

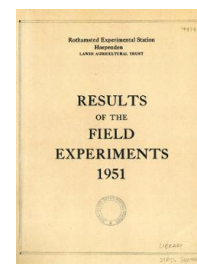
Thank you for using eradoc, a platform to publish electronic copies of the Rothamsted Documents. Your requested document has been scanned from original documents. If you find this document is not readable, or you suspect there are some problems, please let us know and we will correct that.



ROTHAMSTED  
RESEARCH

## Yields of the Field Experiments 1951

[Full Table of Content](#)



### 51/CE/1 Potatoes - Application of Dung - Rothamsted

#### Rothamsted Research

Rothamsted Research (1952) *51/CE/1 Potatoes - Application of Dung - Rothamsted* ; Yields Of The Field Experiments 1951, pp 76 - 80 - DOI: <https://doi.org/10.23637/ERADOC-1-171>

51/Ce/1.1

## POTATOES

Application of dung - Little Hoos 1951

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

Area of each sub plot: 0.0175 acre. Area harvested: 0.0140 acre.

Treatments: All combinations of:-

Whole plots      Dung: None; 5; 10; 15 tons per acre.  
Method of application: W-Ploughed in, in winter;  
S-Ploughed in, in spring; R-Placed in the ridges  
in spring.

Sub plots      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.

Basal manuring: None

Cultivations, etc.: Dung applied to 'W' plots; Sept 21. Ploughed all plots: Sept 22. Dung applied to 'S' plots, ploughed all plots: Mar 30. Ridged: May 8. Dung applied to 'R' plots, fertilizers applied in the ridges, potatoes planted: May 11. Earthed up: July 11. Sprayed with copper fungicide 5 lb per acre: Aug. 15 and again Sept 11. Sprayed with 15% sulphuric acid to kill off haulm: Oct 2. Lifted: Oct 10. Variety: Majestic. Previous crop: Wheat.

Standard errors per plot: total clean tubers.

Whole plot: 0.670 tons per acre or 12.0% (32 d.f.)

Sub plot: 0.911 tons per acre or 16.3% (30 d.f.)

Summary of Results

Total Clean Tubers: tons per acre

Dung: tons per acre

	0	5	10	15	Mean
Mean ( $\pm 0.193$ )	3.78	5.51	6.20	6.81	5.58
<u>Method of application</u>			( $\pm 0.335$ )		( $\pm 0.193$ )
Ploughed in, in winter		5.19	6.07	6.76	6.01
Ploughed in, in spring		5.03	6.19	6.41	5.88
Placed in ridges in spring		6.30	6.35	7.27	6.64
<u>Sulphate of ammonia</u>			( $\pm 0.268$ ) <sup>*</sup>		
None	3.55	4.65	5.54	6.12	4.96
0.6 cwt per acre N	4.01	6.37	6.86	7.51	6.19
Response to N ( $\pm 0.372$ )	0.46	1.72	1.32	1.39	1.23 <sup>(1)</sup>
<u>Superphosphate</u>			( $\pm 0.268$ ) <sup>*</sup>		
None	3.19	5.12	5.81	6.46	5.14
0.6 cwt per acre P <sub>2</sub> O <sub>5</sub>	4.37	5.90	6.60	7.17	6.01
Response to P ( $\pm 0.372$ )	1.18	0.78	0.79	0.71	0.87 <sup>(1)</sup>
<u>Muriate of Potash</u>			( $\pm 0.268$ ) <sup>*</sup>		
None	2.72	4.93	5.82	6.61	5.02
1.0 cwt per acre K <sub>2</sub> O	4.84	6.08	6.59	7.02	6.13
Response to K ( $\pm 0.372$ )	2.12	1.15	0.77	0.41	1.11 <sup>(1)</sup>

Standard error (1) 0.186

<sup>\*</sup>Standard error for use in comparisons other than vertical.

51/0e/1.3

Total Clean Tubers: tons per acre

	Method of application of dung		
	Ploughed in, in winter	Ploughed in, in spring	Placed in ridges in spring
<u>Sulphate of ammonia</u>		(±0.268) <sup>**</sup>	
None	5.13	5.45	5.73
0.6 cwt per acre N	6.89	6.31	7.55
Response to N (±0.372)	1.76	0.86	1.82
<u>Superphosphate</u>		(±0.268) <sup>**</sup>	
None	5.54	5.40	6.45
0.6 cwt per acre P <sub>2</sub> O <sub>5</sub>	6.48	6.36	6.83
Response to P (±0.372)	0.94	0.96	0.38
<u>Muriate of potash</u>		(±0.268) <sup>**</sup>	
None	5.30	5.53	6.53
1.0 cwt per acre K <sub>2</sub> O	6.71	6.23	6.75
Response to K (±0.372)	1.41	0.70	0.22

<sup>\*\*</sup>Standard error for use in comparisons other than vertical

Responses to treatments (±0.268)<sup>\*\*\*</sup>

Response to:	Sulphate of ammonia		Superphosphate		Muriate of potash	
	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.
Sulphate of ammonia	-	-	0.71	1.75	0.53	1.93
Superphosphate	0.34	1.38	-	-	0.86	0.86
Muriate of potash	0.41	1.81	1.11	1.11	-	-

<sup>\*\*\*</sup>Standard error of horizontal difference between two responses  
0.387

51/Cc/1.4

Percentage Ware  
( $1\frac{1}{2}$ " riddle)

Dung: tons per acre

	0	5	10	15	Mean
Mean	80.3	86.6	88.2	89.6	86.2
<u>Method of application</u>					
Ploughed in, in winter		87.0	87.6	89.6	88.1
Ploughed in, in spring		85.3	88.8	90.5	88.2
Placed in ridges in spring		87.4	88.1	88.8	88.1
<u>Sulphate of ammonia</u>					
None	81.8	85.6	87.1	89.6	86.0
0.6 cwt per acre N	78.9	87.6	89.3	89.6	86.4
Response to N	-2.9	2.0	2.2	0.0	0.4
<u>Superphosphate</u>					
None	79.6	86.6	88.3	90.3	86.2
0.6 cwt per acre $P_2O_5$	81.1	86.6	88.1	88.9	86.2
Response to P	1.5	0.0	-0.2	-1.4	0.0
<u>Muriate of potash</u>					
None	73.2	84.7	87.4	90.3	83.9
1.0 cwt per acre $K_2O$	87.5	88.5	89.0	88.9	88.5
Response to K	14.3	3.8	1.6	-1.4	4.6

51/Cc/1.5

	Percentage Ware ( $1\frac{1}{2}$ " riddle)		
	Method of application of dung		
	Floughed in, in winter	Floughed in, in spring	Placed in ridges in spring
<u>Sulphate of ammonia</u>			
None	86.5	87.6	88.2
0.6 cwt per acre N	89.7	88.8	88.0
Response to N	3.2	1.2	-0.2
<u>Superphosphate</u>			
None	87.9	88.6	88.7
0.6 cwt per acre $P_{2}O_{5}$	88.3	87.8	87.6
Response to P	0.4	-0.8	-1.1
<u>Muriate of potash</u>			
None	86.0	87.5	88.9
1.0 cwt per acre $K_{2}O$	90.1	88.9	87.3
Response to K	4.1	1.4	-1.6

Responses to treatments:

Response to:	Sulphate of ammonia		Superphosphate		Muriate of potash	
	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.
Sulphate of ammonia	-	-	1.2	-0.4	-0.6	1.4
Superphosphate	0.8	-0.8	-	-	-0.2	0.2
Muriate of potash	3.5	5.5	4.3	4.7	-	-