Extension
University of Missouri

Fingerling Potato (High Tunnel) Planning Budget

Using this budget, farmers can estimate the costs and returns for raising fingerling potatoes in a high tunnel. Table 1 presents estimates for Missouri based on price forecasts in October 2025. The budget assumes potatoes are grown in a 2,000-square-foot high tunnel with trickle irrigation and sold into retail markets. Capital investments and a sensitivity analysis are summarized in Tables 2 and 3. Use the "Your estimate" column to plan your high tunnel fingerling potato operation's costs and returns

Table 1. Missouri high tunnel fingerling potato budget for 2026.

	Unit	Quantity	Price per unit	Dollars per 2,000 square feet	Dollars per square foot	Your estimate
Income						
Fingerling potatoes	pound	965	3.00	2,895.00	1.45	
Total income				2,895.00	1.45	
Operating costs						
Seed	pound	115	3.50	402.50	0.20	
Soil test	each	1	15.00	15.00	0.01	
Fertilizer	ounce	128	0.08	10.24	0.01	
Insecticide	ounce	0				
Fungicide	ounce	0				
Herbicide	ounce	200	0.15	30.00	0.02	
Row cover	square foot	0				
Labor	hour	23	18.00	414.00	0.21	
Packaging	each	965	0.20	193.00	0.10	
Marketing	percent of sales		10.00	289.50	0.14	
Operating interest	percent		7.25	32.73	0.02	
Total operating costs				1,386.97	0.69	
Ownership costs						
High tunnel building use	month	4	147.08	588.30	0.29	
Total ownership costs				588.30	0.29	
Total costs				1,975.27	0.99	
Income over operating costs				**1,508.03**	**0.75**	
Income over total costs				**919.73**	**0.46**	

Note: Totals may not sum due to rounding.

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Table 2. Capital investments used in Missouri high tunnel fingerling potato budget.

Component	Labor (dollars)	Machinery (dollars)	Materials (dollars)	Total (dollars)	Useful life (years)	10-year cost (dollars)
Site evaluation and soil preparation	393.30	86.06	0.00	479.36	10	479.36
Trenching and laying water pipes	17.85	0.00	133.35	151.19	10	151.19
Inserting poles and setting posts	356.89	196.20	281.62	834.72	10	834.72
Assembling the frame	356.89	0.00	9,399.23	9,756.12	10	9,756.12
Treating and setting baseboards	118.96	0.00	159.53	278.50	10	278.50
End and sidewall installation	594.82	0.00	449.37	1,044.20	10	1,044.20
Pulling plastic	118.96	0.00	874.74	993.71	3	3,312.36
Channel lock installation	29.74	0.00	0.00	29.74	10	29.74
Shutter vents	0.00	0.00	816.07	816.07	10	816.07
Drip tape	18.00	0.00	40.02	58.02	3	193.40
Trellis purlin installation	178.45	0.00	295.09	473.54	10	473.54
Electrical	146.52	0.00	0.00	146.52	10	146.52
Miscellaneous hardware and tools	0.00	0.00	133.35	133.35	10	133.35
Total cost	**2,330.40**	**282.27**	**12,582.38**	**15,195.05**		**17,649.08**
Cost per square foot	**1.17**	**0.14**	**6.29**	**7.60**		**8.82**

Table 3 provides annual profitability expectations (returns over total costs) under varying yield and price scenarios in full production and holding all costs constant.

Table 3. Sensitivity analysis for Missouri high tunnel fingerling potato budget, income over total costs (dollars).

