ROTHAMSTED RESEARCH

Yields of the Field Experiments 1948

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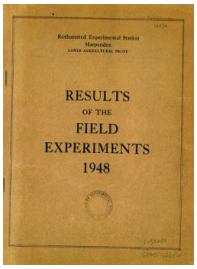

Short-term

Rothamsted Research

Rothamsted Research (1949) *Short-term ;* Yields Of The Field Experiments 1948, pp 58 - 95

48/Ca/1.1

WHEAT

Control of "Eyespot"

The effects of sulphate of ammonia, of rate and depth of sowing and of spraying, on the sixth successive Wheat crop.

RW - Little Knott 1948

System of replication: 3 x 3 x 3 design in 6 blocks of 9 plots each, certain three-factor interactions and the effect of spraying being confounded with block differences.

Area of each plot 0.0151 acre.

Treatments:
Sulphate of ammonia: None. 0.4, 0.8 cwt N per acre applied as a top-dressing in March (N_0 N_1 N_2).
Depth of sowing: Shallow ($\frac{1}{2}$"), normal ($1\frac{1}{2}$"), deep (3") (D_0 D_1 D_2).
Rate of sowing: $1\frac{1}{2}$, $2\frac{1}{2}$ or $3\frac{1}{2}$ bushels per acre (R_0 R_1 R_2).
Spraying: 3 Blocks sprayed with sulphuric acid ($12\frac{1}{2}$% by volume B.O.V. at 100 gallons per acre) before germination and again in spring.

Basal Manuring: 3 cwt per acre superphosphate and 1 cwt per acre muriate of potash drilled across the plots.

Cultivations etc:
Ploughed: Sept 8 - 13. Basal Manures applied: Oct 8. Cultivated: Oct 17. Ring-rolled: Oct 18. Springtined, rolled and springtined and ring-rolled: Oct 21. Seed drilled: Oct 22. Harrowed in: Oct 23. Sprayed with B.O.V.: Nov 1 and again Mar 8. Sulphate of Ammonia applied: Mar 15. Ring-rolled: Apr 28. Sprayed against weeds: May 14. Hand pulled rye: May 21. Hand pulled wild oats and other weeds: June 15 - 16. Hand pulled wild oats: various days: June 20 - 30. Harvested: Aug 21. Variety: Squarcheads Master ($13/4$). Previous crop: Wheat.

Standard errors per plot:

Grain:	2.02 cwt per acre or 10.4%	(24 d.f.)
Straw:	5.19 cwt per acre or 7.9%	(24 d.f.)
% Eyespot, (transformed values).		
	Sprayed blocks 2.57	6 d.f.
	Unsprayed 6.48	6 d.f.
% Take All (transformed values)	8.68	24 d.f.

Note: The analysis of diseased wheat has been carried out on percentages transformed to degrees and all tests of significance should be applied to the transformed values.

Grain: cwt per acre (± 1.17 Means ± 0.67) 48/Ca/1.2

	Unsprayed				Sprayed				Effect of Spraying (± 0.95)(1)
	R_0	R_1	R_2	Mean	R_0	R_1	R_2	Mean	
D_0	15.0	17.8	16.0	16.3	25.8	22.9	23.4	24.0	7.7
D_1	16.4	15.6	13.5	15.2	23.5	21.2	22.6	22.4	7.2
D_2	17.2	17.2	12.9	15.8	24.9	22.8	20.9	20.9	7.1
	N_0	N_1	N_2		N_0	N_1	N_2		
D_0	17.0	14.2	17.7		20.4	25.6	26.1		
D_1	14.4	15.8	15.4		17.0	23.7	26.7		
D_2	15.2	15.7	16.5		15.7	25.1	27.9		
R_0	17.7	13.6	17.3	16.2	18.9	26.2	29.1	24.7	8.5
R_1	17.0	16.1	17.6	16.9	19.1	23.5	24.3	22.3	5.4
R_2	11.7	16.1	14.7	14.2	15.0	24.7	27.2	22.3	8.1
Mean	15.5	15.2	16.5	15.8	17.7	24.8	26.9	23.1	
Effect of spraying	(± 0.95)(1)				2.2	9.6	10.4		

Straw: cwt per acre (± 3.13 Means ± 1.81)

	Unsprayed				Sprayed				Effect of Spraying (± 2.45)(1)
	R_0	R_1	R_2	Mean	R_0	R_1	R_2	Mean	
D_0	55.3	62.6	55.4	57.7	81.1	74.9	78.2	78.1	20.4
D_1	59.3	58.3	52.1	56.6	75.0	69.9	72.7	72.5	15.9
D_2	56.5	63.7	48.6	56.3	76.2	72.2	70.0	72.8	16.5
	N_0	N_1	N_2		N_0	N_1	N_2		
D_0	55.4	54.6	63.3		71.0	80.3	83.0		
D_1	49.4	56.8	63.5		57.8	74.5	85.3		
D_2	51.9	55.8	61.1		54.5	78.5	85.4		
R_0	56.7	51.7	62.7	57.0	64.3	79.2	88.8	77.4	20.4
R_1	57.0	59.3	68.3	61.5	61.1	76.2	79.7	72.3	10.8
R_2	42.9	56.2	56.9	52.0	57.9	77.9	85.1	73.6	21.6
Mean	52.2	55.7	62.6	56.9	61.1	77.8	84.5	74.5	
Effect of spraying		(± 2.45)(1)			8.9	22.1	21.9		

(1) Standard error for comparison between main effects only.

Percentage Straws showing Severe Eyespot at Harvest 46/Oa/1.5

(means from transformed values)

	Unsprayed				Sprayed				Effect of Spraying
	R_0	R_1	R_2	Mean	R_0	R_1	R_2	Mean	
D_0	51.6	57.5	42.5	50.5	10.3	15.0	9.7	11.4	-39.1
D_1	62.3	38.6	66.5	56.0	11.4	12.1	11.3	11.7	-44.3
D_2	35.3	58.0	52.2	48.4	10.9	15.0	9.1	12.2	-36.2
	N_0	N_1	N_2		N_0	N_1	N_2		
D_0	37.2	62.8	51.8		12.3	12.8	9.7		
D_1	35.7	58.8	72.3		6.4	13.3	16.2		
D_2	37.5	55.4	52.8		10.3	16.1	10.7		
R_0	41.3	56.0	51.8	49.7	9.1	13.8	11.8	11.4	-38.3
R_1	36.8	52.8	64.3	51.4	14.4	14.8	13.0	14.0	-37.4
R_2	32.3	68.0	61.0	53.8	5.8	13.7	11.4	10.1	-43.7
Mean	36.8	59.0	59.0	51.6	9.4	14.0	12.1	11.8	
Effect of Spraying					-27.4	-45.0	-46.9		

(Transformed values)

