

**Low Technology Institute**  
**Research Project No. 2 – Potato-Growing Methods**

Data Handout

[info@lowtechinstitute.org](mailto:info@lowtechinstitute.org)

		Trench and Hill	Straw Mulch	Newspaper And Straw	Container	Tower
<b>Uniform Inputs</b>						
Seed Potatoes	per ft <sup>2</sup>	\$0.06	\$0.06	\$0.06	\$0.06	\$0.06
	per seed/plant	\$0.23	\$0.23	\$0.23	\$0.23	\$0.23
Compost	per ft <sup>2</sup>	\$0.43	\$0.43	\$0.43	\$0.43	\$0.43
	per seed/plant	\$1.51	\$1.51	\$1.51	\$1.51	\$1.51
Mulch	per ft <sup>2</sup>	\$0.13	\$0.13	\$0.13	\$0.13	\$0.19
	per seed/plant	\$0.44	\$0.44	\$0.44	\$0.44	\$0.66
Container, if any	per ft <sup>2</sup>	\$0.00	\$0.00	\$0.00	\$0.65*	\$2.59
	per seed/plant	\$0.00	\$0.00	\$0.00	\$1.00	\$9.21†
<i>Total</i>	<i>per ft<sup>2</sup></i>	<i>\$0.62</i>	<i>\$0.62</i>	<i>\$0.62</i>	<i>\$1.27</i>	<i>\$3.27</i>
	<i>per seed/plant</i>	<i>\$2.18</i>	<i>\$2.18</i>	<i>\$2.18</i>	<i>\$3.18</i>	<i>\$11.61</i>

\*spent grain bags provided for free from Wisconsin Brewing Company  
† 3.6 seed potatoes per tower, each tower cost \$33.17

<b>Uniform Inputs</b>						
Seed	lb/ft <sup>2</sup>	0.05 lb	0.05 lb	0.05 lb	0.05 lb	0.05 lb
	ft <sup>2</sup> for each 3-oz seed potato	3.6 ft <sup>2</sup>	3.6 ft <sup>2</sup>	3.6 ft <sup>2</sup>	3.6 ft <sup>2</sup>	3.6 ft <sup>2</sup>
Compost	lb/ft <sup>2</sup>	1.125 lb	1.125 lb	1.125 lb	1.125 lb	1.125 lb
	lb per seed potato	4.0 lb	4.0 lb	4.0 lb	4.0 lb	4.0 lb
Mulch	% of small straw bale/ft <sup>2</sup>	3%	3%	3%	3%	5%
	% of bale per seed potato	11%	11%	11%	11%	17%
Containers	per ft <sup>2</sup>	0	0	0	0.33	0.08
	ft <sup>2</sup> for each container	0	0	0	3.6 ft <sup>2</sup>	12.8 ft <sup>2</sup>
	seed potatoes per container	0	0	0	1	3.6

**Variable Inputs per Participant**

Total Waterings (n = 10)	average times per season	0.63	0.63	0.63	0.63	0.63
	standard deviation	0.74	0.74	0.74	0.74	0.74
	range	0–2	0–2	0–2	0–2	0–2
Total Hillings (n = 10)	average times per season	2.50	2.38	2.50	2.63	2.88
	standard deviation	0.53	0.52	0.53	0.74	0.83
	range	2–3	2–3	2–3	2–4	2–4
Total Weeding (n = 10)	average times per season	2.88	2.25	2.13	1.75	2.00
	standard deviation	1.36	1.83	1.96	1.75	1.51
	range	2–6	0–6	0–6	0–5	0–5
Total Pest Treatments (n = 10)	average times per season	1.75	1.63	1.63	1.50	1.50
	standard deviation	1.49	1.51	1.51	1.31	1.60
	range	0–4	0–4	0–4	0–3	0–4
<i>Total “Work Inputs”</i>	<i>average number of inputs</i>	<i>9.50</i>	<i>8.50</i>	<i>8.50</i>	<i>8.00</i>	<i>8.50</i>
	<i>standard deviation</i>	<i>3.78</i>	<i>4.00</i>	<i>3.93</i>	<i>3.30</i>	<i>3.89</i>
	<i>range</i>	<i>5–15</i>	<i>4–15</i>	<i>5–15</i>	<i>5–14</i>	<i>5–14</i>

