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Yields of the Field Experiments 1950

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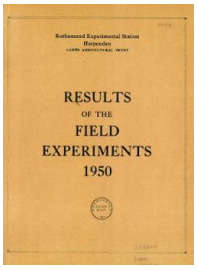

50/CE/1 Potatoes - Application of Dung - Rothamsted

Rothamsted Research

Rothamsted Research (1951) *50/CE/1 Potatoes - Application of Dung - Rothamsted ;* Yields Of The Field Experiments 1950, pp 69 - 73 **- DOI: https://doi.org/10.23637/ERADOC-1-185**

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POTATOES

Application of dung - Sawyers I 1950.

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 F.Y.M. per acre. Method of application: Ploughed in, in winter (W); ploughed in, in spring (S); or placed in the ridges (R).

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: Oct 24. Ploughed all plots: Oct 24-25. Dung applied to "S" plots: Mar 6. Ploughed all plots: Mar 9. Disced both ways and harrowed: Mar 29. Ring rolled: Mar 30. Ridged: Apr 11. Dung applied to "R" plots, artificials applied in the ridges, planted and covered in: Apr 11-13. Ring rolled ridges: Apr 14. Harrowed: May 11. Grubbed: May 24. Earthed up: June 29. Hand pulled weeds: various days July 30-Aug 24. Sprayed with Perenox: Aug 2-3. Sprayed with Copperman: Aug 23-24. Sprayed with 15% B.O.V. to kill off haulm: Sept 25 and 28. Lifted: Oct 27-29. Variety: Majestic. Previous crop: Wheat.

Standard errors per plot: Total clean tubers:

Whole plot: 0.727 tons per acre or 5.2% (32 d.f.)
Sub-plot: 1.16 tons per acre or 8.4% (29 d.f.)

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Summary of Results

Total clean tubers: tons per acre

	Dung: tons per acre 0	5	10	15	Mean
Mean (±0.210)	11.12	13.76	15.20	15.34	13.86
Method of application		(±0.363)			(±0.210)
Ploughed in, in winter		13.26	15.37	14.99	14.54
Ploughed in, in spring		13.86	15.61	15.23	14.90
Placed in ridges		14.16	14.61	15.80	14.86
Sulphate of ammonia		(±0.316)*			
None	10.31	12.89	14.11	14.14	12.86
0.6 cwt per acre N	11.93	14.63	16.29	16.55	14.85
Response to N (±0.473)	1.62	1.74	2.18	2.41	1.99 (1)
Superphosphate		(±0.316)*			
None	11.55	13.47	14.72	14.70	13.61
0.6 cwt per acre P_2O_5	10.69	14.05	15.68	15.98	14.10
Response to P (±0.473)	-0.86	0.58	0.96	1.28	0.49 (1)
Muriate of potash		(±0.316)*			
None	9.09	12.72	15.04	15.08	12.98
1.0 cwt per acre K_2O	13.15	14.80	15.36	15.61	14.73
Response to K (±0.473)	4.06	2.08	0.32	0.53	1.75 (1)

Standard error (1) ±0.236

*Standard error for comparisons other than vertical.

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Total clean tubers: tons per acre

	Method of application of dung		
	Ploughed in, in winter	Ploughed in, in spring	Placed in ridges
Sulphate of ammonia		(±0.316)*	
None	13.43	13.83	13.87
0.6 cwt per acre N	15.65	15.97	15.85
Response to N (±0.473)	2.22	2.14	1.98
Superphosphate		(±0.316)*	
None	13.95	14.48	14.46
0.6 cwt per acre P_2O_5	15.13	15.32	15.26
Response to P (±0.473)	1.18	0.84	0.80
Muriate of potash		(±0.316)*	
None	14.29	14.13	14.41
1.0 cwt per acre K_2O	14.79	15.67	15.31
Response to K (±0.473)	0.50	1.54	0.90

*Standard error for comparisons other than vertical

Responses to treatments (±0.316)**

Response to:	Sulphate of ammonia		Superphosphate		Muriate of potash	
	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.
Sulphate of ammonia	-	-	1.87	2.11	1.69	2.29
Superphosphate	0.37	0.61	-	-	0.23	0.75
Muriate of potash	1.43	2.05	1.49	2.01	-	-

**Standard error of horizontal difference between two responses: ±0.420

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Percentage Ware

	Dung: tons per acre 0	5	10	15	Mean
Mean	89.30	90.39	91.38	92.66	90.93
Method of application					
Ploughed in, in winter		91.18	91.79	91.51	91.49
Ploughed in, in spring		89.91	91.46	92.85	91.41
Placed in ridges		90.08	90.89	93.62	91.53
Sulphate of ammonia					
None	89.38	91.09	90.97	92.42	90.96
0.6 cwt per acre N	89.22	89.68	91.79	92.90	90.90
Response to N	-0.16	-1.41	0.82	0.48	-0.06
Superphosphate					
None	90.17	90.44	91.65	93.15	91.35
0.6 cwt per acre P_2O_5	88.43	90.33	91.11	92.18	90.51
Response to P	-1.74	-0.11	-0.54	-0.97	-0.84
Muriate of potash					
None	88.08	89.43	91.18	91.98	90.17
1.0 cwt per acre K_2O	90.52	91.34	91.58	93.34	91.70
Response to K	2.44	1.91	0.40	1.36	1.53

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Percentage Ware

	Method of application of dung		
	Ploughed in, in winter	Ploughed in, in spring	Placed in ridges
Sulphate of ammonia			
None	91.38	91.69	91.42
0.6 cwt per acre N	91.61	91.12	91.64
Response to N	0.23	-0.57	0.22
Superphosphate			
None	91.86	92.32	91.06
0.6 cwt per acre P_2O_5	91.12	90.49	92.00
Response to P	-0.74	-1.83	0.94
Muriate of potash			
None	90.69	91.05	90.85
1.0 cwt per acre K_2O	92.29	91.77	92.21
Response to K	1.60	0.72	1.36

Responses to treatments

Response to:	Sulphate of ammonia		Superphosphate		Muriate of potash	
	Abs.	Pres.	Abs.	Pres.	Abs.	Pres.
Sulphate of ammonia	-	-	-0.45	0.33	1.27	-1.39
Superphosphate	-1.23	-0.45	-	-	-1.93	0.25
Muriate of potash	2.86	0.20	0.44	2.62	-	-