	Unsprayed (± 3.74 Means ± 2.16)				Sprayed (± 1.48 Means ± 0.86)				Effect of Spraying (± 2.32)(1)
	R_0	R_1	R_2	Mean	R_0	R_1	R_2	Mean	
D_0	45.9	49.3	40.7	45.3	18.7	22.8	18.1	19.8	-25.5
D_1	52.1	38.4	54.6	48.4	19.8	20.4	19.7	20.0	-28.4
D_2	36.5	49.6	46.2	44.1	21.0	22.8	17.6	20.5	-23.6
	N_0	N_1	N_2		N_0	N_1	N_2		
D_0	37.6	52.4	46.0		20.5	20.9	18.1		
D_1	36.7	50.1	58.3		14.6	21.4	23.8		
D_2	37.8	48.1	46.5		18.7	23.7	19.1		
R_0	40.0	48.4	46.0	44.8	17.6	21.8	20.1	19.8	-25.0
R_1	37.4	46.6	53.3	45.8	22.3	22.6	21.1	22.0	-23.8
R_2	34.6	55.6	51.4	47.2	13.9	21.7	19.8	18.5	-28.7
Mean	37.4	50.2	50.2	45.9	17.9	22.0	20.4	20.1	
Effect of Spraying		(± 2.32)(1)			-19.5	-28.2	-29.8		

(1) Standard error for comparison between main effects only.

Percentage Straws showing "take-all" at Harvest 48/Ca/1.4

(means from transformed values)

	Unsprayed				Sprayed				Effect of Spraying
	R_0	R_1	R_2	Mean	R_0	R_1	R_2	Mean	
D_0	17.9	23.3	19.8	20.3	28.9	28.1	27.0	28.0	7.7
D_1	6.6	23.3	30.8	19.0	29.8	18.7	36.3	28.0	9.0
D_2	14.5	20.6	16.6	17.1	20.6	34.7	41.3	32.0	14.9
	N_0	N_1	N_2		N_0	N_1	N_2		
D_0	35.5	17.1	10.8		37.5	26.5	20.6		
D_1	37.3	9.0	14.4		50.2	19.1	17.6		
D_2	39.2	15.0	4.4		42.2	37.7	17.4		
R_0	23.2	20.4	1.3	12.5	41.2	24.0	15.8	26.3	13.8
R_1	34.2	17.0	17.4	22.4	30.2	27.2	23.5	26.8	4.4
R_2	55.8	5.5	14.4	22.0	59.0	31.5	16.6	34.7	12.7
Mean	37.3	13.6	9.3	18.9	43.2	27.5	18.6	29.2	
Effect of Spraying					5.9	13.9	9.3		

(Transformed values)

($\pm$ 5.01 Means $\pm$ 2.89)

	Unsprayed				Sprayed				Effect of Spraying ($\pm$ 4.09)(1)
	R_0	R_1	R_2	Mean	R_0	R_1	R_2	Mean	
D_0	25.0	28.9	26.4	26.3	32.5	32.0	31.3	31.9	5.1
D_1	14.9	28.9	33.7	25.8	33.1	25.6	37.1	31.9	6.1
D_2	22.4	27.0	24.1	24.5	27.0	36.1	40.0	34.4	9.9
	N_0	N_1	N_2		N_0	N_1	N_2		
D_0	36.6	24.5	19.2		37.8	31.0	27.0		
D_1	37.7	17.5	22.3		45.1	25.9	24.8		
D_2	38.7	22.8	12.0		40.5	37.9	24.7		
R_0	28.8	26.9	6.5	20.7	39.9	29.3	23.4	30.9	10.2
R_1	35.8	24.4	24.7	28.3	33.3	31.4	29.0	31.2	2.9
R_2	48.3	13.5	22.3	28.0	50.2	34.1	24.1	36.1	8.1
Mean	37.7	21.6	17.8	25.7	41.1	31.6	25.5	32.7	
Effect of Spraying		($\pm$ 4.09)(1)			3.4	10.0	7.7		

(1) Standard error for comparison between main effects only.

WHEAT

Residual effects of various dungs, of additional straw to dungs, of rotted bracken and of straw with sulphate of ammonia added.

RW – Great Harpenden II 1948

System of replication: The design was intended to be a 5 x 5 lattice square in 3 replicates, but owing to the interchange of a pair of treatments in two of the three blocks, the lattice design was not attained, and it was impracticable to treat the experiment as other than 3 randomized blocks of 25 plots.

Area of each plot: 0.0171 acre.

Treatments: Applied in 1947 to potatoes.
Of the 25 plots in each replicate, 3 received no organic manures, and the remaining 22 were treated with the following organic manures, applied at two rates: rotted bracken (B) straw with sulphate of ammonia added (A), and nine dungs:- from boxes:- stored (2 months) made with normal and heavy litter (W and X); from straw bale yards:- fresh, made with normal and heavy litter (Y and Z), stored (12 months), made with normal and heavy litter (R and S) and fresh (low ration and low ration plus sulphate of ammonia to straw) (T and V); from sunken yards:- stored (12 months) commercial dung (L).

Rates of application: The commercial dung (L) and rotted bracken (B) at 8 and 16 tons per acre, the straw with sulphate of ammonia (A) at 2 and 4 tons of chaffed straw per acre plus 0.3 and 0.6 N per acre as sulphate of ammonia, the stored normal dung from boxes (W) at the equivalent of 8 and 16 tons per acre weighed before storing, dung X, Y, Z , R and S, at weights produced by the same quantity of feeding stuffs as 8 and 16 tons of fresh normal dung from bullock boxes, and dungs T and V at the same rates as Z.

Actual rates of application
Tons per acre

Dungs		Level 1	Level 2	Litter straw lbs/head/day
	W	5.37	10.74	9.0
	X	4.79	9.58	18.0
	Y	8.66	17.32	9.2
	Z	10.78	21.55	17.1
	R	6.79	13.57	9.8
	S	7.76	15.51	19.7
	TV	10.78	21.55	16.1

Basal Manuring: 2 cwt. Sulphate of Ammonia per acre

Cultivations etc: Ploughed: Oct. 31 – Nov. 4. Rolled and springtine harrowed: Nov. 4 and again Nov. 5. Seed drilled: Nov. 6. Harrowed in: Nov. 7. Ring rolled: Apr. 23. Sulphate of ammonia drilled: early May. Cut and shocked: Aug. 10–12. Reset shocks: Aug. 18. Raked and carted in: Aug. 19–20. Threshed Sept. 6–10. Variety: Bersee. Previous crop: Potatoes.

Standard error per plot: Grain 2.52 cwt. per acre or 5.75% (50d.f.)

