results

Starter	Treatments applied 1952: 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
Grain (at 85% Dry Matter): cwt per acre								
	(±0.64)				(±0.90)			
None	44.4	45.3	46.8	45.7	46.5	47.5	45.2	45.7
Super	44.9	45.8	44.2	47.2	46.9	47.8	45.7	45.9
Mean (±0.64)	44.7 (1)	45.5	45.5	46.5	46.7	47.6	45.4	45.8
Difference (±1.28)	+0.5 (2)	+0.5	-2.6	+1.5	+0.4	+0.3	+0.5	+0.2 (1)

(1) ±0.45
(2) ±0.90

Straw (at 85% Dry Matter): cwt per acre								
None	34.5	36.7	38.8	35.9	37.7	42.2	38.9	37.4
Super	36.4	35.6	36.8	40.1	37.4	41.8	36.5	37.6
Mean	35.4	36.1	37.8	38.0	37.6	42.0	37.7	37.5
Difference	+1.9	-1.1	-2.0	+4.2	-0.3	-0.4	-2.4	+0.2

Mean dry matter % as harvested, Grain: 84.0
Straw: 82.6

https://doi.org/10.23637/ERADOC-1-175

55/Cb/5

BARLEY

Varieties and levels of nitrogen - Great Field I 1955.

Design: 3 randomized blocks of 8 plots each, plots being split into 2 for the application of nitrogen.

Area of each sub plot: 0.0103 acre. Area harvested: 0.0069 acre.

Treatments: All combinations of:-
Whole plots. Varieties: Carlsberg; Herta; Maythorpe; Piroline; Plumage Archer; Proctor; Provost; Research.
Sub plots. Nitrogen: 0.23; 0.46 cwt N per acre applied as nitrochalk.

Basal dressing per acre: 1.15 cwt compound granular fertilizer (13% P_2O_5, 13% K_2O) combine drilled; 1 ton ground chalk.

Cultivations, etc.: Ploughed: Dec 29, 1954. Chalk applied: Apr 1, 1955. Nitrogen applied, seed combine drilled at 2 bushels per acre: Apr 5. Sprayed with DNOC at 6 lb per acre in 80 gallons: May 12. Combine harvested: Aug 21. Previous crop: Potatoes.

Standard errors per plot. Grain (at 85% D.M.).
Whole plot: 1.33 cwt per acre or 3.1% (14 d.f.)
Sub plot: 1.79 cwt per acre or 4.2% (16 d.f.)

Summary of Results

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

N: cwt per acre	Variety 1	2	3	4	5	6	7	8	Mean
				(±1.06)*					
0.23	43.0	48.3	44.6	48.2	37.2	46.1	41.3	41.1	43.7
0.46	42.2	45.7	43.4	44.9	36.1	44.7	38.3	39.4	41.9
Mean (±0.77)	42.6	47.0	44.0	46.6	36.7	45.4	39.8	40.2	42.8
Diff. (±1.46)	-0.8	-2.6	-1.2	-3.3	-1.1	-1.4	-3.0	-1.7	-1.8 (±0.52)

*for use in comparisons other than vertical.

Mean dry matter % as harvested: 85.3

Varieties:
1 Carlsberg
2 Herta
3 Maythorpe
4 Piroline
5 Plumage Archer
6 Proctor
7 Provost
8 Research

https://doi.org/10.23637/ERADOC-1-175

55/Cc/1

SPRING BEANS

The control of Black Aphids (Aphis Fabae) by spraying and time of sowing - Fosters 1955.

Design: 4 × 4 Latin square, plots split into 2 for the application of spray.

Area of each sub plot: 0.0189 acre.

Treatments: All combinations of:-
Whole plots. Times of sowing: Mar 19; April 6; April 25; May 13.
Sub plots. Spray: None; "Metasystox" (0.05% active ingredient) at 100 gallons per acre.

Note: The beans sown on May 13 were sprayed twice.

Basal dressing: 6 cwt compound granular fertilizer (10% P_2O_5, 20% K_2O) per acre.