Percent change	Sale price per pound	Yield per 2,000 square feet (pounds)						
		676	772	869	965	1,062	1,158	1,255
15% less	2.55	–253	–7	239	485	732	978	1,224
10% less	2.70	–151	109	370	630	891	1,151	1,412
5% less	2.85	–50	225	500	775	1,050	1,325	1,600
Base level	3.00	51	341	630	920	1,209	1,499	1,788
5% more	3.15	153	457	761	1,064	1,368	1,672	1,976
10% more	3.30	254	572	891	1,209	1,528	1,846	2,165
15% more	3.45	355	688	1,021	1,354	1,687	2,020	2,353

The budget presented here aggregates costs for some inputs. Farmers can find additional details and customize this budget to match their own operation by using the Fingerling Potato High Tunnel Planning Budget workbook (XLSX) (extension.missouri.edu/media/wysiwyg/Extensiondata/Pro/AgBusinessPolicyExtension/Docs/ht-fingerlingpotato-budget.xlsx).

Check out the complete collection of Missouri crop and livestock enterprise budgets at muext.us/MissouriAgBudgets

Missouri 2025 trial report on producing fingerling potatoes in high tunnels

Issue

Potato planting is often delayed due to wet soil conditions in the spring resulting in reduced yields from too-warm soil temperatures during tuber formation.

Solution

Using a high tunnel can provide an optimal time frame to plant potatoes in the spring (Figure 1). A movable high tunnel can even further optimize the operation because, once established, the high tunnel can be moved. A 2000-square-foot high tunnel can produce about 1,000 pounds of fingerling potatoes. Open field planting showed lower yields than high tunnels by 80% in 2024 and 50% in 2025. The highest observed yields were inside a high tunnel.

Figure 1. Fingerling potatoes being grown in a high tunnel.

Planting date

The highest yields were observed in high tunnels when planting during the first week of March. Early to mid-March is optimum when soil temperatures are between 45 to 50 degrees F. High tunnel yields dropped an average of 53% when the planting date was delayed to mid-late March due to warm soil temperatures.

Producing a fall crop that is planted at the end of August or early September can produce an abundance of vines with declining tuber yields because soil temperature is still quite high (70 degrees F or above) and the day length becomes shorter. High tunnel fall planting showed a 71% average decrease in yield compared to the spring planting yields.

Variety selection

Our three-year results indicate that Amarosa, Austrian Cresent, Pinto Gold, and Red Thumb perform well in a high tunnel (Tables 4 and 5).

Table 4. Top-performing varieties in the high tunnel (all planted in early March).

	Yields (pounds per acre)	
Variety	**2024**	**2025**
Pinto Gold	26,260	Not tested
Red Thumb	25,763	12,831
Amarosa	18,684	12,227
Austrian Cresent	16,771	20,534

Note: 2023 results not shown due to high weed pressure in the trials.

Table 5. Top-performing varieties in the field when planted in the spring.

	Yields (pounds per acre)	
Variety	**2024**	**2025**
Austrian Cresent	5,388	8,293
Amarosa	4,023	9,044
Red Thumb	3,797	10,176
All Blue	Not tested	15,506
Laratta	Not tested	9,572

Note: 2023 results not shown due to high weed pressure in the trials.

Plant spacing

The trials were planted in beds that had two rows spaced 18 inches apart. The plants were spaced 8 inches apart within the rows. The beds were 30 inches apart from center to center.

Key considerations when planting fingerling potatoes

Fertilization

Follow soil test recommendations, but remember that fingerling potatoes are heavy feeders of potassium and nitrogen for both vine growth and potato yield.

Water

Water to keep the rows moist, but avoid overwatering, which will promote rotting of the tubers.

Figure 2. Fingerling potatoes ready for harvest.

Harvest

Fingerling potatoes will mature in 90 to 100 days from planting (Figure 2), so an early to mid-March planting will be ready for harvest in mid-June.

Key findings

- Planting inside the high tunnel in the first week of March resulted in the highest observed yields.
- High tunnel yields drop an average of 53% when delaying the planting to mid-late March.
- Yields in the field were on average 80% (2024) and 50% (2025) lower than yields in high tunnels.
- High tunnel fall planting showed a 71% average decrease in yield compared to the spring planting yields.

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