Organic Manure	Grain: cwt. per acre Level of organic 1	2	Mean	Straw: cwt. per acre Level of organic 1	2	Mean
	(±1.45)		(±1.03)			
None			41.9(1)			54.1
Stored (bullock boxes) normal litter	42.5	45.2	43.9	55.9	61.1	58.5
Stored (bullock boxes) heavy litter	41.4	44.9	43.2	55.9	58.1	57.0
Fresh (straw bale yards) normal litter	42.4	42.6	42.5	54.2	56.7	55.5
Fresh (straw bale yards) heavy litter	43.7	46.9	45.3	56.8	65.3	61.1
Stored (straw bale yards) normal litter	42.8	45.2	44.0	54.7	56.3	55.5
Stored (straw bale yards) heavy litter	42.6	44.1	43.3	54.8	56.3	55.5
Fresh (straw bale yards low feeding)	41.6	43.6	42.6	54.0	58.4	56.2
As above with Sulphate of Ammonia	44.9	44.6	44.7	57.0	59.0	58.0
Stored (Sunken yard)	45.3	44.8	45.1	61.9	59.0	60.5
Rotted Bracken	41.9	44.4	43.1	56.5	54.1	55.3
Straw with Sulphate of Ammonia	44.4	49.1	46.8	58.0	67.5	62.7
Mean	43.0	45.0	43.8	56.3	59.3	57.4

Standard error (1): ± 0.84

48/Ca/2.3

WHEAT

Wireworm Experiment (1)

The effect of various insecticides, and their methods of application.

RW - Little Hoos 1948

System of replication: 3 randomized blocks of 9 plots each

Area of each plot: 0.0289 acre

Treatments:
None
D.D. injected 400 lbs per acre.
Ethylene Dibromide 4% solution injected 15 gallons per acre.
D.D.T. dust combine drilled $\frac{5}{4}$ cwt per acre.
Gammexane; broadcast 2 cwt per acre, combine drilled $\frac{3}{4}$ cwt per acre, or applied as seed dressing.

Basal manuring: $2\frac{3}{4}$ cwt per acre sulphate of ammonia.

Cultivations etc.: Ploughed: Sept 16-27. Harrowed and rolled: Oct 7. DD and Ethylene Dibromide injected: Oct 10. Seed drilled, and remaining treatments applied: Oct 29-30. Harrowed in: Oct 30. Harrowed: Mar 30. Ring rolled: Apr 1. Sulphate of ammonia drilled: May 5. Hand weeded: June 5, 7-8, 22-23, and various days June 28 - July 23. Harvested: Aug 17. Variety: Bersee. Previous crop: Linseed.

Standard errors per plot:
Grain, 2.62 cwt per acre or 12.6% (18 d.f.)
Straw, 6.37 cwt per acre or 13.5% (18 d.f.)

	Untreated	DD Injected	Ethylene Dibromide Injected	DDT Dust Drilled	Gammexane Broadcast	Gammexane Drilled	Treated seed	Mean
				Grain: cwt. per acre				
Mean Yield (±1.51)	8.9(1)	28.3	32.1	20.7	30.6	24.8	24.0	20.8
Increase (±1.74)		19.4	23.2	11.8	21.7	15.9	15.1	
				Straw: cwt. per acre				
Mean Yield (±3.68)	22.8(2)	64.1	71.6	46.0	65.9	54.2	54.6	47.2
Increase (±4.25)		41.3	48.8	23.2	43.1	31.4	31.8	

Standard errors (1) ±0.87
(2) ±2.12

48/Ca/4.1

WHEAT

Wireworm Experiment (2)

The effect of treatment of seed with gammexane and of three strengths of gammexane dust.

RW - Little Hoos 1948

System of replication: 3 replicates of 3 incomplete randomized blocks of 3 plots each.

Area of each plot: 0.0289 acre

Treatments:
None.
Seed treated with gammexane dressing.
Gammexane dust, $\frac{1}{4}$, $\frac{1}{2}$ and 1 cwt per acre; combine drilled with seed (filler added where necessary to make total dressing of 1 cwt per acre)

Basal Manuring: $2\frac{3}{4}$ cwt per acre sulphate of ammonia.

Cultivations etc:
Ploughed: Sept 16-27. Harrowed and rolled: Oct 7. Seed and gammexane dust drilled: Oct 29-30. Harrowed in: Oct 30. Harrowed: Mar 30. Ring rolled: Apr 1. Sulphate of ammonia drilled: May 5. Hand weeded: June 5, 7-8, 22-23, and various days June 28-July 23. Harvested: Aug 17.
Variety: Bersee. Previous crop: Linseed.

Standard errors per plot:

Grain:	Block error,	1.61 cwt per acre	or 7.15% (4d.f.)
	Plot error,	2.28 cwt per acre	or10.1% (16d.f)
Straw:	Block error,	2.29 cwt per acre	or 4.63% (4d.f.)
	Plot error,	4.88 cwt per acre	or 9.86% (16d.f.)

48/Ca/4.2

Mean Yields

	Untreated (o)	Treated Seed (S)	Gammexane Dust (D)		
			¼ cwt/acre (D_1)	½ cwt/acre (D_2)	1 cwt/acre (D_3)
Grain: cwt/acre	13.6	26.3	28.4	27.7	27.1
		56.2	60.2	59.6	58.0
Straw: cwt/acre	32.8			27.5	
				60.4	

Standard errors			
O v S v D	D_1 v D_2 v D_3	O,S v D_1,D_2,D_3	
±0.76	±1.42	±1.12	
±1.63	±2.65	±2.23	

48/Ca/5.1

SPRING WHEAT

The effects of inoculation and wetting of seed, and of sulphate of ammonia.

RW – Long Hoos 1948

System of replication: 3 randomized blocks of 6 plots each.

Area of each plot: 0.0158 acre.

Treatments:
Seed: untreated, inoculated by wet method, wetted but not inoculated.
Sulphate of ammonia: None, 0.3 cwt. N per acre.

Note: The inoculum was a bacterial culture of French origin.

Basal manuring: 3 cwt. Superphosphate and 1 cwt. muriate of potash per acre.

Cultivations, etc.: Ploughed: Sept.30 – Oct.2. Rolled and springtine harrowed: Mar.10. Sulphate of ammonia applied and basal manuring broadcast by machine: Mar.12. Harrowed and seed drilled: Mar.13. Harrowed in: Mar.15. Rolled: Mar.20. Weeds hand pulled: June 8. Harvested: Aug.24.
Variety: Bersee.

Standard errors per plot (10 d.f.): Grain, 3.35 cwt.per acre or 17.1%
Straw, 3.00 cwt.per acre or 7.20%

	Seed Untreated	Seed inoculated (wet method)	Seed wetted not inoculated	Mean
Grain: cwt. per acre				
Mean (±1.37)	19.8	18.5	20.5	19.6
Sulphate of Ammonia:				
Absent	16.5	17.2	17.8	17.2
Present (±1.93)	23.2	19.8	23.1	22.0
Response (±2.74)	6.7	2.6	5.3	4.8 (±1.58)
Straw: cwt. per acre				
Mean (±1.22)	41.3	41.3	42.3	41.6
Sulphate of Ammonia:				
Absent	38.4	38.6	38.7	38.6
Present (±1.73)	44.2	44.1	45.8	44.7
Response (±2.45)	5.8	5.5	7.1	6.1 (±1.41)

48/Oa/6.1

SPRING WHEAT VARIETY TRIAL

The comparison of eight varieties of spring wheat, and the effect on them of three levels of sulphate of ammonia.