Cultivations, etc.: Ploughed: Oct 22, 1954. Basal fertilizer applied, seed drilled at 195 lb per acre: Mar 19, 1955, April 6, April 25, May 13 respectively. Sprayed with "Metasystox": June 23. Last sown crop sprayed with "Metasystox" for second time: July 22. Combine harvested first three sowings: Aug 27. Combine harvested last sowing: Sept 12. Variety: Garton's Tick. Previous crop: Barley.

Standard errors per plot. Grain (at 85% dry matter):
Whole plot: 1.49 cwt per acre or 12.0% (6 d.f.)
Sub plot: 1.54 cwt per acre or 12.4% (12 d.f.)

Counts of Black Aphids and of aphis predators were made at weekly intervals from June to August.

Summary of Results

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

Spray	Time of sowing Mar 19	Apr 6	Apr 25	May 13	Mean
			(±0.92)*		
None	16.9	13.1	6.7	2.4	9.8
Metasystox	19.2	18.3	12.0	10.5	15.0
Mean (±0.74)	18.0	15.7	9.3	6.4	12.4
Difference (±1.09)	2.3	5.2	5.3	8.1	5.2 (±0.54)

* for use in comparisons other than vertical.

Mean dry matter % as harvested: 82.4.

https://doi.org/10.23637/ERADOC-1-175

55/Cc/2.1

SPRING BEANS

Control of weeds by spraying and cultivation - Fosters 1955.

Design: 4 randomized blocks of 5 plots each, 2 blocks being sprayed and 2 unsprayed.

Area of each plot: 0.0202 acre. Area harvested: 0.0126 acre.

Treatments: All combinations of:-
Spraying (on blocks): None; DNBP high volume
Additional cultivations:

None	(0)
Harrowed once	(1)
Harrowed three times	(2)
Mechanical weeder once	(3)
Mechanical weeder three times	(4)

Basal dressing: 6 cwt compound granular fertilizer (10% P_2O_5, 20% K_2O) per acre.

Basal inter-row cultivation: One early horse hoeing.

Cultivations, etc.: Ploughed: Oct 22, 1954. Basal fertilizer applied, seed drilled at 195 lb per acre: Mar 19, 1955. Horse hoed all plots: May 11. Combine harvested: Aug 27. Variety: Spring Tick. Previous crop: Barley.

Treatment cultivations:
(1) Harrowed: April 30.
(2) Harrowed: April 30, May 6, May 31.
(3) Mechanical weeder: April 30.
(4) Mechanical weeder: April 30, May 6, May 31.

DNBP at 4 pts in 100 gallons per acre sprayed: May 26.

Standard error per plot:
Grain: 1.07 cwt per acre or 6.3% (8 d.f.)

https://doi.org/10.23637/ERADOC-1-175

55/Cc/2.2

Summary of Results

Grain: cwt per acre

Spray	Treatment cultivations 0	1	2	3	4	Mean
			(±0.76)*			
None	18.5	17.5	14.3	18.5	16.4	17.0
DNBP	17.1	17.6	15.1	17.4	17.7	17.0
Mean (±0.54)	17.8	17.5	14.7	18.0	17.1	17.0
Difference (±1.07)+	-1.4	+0.1	+0.8	-1.1	+1.3	0.0

*for use in horizontal comparisons only

+for use in the comparison of two differences only

Mean dry matter % as harvested: 86.2

Treatment cultivations

(0) No extra cultivation.
(1) Harrowed once.
(2) Harrowed three times.
(3) Mechanical weeder once.
(4) Mechanical weeder three times.

https://doi.org/10.23637/ERADOC-1-175

55/Cc/3

SPRING BEANS

Flower drop - Hormone sprays - Fosters 1955.

Design: 4 randomized blocks of 7 plots each.

Area of each plot: 0.00550 acre. Area harvested: 0.00458 acre.

