

Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED
RESEARCH

Yields of the Field Experiments 1948

[Full Table of Content](#)



48/CA/1 Wheat - Eyespot

Rothamsted Research

Rothamsted Research (1949) *48/CA/1 Wheat - Eyespot* ; Yields Of The Field Experiments 1948, pp 58 - 61

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 ($\frac{1}{2}$ " $^0, 1, 2$), normal ($1\frac{1}{2}$ " 1), deep (3" 2) (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: Squareheads 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
(means from transformed values)

48/0a/1.0

	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)
(± 5.01 Means ± 2.89)

	Unsprayed				Sprayed				Effect of Spraying (± 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					3.4	10.0	7.7		

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