RW – Little Knott 1948.

System of replication: 2 randomized blocks of 8 plots, plots split into 3 for the application of sulphate of ammonia.

Area of each sub-plot: 0.022 acre.

Treatments.
Whole plots: Varieties: Atle, Meteor, Fylgia, Extra Kolben II Bersee, Vilmorin 27, April Bearded, Vilmorin 29
Sub-plots: Sulphate of ammonia; none, 0.4, 0.8 cwt N per acre.

Basal dressing: None.

Cultivations, etc.: Ploughed: various days Dec. to Jan. Springtine harrowed: Mar.4, and again Mar.11. Tooth harrowed: Mar.15 and again Mar.16. Sulphate of Ammonia applied: Mar.16. Seed drilled: Mar.18. Harrowed in: Mar.19. Rolled: Mar.23. Sprayed against weeds: May 19. Weeds pulled: June 7. Wild oats pulled: June 20-30. Harvested North block except Vilmorins by binder: Sept 7. Harvested Vilmorins North block: Sept.22. Harvested South block by combine: Sept.27. Previous crop: Kale

Standard Errors per plot: Grain
Whole plot: 1.99 cwt. per acre or 7.53%
Sub-plot: 1.88 cwt. per acre or 7.14%

Grain: cwt. per acre

Sulphate of ammonia	Atle	Meteor	Fylgia	Kolben II	Bersee	Vilmorin 27	April Bearded	Vilmorin 29	Mean
									(±0.47)
None	30.6	24.3	21.6	27.0	29.2	24.5	23.4	24.5	25.6
0.4 cwt. N per acre	31.4	25.2	24.6	27.7	30.0	24.0	23.5	25.9	26.5
0.8 cwt. N per acre	31.5	24.8	25.5	25.5	33.4	28.2	24.2	23.3	27.0
Mean	31.2	24.8	23.9	26.7 (±1.41)	30.8	25.6	23.7	24.5	26.4

Standard errors for body of table: ±1.33 for vertical comparisons only
±1.78 for all other comparisons

Straw: cwt. per acre*

Sulphate of ammonia	Atle	Meteor	Fylgia	Kolben II	Bersee	Vilmorin 27	April Bearded	Vilmorin 29	Mean
None	51.5	54.1	55.3	52.8	43.8	80.0	64.1	83.5	60.6
0.4 cwt. N per acre	55.6	53.4	52.5	56.8	53.5	72.2	61.0	83.8	61.1
0.8 cwt. N per acre	58.2	54.9	54.3	58.4	59.3	81.8	64.9	79.6	63.9
Mean	55.1	54.1	54.1	56.0	52.2	78.0	63.3	82.3	61.9

* 1 Block (North) only

48/Ca/6.2

48/Cb/1.1

SPRING SOWN CEREAL EXPERIMENT

Comparison of barley, oats and two varieties of wheat, and of the effects on them of four levels of sulphate of ammonia, of superphosphate, and of muriate of potash.

RV – Long Hoos III, 1948

System of replication: 4 randomized blocks of four plots each, each plot being split into 4, certain first-order interactions of artificials being confounded with whole plots.

Area of each sub-plot: 0.0191 acre.

Treatments:
Whole plots: Crops:- Oats (S.84), wheat (Atle and Bersee) and barley (Plumage Arthur)
Sub-plots: Sulphate of ammonia: None, 0.3, 0.6, 0.9, cwt N per acre
Superphosphate: None, 0.6 cwt. P_2O_5 per acre
Muriate of potash: None 0.6 cwt. K_2O per acre

Basal manuring: None.

Cultivations, etc.: Ploughed Sept.30 – Oct.2. Rolled and Springtine harrowed: Mar.10. Artificials applied: Mar.13. Harrowed: Mar.15. All seed drilled and harrowed in: Mar.17. Rolled: Mar.20. Hand weeded: June 7-8. All crops harvested: Aug. 23-24. Previous crop: Barley.

Standard errors: (grain):
per whole plot, 1.49 cwt. per acre or 6.9% (6.d.f.)
per sub-plot, 2.82 cwt. per acre or 13.0% (24 d.f.)

	Grain: cwt. per acre				Straw: cwt. per acre			
	Oats	Wheat (Atle)	Wheat (Bersee)	Barley	Oats	Wheat (Atle)	Wheat (Bersee)	Barley
			(±0.75)					
Mean	19.0	21.6	19.1	26.9	46.1	46.0	43.8	36.4
			(a) and (b)					
Sulphate of ammonia								
None	14.6	18.2	13.4	22.5	44.2	37.4	33.5	27.4
0.3 cwt. N per acre	19.6	20.8	20.0	27.3	48.6	44.0	41.2	35.2
0.6 cwt. N per acre	20.9	23.4	20.8	29.3	47.3	50.3	50.6	40.6
0.9 cwt. N per acre	20.9	24.1	22.2	28.6	44.4	52.5	49.9	42.6
			(±1.03)*					
Superphosphate								
Absent	18.3	22.3	19.1	26.2	46.5	46.1	42.9	35.7
Present	19.7	20.9	19.1	27.7	45.8	46.0	44.7	37.1
			(±1.41)					
Response	1.4	-1.4	0.0	1.5	-0.7	-0.1	1.8	1.4
			(±1.03)*					
Muriate of Potash								
Absent	19.5	21.8	17.8	25.9	46.7	45.2	43.9	35.8
Present	18.5	21.4	20.4	28.0	45.6	46.9	43.7	37.1
			(±1.41)					
Response	-1.0	-0.4	2.6	2.1	-1.1	1.7	-0.2	1.3

Standard errors: (a) ± 1.41 (for vertical comparisons only)
(b) ± 1.43 (for all other comparisons)

* Standard error for use in horizontal comparisons only

48/Cb/1.2

BEANS

The comparison of four varieties of beans and the effects on them of two methods of placement, two rates and two times of sowing.

RE - Great Field I 1948

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

Area of each plot: 0.0286 acre.

Treatments:
- Varieties: Giant, Essex, Lincs and Wilts.
- Methods of placement: Seed broadcast before ploughing, dropped in furrow during ploughing.
- Rate of sowing: 2 cwt, 3 cwt seed per acre.
- Time of sowing: Early, Oct 28th. Late, Nov 18th.

Basal dressings: Dung: 10 tons per acre
Superphosphate 2 cwt per acre drilled across the plots
Muriate of potash: 2 cwt per acre
Nitrochalk: 2 cwt per acre.

Cultivations etc: Superphosphate and Muriate of Potash applied: Oct 20. Dung applied, ploughed in, beans placed in furrows, 1st sowing "Early": Oct 27-29. Tractor rolled and disced each way after ploughing: Oct 29. Chalk 45 cwt per acre applied: Nov 6. Dung spread, ploughed in beans placed in furrows, 2nd sowing "Late": Nov 17-18. Harrowed "Early" plots: Mar 16. Ring rolled all plots: Mar 30. Harrowed late plots: Mar 31. Nitrochalk applied: May 4. Harvested: Aug 25. Previous crop: Linseed.

