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## Yields of the Field Experiments 1957

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### 57/R/CF/3 and 57/W/CF/3 Potatoes - Dung N P and K

#### Rothamsted Research

Rothamsted Research (1958) *57/R/CF/3 and 57/W/CF/3 Potatoes - Dung N P and K* ; Yields Of The Field Experiments 1957, pp 98 - 101 - DOI: <https://doi.org/10.23637/ERADOC-1-177>

57/Cf/3.1

## POTATOES

Dung, N, P and K - Rothamsted (R) West Barnfield II and Woburn (W)  
Great Hill 1957.

Design (each field): 4 randomized blocks of 16 plots each, a high order interaction being confounded with block differences.

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

Treatments: All combinations of:-

Dung: None; 5; 10; 20 tons per acre ploughed in.  
N: None; 0.9 cwt N per acre as sulphate of ammonia.  
P: None; 0.75 cwt  $P_2O_5$  per acre as superphosphate.  
K: None; 1.5 cwt  $K_2O$  per acre as muriate of potash.

Basal dressing: None.

Cultivations, etc.:

West Barnfield II (R). Dung applied, ploughed: Jan 9. Fertilizers applied: Apr 19. Potatoes machine planted: Apr 24. Earthed up: July 5. Sprayed with copper fungicide, 5 lb in 40 gallons per acre: Aug 1 and Aug 21. Sprayed with sulphuric acid, 20% BOV, 100 gallons per acre: Sept 19. Lifted: Oct 2 - 3. Variety: Majestic. Previous crop: Barley.

Great Hill (W). Dung applied, ploughed: Feb 4. Fertilizers applied: Apr 15. Potatoes machine planted: Apr 16. Earthed up: July 3. Sprayed with copper fungicide at 5 lb in 40 gallons per acre: Aug 3, Aug 23, Sept 3. Sprayed with sodium arsenite at 1 gallon in 40 gallons per acre: Sept 17. Lifted: Oct 3 - 4. Variety: Majestic. Previous crop: Barley.

Standard errors per plot. Total tubers.

West Barnfield II (R): 0.785 tons per acre or 6.9% (30 d.f.)  
Great Hill (W): 1.126 tons per acre or 8.1% (30 d.f.)



57/Cf/3.2

Summary of Results

Total tubers: tons per acre

	Dung: tons per acre				Mean
	None	5	10	20	
West Barnfield II, Rothamsted					
Mean ( $\pm 0.196$ )	9.31	11.01	12.08	13.20	11.40
N: cwt per acre					
None ( $\pm 0.278$ )	9.09	10.76	12.10	12.92	11.22
0.9 ( $\pm 0.278$ )	9.54	11.26	12.05	13.49	11.58
Difference ( $\pm 0.392$ )	+0.45	+0.50	-0.05	+0.57	+0.36 ( $\pm 0.196$ )
P <sub>2</sub> O <sub>5</sub> : cwt per acre					
None ( $\pm 0.278$ )	9.22	10.31	11.66	13.07	11.06
0.75 ( $\pm 0.278$ )	9.41	11.71	12.49	13.34	11.74
Difference ( $\pm 0.392$ )	+0.19	+1.40	+0.83	+0.27	+0.68 ( $\pm 0.196$ )
K <sub>2</sub> O: cwt per acre					
None ( $\pm 0.278$ )	8.08	10.30	11.72	12.91	10.75
1.5 ( $\pm 0.278$ )	10.55	11.72	12.43	13.50	12.05
Difference ( $\pm 0.392$ )	+2.47	+1.42	+0.71	+0.59	+1.30 ( $\pm 0.196$ )
Great Hill, Woburn					
Mean ( $\pm 0.282$ )	13.42	13.47	14.23	14.58	13.92
N: cwt per acre					
None ( $\pm 0.398$ )	12.62	12.88	13.71	14.14	13.34
0.9 ( $\pm 0.398$ )	14.22	14.06	14.74	15.01	14.51
Difference ( $\pm 0.563$ )	+1.60	+1.18	+1.03	+0.87	+1.17 ( $\pm 0.282$ )
P <sub>2</sub> O <sub>5</sub> : cwt per acre					
None ( $\pm 0.398$ )	13.52	13.52	14.13	14.00	13.79
0.75 ( $\pm 0.398$ )	13.32	13.42	14.32	15.16	14.06
Difference ( $\pm 0.563$ )	-0.20	-0.10	+0.19	+1.16	+0.27 ( $\pm 0.282$ )
K <sub>2</sub> O: cwt per acre					
None ( $\pm 0.398$ )	12.92	13.14	14.08	14.34	13.62
1.5 ( $\pm 0.398$ )	13.93	13.80	14.38	14.81	14.23
Difference ( $\pm 0.563$ )	+1.01	+0.66	+0.30	+0.47	+0.61 ( $\pm 0.282$ )