Treatments: Hormone sprays.
None (3 plots per block). (0)
2; 3 applications of 4 chlorophenoxyacetic acid. (1) & (2)
2; 3 applications of ∝ (2:4:5 trichlorophenoxy) propionic acid. (3) & (4)

The sprays, at a concentration of 5 p.p.m., were applied during the flowering period in successive doses at the following rates per acre:-

Treatments (1), (2), (3) and (4): 120 gallons and later an additional 200 gallons.
Treatments (2) and (4): an additional 320 gallons as a final application.

Basal dressing: 9 cwt compound granular fertilizer (10% P_2O_5, 20% K_2O) per acre.

Cultivations, etc.: Ploughed: Oct 19, 1954. Basal fertilizer applied, seed sown at 190 lb per acre: Mar 30, 1955. Sprayed with hormone sprays: June 24, July 1, July 9. Combine harvested: Aug 27. Variety: Gartons' Tick. Previous crop: Barley.

Standard error per plot:
Grain: 2.41 cwt per acre or 20.4% (20 d.f.)

N.B. Counts of numbers of pods were made. Damage by Aphids was severe and irregular.

Summary of Results

Grain: cwt per acre

	Treatments					
	0	1	2	3	4	Mean
Mean (±1.21)	12.0(1)	13.9	12.0	9.7	11.0	11.8
Increase (±1.39)		+1.9	0.0	-2.3	-1.0	

(1) ±0.70.
Mean dry matter % as harvested: 84.8

Treatments: 0 No spray
1 2 spray applications } 4 chlorophenoxyacetic acid.
2 3 spray applications }
3 2 spray applications } ∝ (2:4:5 trichlorophenoxy)
4 3 spray applications } propionic acid.

https://doi.org/10.23637/ERADOC-1-175

55/Cd/1

POTATOES

Placement of Nitrogen and Potash - Little Hoos 1955.

Design: 6 randomized blocks of 12 plots each, with levels of N by levels of K partially confounded with block differences.

Area of each plot: 0.0140 acre. Area harvested: 0.0057 acre.

Treatments: All combinations of:-
Nitrogen: None; 0.5; 1.0 cwt N per acre as sulphate of ammonia.
Potash: None; 0.75; 1.5 cwt K_2O per acre as sulphate of potash.
Methods of placement: Broadcast on flat before planting; Side band placement at planting.

Basal dressing: 1.0 cwt P_2O_5 per acre as superphosphate, placement drilled as above.

Cultivations, etc.: Ploughed: Oct 7, 1954. Broadcast fertilizers applied, machine planted with placed fertilizers: Apr 23, 1955. Earthed up: July 6. Sprayed with sulphuric acid, 20% B.O.V.: Sept 28. Hand dug: Oct 7. Variety: Majestic. Previous crop: Beans.

Standard error per plot:
Total tubers: 0.589 tons per acre or 11.4% (31 d.f.)

Summary of Results

Total tubers: tons per acre

K_2O: cwt per acre	N: cwt per acre					
		Broadcast		Placed		
	None	0.5	1.0	0.5	1.0	Mean
	(±0.227)		(±0.321)			(±0.131)
None	4.85	4.53	4.41	4.79	4.47	4.65
	(±0.321)		(±0.455)			(±0.186)
Broadcast						
0.75	4.37	4.92	4.59	3.95	6.37	4.76
1.5	4.95	5.64	6.70	5.27	6.08	5.60
Placed						
0.75	4.67	5.73	7.59	6.07	5.65	5.73
1.5	4.08	5.67	6.95	6.55	6.70	5.67
Mean	4.63 (±0.131)	5.17	5.77 (±0.186)	5.24	5.62	5.18

https://doi.org/10.23637/ERADOC-1-175

55/Cd/2.1

POTATOES

Control of virus spread by insecticides - Little Hoos 1955.

Design: 5 × 5 Latin square.

Area of each plot: 0.0602 acre. Area harvested: 0.0139 acre.

Treatments:
No. of insecticide sprayings: None; 2; 4; 6; 8 times sprayed with D.D.T. emulsion, 2 lb. active ingredient, in 100 gallons per acre.