		<b>Trench &amp; Hill</b>	<b>Straw Mulch</b>	<b>Newspap. &amp; Straw</b>	<b>Container</b>	<b>Tower</b>
<b>Yields</b>						
Total Yields (n = 10)	average per ft <sup>2</sup> (lb)	0.51	0.37	0.39	0.33	0.37
	standard deviation (lb)	0.40	0.39	0.38	0.26	0.39
	range (lb)	0.09–0.97	0.00–0.86	0.00–0.90	0.05–0.68	0.00–0.95
Sum of squares test returns a p-value of 0.99997 ( <i>F</i> = 0.0039) at <i>p</i> < .05. There are 9,999 in 10,000 chances that this result could be random; not statistically significant.						
Uncompromised Yields (n = 6)	lb per seed/plant	1.81	1.31	1.38	1.17	1.30
	standard deviation (lb)	1.41	1.39	1.36	0.94	1.39
	range (lb)	0.31–3.44	0.01–3.06	0.01–3.20	0.17–2.43	0.01–3.38
Uncompromised Yields (n = 6)	average per ft <sup>2</sup> (lb)	0.71	0.55	0.56	0.48	0.58
	standard deviation (lb)	0.33	0.27	0.30	0.19	0.28
	range (lb)	0.28–0.97	0.25–0.86	0.19–0.90	0.22–0.68	0.17–0.95
Sum of squares test returns a p-value of 0.99996 ( <i>F</i> = 0.0013) at <i>p</i> < .05. There are 9,999 in 10,000 chances that this result could be random; not statistically significant.						
Uncompromised Yields (n = 6)	lb per seed/plant	2.54	1.96	1.98	1.70	2.05
	standard deviation (lb)	1.16	0.97	1.08	0.66	0.98
	range (lb)	1.00–3.44	0.88–3.06	0.68–3.20	0.78–2.43	0.60–3.38
<b>Labor</b>						
Total Yields (n = 8)	average for season per ft <sup>2</sup> (min:sec)	3:11	2:26	2:10	2:57	4:47
	standard deviation (min:sec)	1:31	1:45	1:29	1:38	1:39
	standard deviation (min:sec)					
(n = 8)	average min per plant	11:21	8:39	7:42	10:30	16:59
	standard deviation (min:sec)	5:24	6:14	5:18	5:49	5:54
	range (min:sec)	3:58–20:49	1:42–18:53	2:16–18:53	4:15–21:04	10:00–29:46
(n = 8)	average per lb harvested (min:sec)	12:57	48:57	47:05	14:22	22:43
	standard deviation (min:sec)	22:24	21:44	35:36	17:30	3:12
	range (hr:min)	0:03–1:08	0:02–21:02	0:02–13:09	0:02–0:56	0:04–20:22
Uncompromised Yields	average for season per ft <sup>2</sup> (min:sec)	2:42	1:45	1:38	3:22	4:54
	standard deviation (min:sec)	1:13	0:32	0:37	1:55	2:11
	standard deviation (min:sec)	1:07–4:00	1:03–2:21	0:51–2:21	1:29–5:55	2:49–8:22
	average min per plant (min:sec)	10:42	6:13	5:49	11:59	17:26
	standard deviation (min:sec)	3:27	1:38	1:56	6:12	6:58
	range (min:sec)	4:30–14:15	3:45–8:22	3:00–8:22	5:15–21:04	13:30–29:46
	average per lb harvested (min:sec)	4:15	2:37	2:26	6:16	10:30
	standard deviation (min:sec)	1:12	0:20	0:21	2:37	7:33
	range (min:sec)	3:26–6:39	2:18–3:02	2:07–2:51	2:44–9:04	4:10–22:36

“Uncompromised Yields” were from the participants and plots that were not eaten by voles or flooded by water and represent the “best case” scenario, where as “Total Yields” may be closer to real-world growing because pests and water may cause an issue for any grower.

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