Standard errors per plot :
- Grain: 2.62 cwt per acre or 10.7% (11 d.f.)
- Straw: 4.40 cwt per acre or 11.2% (11 d.f.)

Grain: cwt per acre

		Giant	Essex	Lincoln -shire	Wilts	Mean
(±0.92)	Mean	23.8	26.5	24.4	23.2	24.5
(±1.31)	Broadcast	23.2	25.3	24.4	24.1	24.3
	Ploughed In	24.3	27.7	24.3	22.3	24.6(±0.65)
(±1.85)	Ploughed In -Broadcast	1.1	2.4	-0.1	-1.8	0.3(±0.92)
	Seed rate per acre					
(±1.31)	2 cwt	21.5	24.1	22.8	22.1	22.6(±0.65)
	3 cwt	26.1	28.9	26.0	24.3	26.3
(±1.85)	3 cwt - 2 cwt	4.6	4.8	3.2	2.2	3.7(±0.92)
(±1.85)*	Early-Late Sowing	4.1	8.0	7.2	6.0	

		Seed rate per acre 2 cwt	3 cwt	Difference	Early-Late Sowing
(±0.92)	Broadcast	22.4	26.1	3.7 (1)	7.1
	Ploughed in	22.8	26.5	3.7	5.5
(±1.31)	Difference	0.4	0.4	0.0(2)	-1.6(2)
	Early-Late Sowing	7.3	5.3	-2.0(2)	

Standard errors (1) ±1.31

(2) ±1.85

* Standard error for comparison between main effects only

Straw: cwt per acre

		Giant	Essex	Lincoln -shire	Wilts	Mean
(±1.56)	Mean	39.6	38.5	38.7	40.3	39.3
(±2.20)	Broadcast	39.3	36.8	39.8	40.2	39.0 (±1.10)
	Ploughed In	39.9	40.3	37.7	40.4	39.6
(±3.11)	Ploughed In -Broadcast	0.6	3.5	-2.1	0.2	0.6 (±1.56)
	Seed rate per acre					
(±2.20)	2 cwt	36.4	34.9	36.9	37.3	36.4 (±1.10)
	3 cwt	42.8	42.1	40.6	43.3	42.2
(±3.11)	3 cwt - 2 cwt	6.4	7.2	3.7	6.0	5.8 (±1.56)
(±3.11)*	Early-Late Sowing	7.5	8.2	9.2	11.6	

		Seed rate per acre 2 cwt	3 cwt	Difference	Early-Late Sowing
(±1.56)	Broadcast	36.7	41.3	4.6(1)	10.8
	Ploughed In	36.0	43.1	7.1	7.4
(±2.20)	Ploughed In -Broadcast	-0.7	1.8	2.5(2)	-3.4(2)
	Early-Late Sowing	8.9	9.3	0.4(2)	

Standard Errors (1) (±2.20)

(2) (±3.11)

* Standard error for comparison between main effects only

48/Cd/1.1

POTATOES.

Effects of various dungs, of additional straw to dung, of rotted bracken, and of sulphate of ammonia and muriate of potash.

RP - Sawyers II, 1948

System of replication: 5 x 5 lattice square in 3 replicates, plots split into two for application of nitrogen and potash, the interaction of these being confounded with whole plots.

Area of each sub-plot 0.0126 acre.

Treatments:
Of the 25 whole plots in each replicate, 3 received no organic manures, and the remaining 22 were treated with the following organic manures, applied at two rates: rotted bracken (B) and ten dungs: from bullock boxes:- fresh, made with normal and heavy litter (W and X), and stored (12 months under cover) made with normal and heavy litter (R and S): from straw bale yards:- fresh made with normal and heavy litter (Y and Z), stored (12 months in open) made with normal and heavy litter (A and K) and stored (12 months in open) low ration, and low ration plus sulphate of ammonia to straw (T and V).

Rates of application: The rotted bracken (B) and the fresh normal dung from boxes (W) at 8 and 16 tons per acre, dungs X, Y, Z, R, S, A and K at weights produced by the same quantity of feeding stuffs as 8 and 16 tons of fresh normal dung from boxes, and dungs T and V at the same rates as Z.

		Actual rates of application Tons per acre Level 1	Level 2	Litter Straw lbs/head/day
Dungs	W	8.00	16.00	10.6
	X	6.90	13.81	20.3
	Y	8.74	17.49	10.4
	Z	8.21	16.42	20.9
	R	2.65	5.31	9.1
	S	2.74	5.49	18.3
	A	3.04	6.09	9.3
	K	3.66	7.33	17.3
	T and V	3.66	7.33	16.2

Sulphate of ammonia: None, 0.6 cwt N per acre
Muriate of potash: None, 1.0 cwt K_2O per acre

Basal Manuring: 3.75 cwt. Superphosphate per acre

Cultivations, etc: Ploughed: during Jan. Cultivated: Mar.16 Harrowed: Mar. 25. Ridged: Apr.23-24. Superphosphate drilled, sulphate of ammonia and muriate of potash applied Apr.26. Organics applied: Apr.29-30. Potatoes planted and covered in: Apr. 30-May 1. Rolled down ridges: May 6 Harrowed: May 25. Grubbed: June 15. Weeded and earthed up: July 2-3. Sprayed with "Perinox": Aug.10. Sprayed to kill off haulm: Sept.15. Lifted: Oct.1-4. Variety: Majestic (Scotch A). Previous crop: Barley.

Standard errors per plot:

Total tubers, per whole plot, 0.661 tons per acre or 5.28% (24 d.f.).
per sub-plot, 0.983 tons per acre or 7.84% (29 d.f.).

Total tubers: tons per acre

Level	Mean Yield 1	Mean Yield 2	Response to N 1	Response to N 2	Response to K 1	Response to K 2	Averaging over two levels of organic: Mean Yield	Response to N	Response to K
Organic Manure	(±0.438)		(±0.851)				(±0.310)	(±0.602)	
	10.44 (1)		−0.21 (2)		3.81 (2)		10.44 (1)	−0.21 (2)	3.81 (2)
None									
Dung: Fresh (boxes) normal litter	12.16	12.85	1.40	0.04	−0.08	1.73	12.51	0.72	0.82
Fresh (boxes) heavy litter	12.44	13.05	2.50	1.42	1.66	0.96	12.75	1.96	1.31
Fresh (yards) normal litter	12.03	12.55	1.14	−0.02	0.35	−0.56	12.29	0.56	−0.11
Fresh (yards) heavy litter	11.94	12.50	0.66	0.65	−0.31	−0.08	12.22	0.65	−0.20
Stored (boxes) normal litter	12.99	13.43	2.18	1.52	0.71	−0.44	13.21	1.85	0.14
Stored (boxes) heavy litter	13.08	13.50	1.58	0.34	1.02	−0.60	13.29	0.96	0.21
Stored (yards) normal litter	12.06	12.81	2.01	1.07	1.69	0.46	12.44	1.54	1.07
Stored (yards) heavy litter	13.41	13.25	1.29	0.75	0.99	0.52	13.33	1.02	0.76
Stored (yards) low feeding	13.84	13.51	3.08	0.27	1.10	0.20	13.18	1.68	0.65
As above with Sulphate of Ammonia	12.39	13.15	1.84	1.71	1.06	0.11	12.77	1.77	0.59
Rotted bracken	13.17	12.81	0.84	−0.09	0.12	0.31	12.99	0.37	0.22

Standard errors (1) ±0.253 (2) ±0.466

48/Oa/1.3

POTATOES

Effects of intensive intertillage, of earthing up, of mulching with straw, of applying artificials before and after ridging, and of spraying haulm before lifting.