Infector plants: 6 leaf roll and 6 virus Y infected plants planted in each plot.

Note: The tractor used for spraying was driven over all plots on each occasion always passing over the same rows. Yields were taken from the undamaged rows and an estimate of the loss in yield due to tractor damage was made from an area of 0.0820 acre.

Basal dressing: 13 cwt per acre compound granular fertilizer (7% N, 7% P_2O_5, 10½% K_2O).

Cultivations, etc.: Ploughed: Oct 7, 1954. Machine planted with fertilizer placement: Apr 23, 1955. Earthed up: July 7. Sprayed with sulphuric acid, 15% B.O.V.: Sept 29. Lifted: Oct 7.
Variety: Majestic. Previous crop: Beans.

Sprayings:	2	4	6	8
	June 13	June 13	June 13	June 3
	July 14	July 5	June 23	June 13
		July 27	July 5	June 23
		Aug 10	July 14	July 5
			July 27	July 14
			Aug 10	July 27
				Aug 10
				Aug 26

Standard error per plot:
Total tubers: 0.583 tons per acre or 12.3% (12 d.f.)

Note: Aphid counts were made and tuber samples taken to assess virus spread.

https://doi.org/10.23637/ERADOC-1-175

Summary of Results

	Number of sprayings with D.D.T. None	2	4	6	8	Mean
	Total tubers: tons per acre					
Mean (±0.261)	4.59	4.68	4.72	4.94	4.86	4.76
Increase (±0.369)		+0.09	+0.13	+0.35	+0.27	

Estimated loss in yield in damaged rows due to:-

8 passages of the tractor: 21.5%

Estimated loss in yield in whole crop due to:-

8 passages of the tractor along 4 rows out of 10:. 8.6%

https://doi.org/10.23637/ERADOC-1-175

POTATOES

The control of Blight by Copper Spray - Stackyard 1955.

Design: 5 randomized blocks of 2 plots each, plots being split into 2 for determination of the effect of tractor damage.

Note: There were originally 6 blocks, but the produce from 2 whole plots was accidentally mixed at lifting.

Area of each sub plot: 0.0140 acre.

Treatments:

Whole plots. No spray; Copper fungicide 5 lb in 45 gallons per acre sprayed twice. The tractor used for spraying was driven over all the plots on each occasion.

Sub plots. 4 rows damaged by two passages of the tractor were compared with 4 undamaged rows.

Basal dressing: 20 cwt compound granular fertilizer (7% N, 7% P_2O_5, 10½% K_2O) per acre.

Cultivations, etc.: Ploughed: Oct 14, 1954. Sprayed with T.C.A., 20 lb in 40 gallons: Dec 6 and again Feb 2, 1955. Potatoes planted by machine with placed fertilizer: Apr 23. Earthed up: July 18. Fungicide treatment applied: Aug 4 and again Aug 29. Sprayed with sulphuric acid, 20% B.O.V.: Oct 4. Lifted: Oct 26. Variety: Majestic. Previous crop: Barley.

Standard errors per plot. Total tubers:
Whole plot: 1.09 tons per acre or 16.9% (4 d.f.)
Sub plot: 0.766 tons per acre or 11.8% (8 d.f.)

Note: Blight counts were made.

https://doi.org/10.23637/ERADOC-1-175

Summary of Results

	Spray		
	None	Copper fungicide	Mean
Total tubers: tons per acre			
	(1) and (2)		(±0.242)
Undamaged rows	6.09	6.77	6.43
Damaged rows	6.51	6.52	6.51
Mean (±0.488)	6.30	6.65	6.47

(1) ±0.342 for use in vertical comparisons only.
(2) ±0.545 for use in all others.

Percentage ware (1½" riddle)			
Undamaged rows	76.3	77.1	76.7
Damaged rows	77.8	79.2	78.5
Mean	77.0	78.2	77.6

POTATOES

The control of Blight by Copper and Sulphuric Sprays - Little Knott 1955.

Design: 4 × 4 Latin square, plots being split into 2 for determination of the effect of tractor damage.