57/Cf/3.3

Percentage Ware

	Dung: tons per acre				Mean
	None	5	10	20	
West Barnfield II, Rothamsted <sup>(1)</sup>					
Mean	87.9	90.1	86.6	86.2	87.7
N: cwt per acre					
None	89.0	91.7	88.2	87.6	89.1
0.9	86.8	88.6	85.0	84.8	86.3
Difference	-2.2	-3.1	-3.2	-2.8	-2.8
P <sub>25</sub> : cwt per acre					
None	89.9	90.6	86.5	85.0	88.0
0.75	85.8	89.7	86.7	87.4	87.4
Difference	-4.1	-0.9	+0.2	+2.4	-0.6
K <sub>20</sub> : cwt per acre					
None	86.8	89.9	87.8	87.9	88.1
1.5	88.9	90.4	85.4	84.4	87.3
Difference	+2.1	+0.5	-2.4	-3.5	-0.8
Great Hill, Woburn <sup>(2)</sup>					
Mean	88.8	88.6	88.6	88.6	88.6
N: cwt per acre					
None	89.8	89.6	88.6	90.9	89.7
0.9	87.8	87.5	88.6	86.4	87.6
Difference	-2.0	-2.1	0.0	-4.5	-2.1
P <sub>25</sub> : cwt per acre					
None	89.0	90.1	89.0	87.0	88.8
0.75	88.7	87.0	88.2	90.2	88.5
Difference	-0.3	-3.1	-0.8	+3.2	-0.3
K <sub>20</sub> : cwt per acre					
None	88.5	88.2	88.3	88.3	88.3
1.5	89.2	88.9	88.8	89.0	89.0
Difference	+0.7	+0.7	+0.5	+0.7	+0.7

Riddle: (1) 1½" (2) 1⅝"



57/Cf/3.4

Total tubers: tons per acre

Response to	Responses to treatments cwt per acre					
	N		P <sub>2</sub> O <sub>5</sub>		K <sub>2</sub> O	
	None	0.9	None	0.75	None	1.5

West Barnfield II, Rothamsted

(±0.278)

N	-	-	+0.40	+0.32	+0.30	+0.42
P <sub>2</sub> O <sub>5</sub>	+0.71	+0.63	-	-	+0.03	+1.31
K <sub>2</sub> O	+1.24	+1.36	+0.66	+1.94	-	-

Great Hill, Woburn

(±0.398)

N	-	-	+1.61	+0.73	+0.96	+1.38
P <sub>2</sub> O <sub>5</sub>	+0.70	-0.18	-	-	+0.32	+0.20
K <sub>2</sub> O	+0.40	+0.82	+0.67	+0.55	-	-

Percentage ware

Response to	Responses to treatments cwt per acre					
	N		P <sub>2</sub> O <sub>5</sub>		K <sub>2</sub> O	
	None	0.9	None	0.75	None	1.5

West Barnfield II, Rothamsted<sup>(1)</sup>

N	-	-	-1.7	-3.9	-0.7	-4.9
P <sub>2</sub> O <sub>5</sub>	+0.5	-1.7	-	-	-0.3	-0.9
K <sub>2</sub> O	+1.3	-2.9	-0.5	-1.1	-	-

Great Hill, Woburn<sup>(2)</sup>

N	-	-	-2.5	-1.9	-1.7	-2.7
P <sub>2</sub> O <sub>5</sub>	-0.5	+0.1	-	-	-0.7	+0.3
K <sub>2</sub> O	+1.2	+0.2	+0.2	+1.2	-	-

Riddle: (1) 1½" (2) 1⅝"