RP - Sawyers II, 1948

System of replication: 4 randomized blocks of 10 plots each.

Area of each plot (after rejecting edge rows): 0.0098 acres.

Treatments:
- Cultivations: All four combinations of intensive and little intertillage between rows, with and without earthing up; also intensive cultivation until the crop was well through the ground, then mulching with 3 tons chaffed straw per acre between rows.
- Application of fertilizers: Broadcast before ridging, applied in the bouts.
- Spraying: Two of the four blocks were sprayed with sulphuric acid to kill off haulm before lifting.

Cultivations, etc.:
Ploughed: during Jan. Cultivated: Mar 16. Harrowed: Mar 25. Artificials applied before ridging: Apr 10. Ridged, artificials applied, potatoes planted and covered in: Apr 12. Rolled ridges: Apr 21. Chain-harrowed: May 18. Grubbed "intensive intertillage" plots: June 14. Grubbed, all plots: June 19. Earthed up, appropriate plots: June 26. Chaffed straw applied: July 8. Sprayed to kill off haulm: Sept 14. Lifted: Oct 5, 6. Variety: Majestic (Scotch A). Previous crop: Barley.

Standard errors per plot:

Total tubers,	1.35 tons per acre or 10.2%
Percentage ware,	0.780
Percentage greened,	5.02

All standard errors estimated from 22 d.f.

	Little Intertillage		Intensive Intertillage				
	Not earthed up	Earthed up	Not earthed up	Earthed up	Mulched	Mean	Effect of Spraying
	Total tubers; tons per acre (±0.673)						
Artificials applied before ridging	12.12	12.87	12.15	11.72	14.26	(±0.301) 12.63	(±0.602) -0.38
Artificials applied after ridging	13.69	13.19	13.72	13.21	15.00	13.76	-0.06
Mean (±0.476)	12.91	13.03	12.93	12.46	14.63	13.19	
Effect of Spraying (±0.952)	-0.26	0.60	-0.64	-0.57	-0.23		
	Percentage Waste (±0.276)						
Artificials applied before ridging	97.92	97.75	97.42	98.90	98.08	(±0.174 93.02	(±0.349) 0.27
Artificials applied after ridging	97.70	98.50	97.92	98.80	98.82	98.35	0.54
Mean (±0.276)	97.81	98.12	97.68	98.85	98.45	98.18	
Effect of Spraying (±0.552)	0.32	0.40	-0.10	0.15	1.25		

48/Ca/2.2

48/Ca/2.3

	Little Intertillage		Intensive Intertillage				
	Not earthed up	Earthed up	Not earthed up	Earthed up	Mulched	Mean	Effect of Spraying
Percentage Greened: (±1.774)							
Artificials applied before ridging	3.61	4.93	13.56	5.82	6.61	(±1.122)	(±2.244)
after ridging	9.92	3.60	8.92	2.53	6.08	6.91	-3.16
						6.21	-3.05
Mean (±1.774)	6.76	4.26	11.24	4.18	6.34	6.56	
Effect of Spraying (±3.548)	-3.52	-2.08	-0.69	-2.46	-6.77		

48/Cd/3.1

POTATOES

The effects of four times of planting, of dung, sulphate of ammonia, superphosphate and muriate of potash.

RP - Sawyers II, 1948

System of replication: 4 randomized blocks of 16 plots each, certain high order interactions being confounded with block differences.

Area of each plot: 0.0133 acre

Treatments:
Time of planting: 10th April, 24th April, 8th May, 22nd May.
Dung: None, 15 tons F.Y.M. per acre
Sulphate of ammonia: None, 0.6 cwt. N per acre
Superphosphate: None, 0.6 cwt. P_2O_5 per acre
Muriate of Potash: None, 1.0 cwt. K_2O per acre.

Cultivations: Whole experiment; Ploughed: during Jan. Cultivated: Mar 16 Tooth harrowed: Mar 25. Sprayed with Perenox: Aug 10. Sprayed with 20% B.O .V. to kill off haulm: Sept 15. Lifted: Oct 4-5.

1st planting; Bouted: Apr 8. Artificials applied: Apr 9. Dung applied, potatoes planted and covered in: Apr 10. Rolled ridges: Apr 12. Chain harrowed: May 18. Grubbed: June 14 and again June 19. Earthed up: June 21.

2nd planting; Ridged, dung and artificials applied, potatoes planted and covered in: Apr 24. Rolled ridges: May 6. Chain harrowed: May 18. Grubbed: June 14 and again June 19. Earthed up: June 26.

3rd planting; Thistles cut, ridged, dung and artificials applied, potatoes planted and covered in: May 7. Rolled ridges: May 8. Chain harrowed: June 5. Weeded: July 5. Earthed up: July 7.

4th planting; Thistles cut: May 7. Dung and artificials applied, potatoes planted and covered in: May 21. Rolled ridges: May 22. Chain harrowed: June 5. Weeded: July 5. Earthed up: July 29.

Variety: Majestic (Scotch A), Previous crop: Barley.

Standard error per plot: Total tubers, ±1.98 tons per acre or 21.0% (34 d.f.)

Total tubers: tons per acre

48/Ca/3.2

	Time of Planting				
	10th April	24th April	8th May	22nd May	Mean
Mean (±0.496)	12.15	9.22	9.42	6.91	9.42
No Dung (±0.701)	10.75	8.35	8.61	7.10	8.71
Dung	13.55	10.08	10.23	6.71	10.14
Response to Dung (±0.992)	2.80	1.73	1.62	-0.39	1.43(1)
No Nitrogen (±0.701)	11.96	9.53	8.92	6.54	9.24
Nitrogen	12.34	8.91	9.92	7.28	9.61
Response to Nitrogen (±0.992)	0.38	-0.62	1.00	0.74	0.37(1)
No Superphosphate (±0.701)	10.98	8.63	9.46	7.36	9.11
Superphosphate	13.32	9.81	9.38	6.46	9.74
Response to Superphosphate (±0.992)	2.34	1.18	-0.08	-0.90	0.63(1)
No Potash (±0.701)	11.22	9.19	9.17	6.83	9.10
Potash	13.08	9.25	9.68	6.99	9.75
Response to Potash (±0.992)	1.86	0.06	0.51	0.16	0.65(1)

Standard Error (1) ±0.496

48/Cd./3.3

Responses to Treatments ± 0.701

Response to	Dung		Sulphate of Ammonia		Super-phosphate		Muriate of Potash	
	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.
Dung	–	–	1.14	1.74	1.69	1.19	1.97	0.91
Sulphate of ammonia	0.07	0.67	–	–	0.41	0.33	0.60	0.14
Super-phosphate	0.89	0.39	0.68	0.60	–	–	0.58	0.70
Muriate of potash	1.18	0.12	0.88	0.42	0.59	0.71	–	–

48/Ce/1.1

SUGAR BEET

The effects of two methods of broadcasting and of two other methods of placement of two levels of a compound fertilizer.