Area of each sub plot: 0.0140 acre.

Treatments:

Whole plots: No spray; Copper fungicide 5 lb in 45 gallons per acre sprayed twice; 100 gallons sulphuric acid, 20% B.O.V. sprayed to destroy haulm; Copper fungicide and sulphuric acid sprayed as above. The tractor used for spraying was driven over all the plots on each occasion.

Sub plots: 4 rows damaged by two passages of the tractor were compared with 4 undamaged rows.

Basal dressing per acre: 10 tons dung; 20 cwt compound granular fertilizer (7% N, 7% P_2O_5, 10½% K_2O).

Cultivations, etc.: Ploughed: Sept 29, 1954. Dung applied and cultivated in: Mar 18, 1955. Potatoes planted by machine with placed fertilizer: Apr 27. Earthed up: July 4. Fungicide treatment applied: Aug 18 and Sept 7. Sulphuric acid treatment applied: Sept 13. Lifted: Oct 26. Variety: King Edward. Previous crop: Beans - N. end; Wheat - S. end.

Standard errors per plot: Total tubers.
Whole plot: 0.875 tons per acre or 12.8% (6 d.f.)
Sub plot: 0.291 tons per acre or 4.2% (12 d.f.)

Note: Blight Counts were made.

https://doi.org/10.23637/ERADOC-1-175

Summary of Results

	Spray				
	None	Copper fungicide	Sulphuric acid	Copper fungicide and Sulphuric acid	Mean
Total tubers: tons per acre					
		(±0.449)*			
Undamaged rows	7.73	6.08	7.30	6.81	6.98
Damaged rows	7.53	5.81	6.97	6.66	6.74
Mean (±0.438)	7.63	5.95	7.13	6.74	6.86
Difference (±0.206)	-0.20	-0.27	-0.33	-0.15	-0.24 (±0.103)
Percentage ware (1½" riddle)					
Undamaged rows	78.5	72.5	79.2	73.2	75.9
Damaged rows	78.5	64.4	73.9	73.9	72.7
Mean	78.5	68.5	76.6	73.6	74.3
Difference	0.0	-8.1	-5.3	+0.7	-3.2

*For use in comparisons other than vertical.

https://doi.org/10.23637/ERADOC-1-175

55/Ce/1

LUCERNE

Single and repeated applications of potash - Great Harpenden II 1955 - the first year.

Design: 6 randomized blocks of 8 plots each.

Area of each plot: 0.0147 acre.

Treatments 1955:
Potash seedbed dressings: None (2 plots per block); 0.33; 0.66; 1.0 (2 plots per block); 2.0; 3.0 cwt K_2O per acre applied as muriate of potash.

Note: It is intended to repeat the following dressings annually for two further years: None; 0.33; 0.66; 1.0 (1 plot per block) cwt K_2O per acre.

Basal dressing: 14 cwt per acre ground chalk, 2.3 cwt per acre superphosphate placed beneath seed.

Cultivations, etc.: Ploughed: Oct 12, 1954. Chalk applied: Apr 6, 1955. Potash applied: May 6. Seed drilled at 174 lb. per acre with placed superphosphate: May 9. Cut: Sept 14. Variety: Du Puits. Previous crop: Barley.

Standard error per plot:
Dry Matter: 1.01 cwt per acre or 17.7% (36 d.f.)

Note: The yields have been corrected for a linear fertility trend along the blocks.

Summary of Results

Dry matter: cwt per acre (1 cut)

	K_2O: cwt per acre						
	None	0.33	0.66	1.0	2.0	3.0	Mean
Mean (±0.41)	5.2(1)	5.7	5.8	5.6(1)	6.3	6.1	5.7
Increase (±0.50)		0.5	0.6	0.4(2)	1.1	0.9	

(1) ±0.29
(2) ±0.41

Mean dry matter % as harvested: 36.9

https://doi.org/10.23637/ERADOC-1-175

55/Cf/1

BROCCOLI

Effect of dung and nitrogen on Virus spread - Great Knott I, 1955.