RS – Long Hoos. 1948

System of replication: 3 randomized blocks of 11 plots each

Area of each plot (after rejecting edge rows): 0.00906 acre

Treatments:
Levels of fertilizer: None, 5, 10 cwt per acre of National Compound No 2 (9% N, 7% P_2O_5, 4½% K_2O)
Methods of placement: Broadcast before all cultivations, broadcast on seedbed and harrowed in at once, placed in band 2" below and 1" to side of seed, placed in band 2" below and 3" to side of seed.

Basal Manuring: None

Cultivations etc: Ploughed: Sept 30 – Oct 2. Springtine harrowed then rolled and springtined: Mar 10. Ground chalk applied 2 tons per acre: Mar 13. Fertilizer broadcast before cultivation on appropriate plots: Mar 19. Cultivated: Mar 20. Rolled and springtine harrowed: Mar 22. Harrowed and ring rolled, fertilizer broadcast on seedbed, seed drilled, and fertilizers placed: Mar 30. Dusted against flea beetle: May 7, 14 and 15. Hoed: May 27 – 28. Singled: June 4 – 5. Hoed: June 12 – 15, 16, 23 – 24, July 15 – 16 and 19 – 20. Lifted: Dec 8. Variety: Klein E. Previous crop: Barley.

Standard errors per plot:

Clean beet:	±0.950 tons per acre or 7.33%
Sugar percentage:	±0.352
Total sugar:	±3.27 cwt per acre or 7.4%
Tops:	±1.70 tons per acre or 12.2%
Plant number:	±1.02 thousand per acre or 4.4%

All standard errors estimated from 22 d.f.

Fertilizer (cwt/acre)	Broad-cast before cultivations	Broad-cast on seed bed	Band 2" below and 1" to side	Band 2" below and 3" to side	Mean	
Clean Beet: tons per acre (±0.549)						
None					11.49	(±0.317)
5	13.49	13.77	13.24	13.19	13.42	(±0.274)
10	13.88	13.37	13.98	13.23	13.61	
Mean (±0.388)	13.68	13.57	13.61	13.21	12.97	
Sugar Percentage: (±0.203)						
None					17.14	(±0.117)
5	17.09	17.11	17.11	16.98	17.07	(±0.102)
10	16.77	16.79	16.79	17.26	16.90	
Mean (±0.144)	16.93	16.95	16.95	17.12	17.03	
Total Sugar: cwt per acre (±1.89)						
None					39.4	(±1.09)
5	46.1	47.1	45.3	44.8	45.8	(±0.95)
10	46.6	44.9	47.0	45.7	46.0	
Mean (±1.34)	46.3	46.0	46.2	45.2	44.1	
Tops: tons per acre (±0.983)						
None					10.44	(±0.567)
5	13.64	12.36	13.52	15.01	13.63	(±0.491)
10	16.42	15.96	18.89	16.55	16.95	
Mean (±0.695)	15.03	14.16	16.21	15.78	13.97	
Plant Number: thous. per acre (±0.589)						
None					23.2	(±0.340)
5	22.7	22.7	23.1	23.3	23.0	(±0.295)
10	23.2	23.1	23.4	22.6	23.1	
Mean (±0.417)	23.0	22.9	23.3	22.9	23.1	

48/Cf/1.1

LINSEED

The effects of time of sowing, seed rate, sulphate of ammonia, superphosphate and muriate of potash.

R/JL – Bones Close 1948

System of replication: 4 randomised blocks of 8 plots each; certain high order interactions confounded with block differences.

Area of each plot: 0.0212 acre.

Treatments:
Time of sowing: 24th March (Early), 20th April (Late).
Seed rate: 60 and 90 lbs per acre.
Sulphate of ammonia: None, 0.45 cwt N per acre.
Superphosphate: None, 0.60 cwt P_2O_5 per acre.
Muriate of Potash: None, 0.45 cwt K_2O per acre.

Basal Manuring: None.

Cultivations etc: Ploughed: Nov 10–18. Springtine harrowed: Mar 3–4. Rolled and springtine harrowed: Mar 12. Harrowed: Mar 23. "Early" seed drilled, and artificials applied to "Early" plots: Mar 24. Harrowed in: Mar 25. Ring rolled: Mar 27. "Late" seed drilled, and artificials applied to "Late" plots: Apr 20. Harrowed and light ring rolled: Apr 21. Dusted against flea beetle: May 18. Thistles hand hoed: May 25. Agroxone used against weeds: May 27. Hoed: June 4–7 and 8–9. Harvested: Aug 28. Variety: Royal
Previous crop: Barley.

Note: The late sown crop was practically a failure, and was discarded.

Standard error per plot: ±0.979 per acre or 12.6% (3 d.f.)

Grain: cwt per acre

Mean yield 7.78

Responses to treatments (±0.693. Means ±0.490)

Responses to:	Mean	Sulphate of Ammonia		Superphosphate		Muriate of Potash		Seed Rate lb per acre	
		Abs.	Pres.	Abs.	Pres.	Abs.	Pres.	60	90
Sulphate of Ammonia	1.61	-	-	1.23	1.99	-	-	1.25	1.97
Superphosphate	-1.08	-1.46	-0.70	-	-	-0.75	-1.41	-1.75	-0.41
Muriate of Potash	1.90	-	-	2.23	1.57	-	-	3.18	0.62
Seed Rate 90-60	1.28	0.92	1.64	0.61	1.95	2.56	0.00	-	-

Note: Owing to the discarding of the late sown crop, the interaction of Sulphate of Ammonia and Muriate of Potash was confounded with block differences.

48/Cf/1.2

LINSEED

The effects of rates and methods of application of a compound fertilizer.

R/JL - Bones Close 1948

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

Area of each plot: 0.0191 acre.

Treatments:
None
$4\frac{1}{2}$ and 9 cwt compound fertilizer per acre, broadcast.
$2\frac{1}{4}$ and $4\frac{1}{2}$ cwt compound fertilizer per acre, drilled.

The compound fertilizer was made up of:

	lb
Sulphate of Ammonia	32
Superphosphate	57
Muriate of Potash	11
Total	100

= 6.7% N, 9.0% P_2O_5, 6.7% K_2O.