Design: 6 x 6 Latin square.

Area of each plot: 0.0207 acre. Area harvested: 0.0143 acre.

Treatments: All combinations of:-
Dung: None; 20 tons per acre.
Nitrogen: None; 0.6; 1.2 cwt N per acre applied as nitrochalk, half before planting, half in spring.

Basal dressing per acre: 4 tons ground chalk; 4 cwt superphosphate and 2 cwt muriate of potash.

Cultivations, etc.: Ploughed: Sept 30, 1953 and again Dec 7. Chalk applied: Feb 24, 1954. Ploughed: Feb 28. Dung applied, ploughed: June 4. Basal fertilizers applied: June 19. 1st application of nitrochalk: July 12. Planted: July 16. Gaps replanted: July 27, Aug 6, Aug 13, Aug 27, Aug 31. 2nd application of nitrochalk: Mar 17, 1955. Harvested: Apr 26 to May 5. Variety: Continuity. Previous crop: Wheat.

Note: The replanted broccoli failed.

Standard error per plot,
No. of saleable curds: 0.543 thousands per acre or 20.9% (20 d.f.)

Summary of Results

Dung: tons per acre	N: cwt per acre None	0.6	1.2	Mean
Number of saleable curds: thousands per acre (±0.222)				
None	2.66	2.69	2.44	2.60
20	2.11	3.01	2.69	2.61
Mean (±0.157)	2.39	2.85	2.57	2.60
Difference (±0.314)	-0.55	+0.32	+0.25	+0.01 (±0.181)
Weight per saleable curd: lb				
None	1.28	1.27	1.45	1.33
20	1.44	1.42	1.56	1.48
Mean	1.36	1.35	1.50	1.40
Difference	+0.16	+0.15	+0.11	+0.15

General means: Total no. of curds: 4.57 thousands per acre
Percentage saleable curds out of total no. of curds: 56.6

Records of incidence of cauliflower mosaic were made.

https://doi.org/10.23637/ERADOC-1-175

55/Cg/1

KALE

Placement of nitrogen, phosphate and potash - Great Harpenden II 1955.

Design: 4 randomized blocks of 10 plots each.

Area of each plot: 0.00909 acre. Area harvested: 0.00727 acre.

Treatments: None (2 plots per block) and all combinations of
Fertilizer: P; K; PK; NPK.
Method of application: Broadcast in seed bed; Drilled in band 2" to side of seed and 3" below soil surface

where N = 0.4 cwt N per acre as sulphate of ammonia.
P = 0.6 cwt P_2O_5 per acre as superphosphate.
K = 1.0 cwt K_2O per acre as sulphate of potash.

In addition top dressings were applied:-

To "NPK" plots: 0.4 cwt N per acre as sulphate of ammonia.
To all other plots: 0.8 cwt N per acre as sulphate of ammonia.

Basal dressing: 7 cwt ground chalk per acre.

Cultivations, etc.: Ploughed: Oct 12, 1954. Ground chalk applied: Apr 6, 1955. Broadcast fertilizers applied: Apr 20. Seed drilled at 4 lb per acre with sideband fertilizer: Apr 21. Top dressing applied: July 5. Cut: 2 blocks, Nov 29; remainder, Dec 6.
Variety: Marrow-stem. Previous crop: Barley.

Standard error per plot:
Yield: 1.55 tons per acre or 13.2% (28 d.f.)

Summary of Results

Yield: tons per acre

N Top dressing: cwt per acre / Treatments at sowing	0.8				0.4	
	None	P	K	PK	NPK	Mean
Method of application			(±0.774)			
Broadcast		12.15	12.14	10.93	11.36	11.64
Drilled		12.11	11.49	12.77	11.82	12.05
Mean (±0.547)	11.13	12.13	11.82	11.85	11.59	11.70
Difference (±1.094)		-0.04	-0.65	+1.84	+0.46	+0.41 (±0.547)

https://doi.org/10.23637/ERADOC-1-175