Basal Manuring: None.

Cultivations etc: Ploughed: Nov 10-18. Springtine harrowed: Mar 3-4. Rolled and springtine harrowed: Mar 12. Tooth-harrowed: Mar 23. Seed drilled, and compound drilled and broadcast: Mar 24. Harrowed in: Mar 25. Ring rolled Mar 27. Dusted against flea beetle: May 18. Thistles hand hoed: May 25. Agroxone applied against weeds: May 27. Hoed: June 4-7 and again 8-9. Harvested: Aug 28. Variety: Royal. Previous crop: Barley.

Standard error per plot: ·1.42 cwt per acre or 14.4% (16 d.f.)

Grain: cwt per acre

	Compound		
	None	Broadcast	Drilled	Mean
Level 1		11.2	9.6	10.4
		(±0.71)		(±0.50)
Level 2		8.2	7.9	8.1
Mean (±0.50)	11.2	9.7	8.8	9.9
Difference (±1.01)		-3.0	-1.7	-2.3 (±0.71)

48/Cf/3.1

LINSEED

The effects of time of sowing, seed rate, sulphate of ammonia, superphosphate and muriate of potash.

Broad Mead I Woburn 1948

System of replication: 4 randomized blocks of 8 plots each; certain high order interactions confounded with block differences.

Area of each plot: 0.0212 acre.

Treatments:

Time of sowing:	22nd March (Early), 16th April (Late)
Seed rate:	60 and 90 lbs per acre.
Sulphate of ammonia:	None, 0.45 cwt N per acre.
Superphosphate:	None, 0.60 cwt P_2O_5 per acre.
Muriate of potash:	None, 0.45 cwt K_2O per acre

Basal Manuring: None.

Cultivations etc: Ploughed: Feb 4 and Mar 1. Rolled: Mar 2. Harrowed three times: between Mar 12-18. "Early" seed sown and artificials applied to "Early" plots: Mar 22. Harrowed and rolled: Mar 23. "Late" seed sown and artificials applied to "Late" plots: Apr 16. Harrowed and rolled: Apr 16. Dusted against flea beetle: May 5-8, and again May 14. Weeds pulled: June 8. Early plots harvested: Aug 19. Late plots harvested: Sept 9.

Standard Error per plot: ±1.296 cwt per acre or 14.7% (13 d.f.)

Grain: cwt per acre

Mean yield: 8.79

Responses to treatments: (±0.648. Means ±0.458)

Response to:	Mean	Sulphate of Ammonia		Super phosphate		Muriate of potash		Sowing		Seed Rate lbs per acre	
		Absent	Present	Absent	Present	Absent	Present	Early	Late	60	90
Sulphate of Ammonia	0.05	-	-	0.47	-0.37	0.40	-0.30	-1.06	1.16	0.84	-0.74
Superphosphate	-0.16	0.26	-0.58	-	-	0.77	-1.09	-0.32	0.00	0.52	-0.84
Muriate of Potash	0.29	0.64	-0.06	1.22	-0.64	-	-	0.10	0.48	-0.26	0.84
Sowing Late-Early	-1.00	-2.11	0.11	-1.16	-0.84	-1.19	-0.81	-	-	-0.26	-1.74
Seed Rate 90-60	0.26	1.05	-0.53	0.94	-0.42	-0.29	0.81	1.00	-0.48	-	-

48/Cf/3.2

LINSEED

The effects of rates and methods of application of a compound fertilizer.

W/JL - Broad Mead I Woburn 1948

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

Area of each plot: 0.0212 acre.

Treatments:
None.
4½ and 9 cwt compound fertilizer per acre, broadcast
2¼ and 4½ cwt compound fertilizer per acre, drilled.

The compound fertilizer was made up of:

	lb
Sulphate of Ammonia	32
Superphosphate	57
Muriate of Potash	11
Total	100

= 6.7% N. 9.0% P_2O_5 6.7% K_2O

Basal Manuring: None.

Cultivations etc: Ploughed: Feb 4 - Mar 1. Rolled: Mar.2. Harrowed three times: Mar 12-18. Seed sown and fertilizer applied to all plots: Mar 22. Harrowed and ring rolled: Mar 23. Dusted against flea beetle: May 5-8 Weeds pulled: June 8. Harvested: Aug 19. Variety: Royal. Previous crop: Ley.

Standard error per plot: 1.26 cwt. per acre or 13.0%. (16 d.f.)

Grain: cwt per acre

		Compound		
	None	Broadcast	Drilled	Mean
Level 1		9.9	10.5	10.2
		(±0.63)		(±0.45)
Level 2		6.9	8.6	8.7
Mean (±0.45)	10.2	9.4	9.5	9.7
Difference (±0.89)		-1.0	-1.9	-1.5 (±0.63)

PEAS

The effects of two methods of broadcasting and of two other methods of placement of two levels of a compound fertilizer.

R/PE - Long Hoos, 1948

System of replication: 3 randomized blocks of 12 plots each

Area of each plot: 0.0150 acre

Treatments:
- Levels of fertilizer: None, 3, 6 cwt. per acre of a special mixture (10% P_2O_5, 20% K_2O)
- Methods of placement: Broadcast before all cultivations, broadcast on seedbed and harrowed in at once, placed in band 2" below and 1" to side of seed, placed in band 2" below and 3" to side of seed.

Basal manuring: None

Cultivations, etc.: Ploughed: Sept 30 - Oct 2. Springtine harrowed then rolled and springtined: Mar 10. Ground chalk, 2 tons per acre, applied: Mar 13. Broadcast fertilizers, before cultivations on appropriate plots: Mar 19. Cultivated: Mar 20. Rolled and springtine harrowed: Mar 22. Harrowed, and ring rolled: Mar 30. Fertilizers broadcast in seedbed, seed drilled and fertilizers placed: Mar 30. Plant almost failed so decision made to resow, thistles cut, and seed redrilled: Apr 20. Harrowed and light ring rolled: Apr 21. Weeds pulled: June 7-9. Hoed: June 12.

Standard errors per plot:
- Yield, 1.61 cwt. per acre or 9.2% (25 d.f.)
- Plant number, 1.47 tens of thousands per acre or 10.5% (25 d.f.)

Fertilizer (cwt/acre)	Broadcast before cultivations	Broad-cast on seed bed	Band 2" below and 1" to side	Band 2" below and 3" to side	Mean
	Yield of threshed peanut cwt. per acre (±0.927)				(±0.464)
None					16.3
3	17.8	17.2	18.2	18.6	17.9
6	17.3	17.2	19.2	18.1	17.9
Mean (±0.656)	17.5	17.2	18.7	18.4	17.4
	Plant number: tens of thousands per acre (±0.851)				(±0.425)
None					13.4
3	14.0	13.2	13.5	15.5	14.1
6	14.6	13.7	15.3	14.2	14.5
Mean (±0.601)	14.3	13.5	14.4	14.9	14.0