



# 2019 Blueberry Cost and Return Estimates

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## Summary

Blueberries offer good long-term profitability potential for Kentucky producers willing to invest the time, capital and management necessary for establishing productive blueberry acreage. Blueberries have the advantage of having lower establishment costs than other berry crops, especially those requiring trellis systems for production. Once established, properly managed blueberry bushes can produce for many years.

## Market Overview

Berries have been a superstar of the U.S. produce industry since the 1990s, and U.S. demand for all berries continues to be strong. Many Kentucky direct farm marketers have realized the potential for marketing high-value crops like berries at farmers markets, on-farm markets and direct to restaurants and groceries. There is also potential for Kentucky producers to tap into a wholesale market window for blueberries, with some premium fresh prices possible between the market window falling in between fresh production from Florida (April-May) and Michigan (late June-July). Kentucky blueberry producers in southern and western Kentucky, where blueberry harvest can start at the first of June, could potentially sell into this wholesale market window. Blueberries can also be easily frozen, and there have been some small-scale efforts in the state to explore local and regional markets for frozen product.



markets may vary considerably.) Farmers markets and on-farm stands have been profitable markets in many locations, especially near population centers. There is good potential for Kentucky producers wishing to wholesale to regional grocery chains, institutions and restaurants. Producers located near Kentucky's produce auctions have also investigated this market channel for blueberries. A conservative retail/wholesale price estimate is reflected in the blueberry profitability estimates in Table 1.

Blueberries are popular at Kentucky farmers markets, where prices around \$4 per pint were reported through 2018. (These are average prices, and local



Kentucky producers already engaging in on-farm marketing, such as orchards and roadside stands, have found Pick Your Own (PYO) blueberries to be a complementary, profitable crop to add to their

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existing market basket of crops. Blueberries can help on-farm marketers add an earlier “feature” crop, before brambles and tree fruits. Though PYO eliminates much of the harvest labor and expenses associated with harvest, marketers may also incur more risk due to on-farm liability concerns.



Two sets of budgets developed in 2008 were revised and updated for the 2014 and 2019 seasons: on-farm retail/wholesale and Pick Your Own (PYO). Establishment cost, full-production year return, and payback period are reported in Table 1. Tables 2 and 3 report the sensitivity of returns to varying price and yield combinations.

**Table 1. Estimated Blueberry Profitability For 1 Acre (8,500 pints in full production year)**

<b>System</b>	<b>Establishment Cost</b> (Cash Outlays Until Positive Cash Flows are Generated)	<b>Annual Return to Owner Land, Capital, and Management</b> (Full Fruiting Year)	<b>Payback Period</b>
Wholesale/Retail \$2.25/pt	\$8,454	\$8,754	6-7 Years
Pick Your Own 80% @ \$1.50/pt PYO 20% @ \$2.25/pt	\$7,328	\$7,864*	6-7 Years

\* PYO return assumes owner/operator supervision of PYO customers

**Table 2. Retail/Wholesale Blueberry Profitability at Varying Prices and Yields**  
\$/Acre Return to Owner Land, Capital, and Management — Full Production Year

Price/Pint	Yield (Pints)						
	7000	7500	8000	8500	9000	9500	10,000
\$1.25	391	629	866	1104	1341	1579	1816
\$1.50	1966	2316	2666	3016	3366	3716	4066
\$1.60	2596	2991	3386	3781	4176	4571	4966
\$1.75	3541	4004	4466	4929	5391	5854	6316
\$2.00	5116	5691	6266	6841	7416	7991	8566
\$2.15	6061	6704	7346	7989	8631	9274	9916
\$2.25	6691	7379	8066	8754	9441	10129	10816
\$2.50	8266	9066	9866	10666	11466	12266	13066
\$2.75	9841	10754	11666	12579	13491	14404	15316
\$3.00	11416	12441	13466	14491	15516	16541	17566
\$3.25	12991	14129	15266	16404	17541	18679	19816

**Table 3. Pick Your Own Blueberry Profitability at Varying Prices and Yields**  
**\$/Acre Return to Owner Land, Capital & Mgt. — Full Production Year**

Assumes 80% production goes to PYO, 20% to retail/wholesale

\$1.75/Pint Retail	Total Yield (Pints)						
PYO Price/Pint	7000	7500	8000	8500	9000	9500	10,000
\$1.00	2681	3134	3586	4039	4491	4944	5396
\$1.25	3941	4484	5026	5569	6111	6654	7196
\$1.50	5201	5834	6466	7099	7731	8364	8996
\$1.75	6461	7184	7906	8629	9351	10074	10796
\$2.00	7721	8534	9346	10159	10971	11784	12596
\$2.25	8981	9884	10786	11689	12591	13494	14396
\$2.25/Pint Retail							
PYO Price/Pint	7000	7500	8000	8500	9000	9500	10,000
\$1.00	3311	3809	4306	4804	5301	5799	6296
\$1.25	4571	5159	5746	6334	6921	7509	8096
\$1.50	5831	6509	7186	7864	8541	9219	9896
\$1.75	7091	7859	8626	9394	10161	10929	11696
\$2.00	8351	9209	10066	10924	11781	12639	13496
\$2.25	9611	10559	11506	12454	13401	14349	15296

### 2019 Kentucky Blueberry Costs and Returns Budget Assumptions

**Pre-Planting:** Standard cultural practices for cover crop establishment are followed. Assumes 650 pounds of sulfur is applied to lower soil pH.

**Planting:** University of Kentucky recommended cultural practices (fertilization, pesticides, cultivation, etc.) are followed in these budgets. Labor estimates were developed using data from current growers. Equipment costs (irrigation and machinery) are estimated using 2008 university standards and 2018 fuel costs.

Plant population is assumed at 605 plants per acre. This population is well-suited for PYO production; operations that wish to focus exclusively on wholesale production may desire to plant higher populations.

Sawdust mulch is assumed to be applied during the year of planting, then in the first fruiting year and every other year after that. This is reflected in the estab-

lishment cost budgets during the actual years of application, then is prorated at (1/2) of the materials and labor cost during full production years.

A trickle irrigation system is assumed installed during the planting year. Values are assigned for fixed and variable irrigation costs based on estimates of costs incurred by Kentucky producers. Irrigation costs can vary greatly according to water source and irrigation system.

**Pesticides:** Product application assumptions are based on UK recommendations and typical production settings. The 2019 budget update assumes two applications of fungicide for phytophthora annually for two years; soils where this is problematic may require applications throughout the life of the planting. Insecticide applications assume management of major pests, including plum curculio.

**Harvest:** Harvested berries are assumed to be sorted into 1-pt plastic clamshells. No cost is assigned for picking containers; purchase of these containers may need to occur in years three or four. A marketing expense of 10% of the gross sales is assumed. Cost for an adequate refrigeration system to hold berries is assumed on the basis of being utilized for 2 acres of berry crops, blueberries or otherwise.

**Labor:** Hired labor costs are assigned at \$12.50 per hour. Management, pesticide application, and other more specialized tasks are assigned an operator rate of \$15 per hour.

### **Fixed Costs – Pest Control**

A \$220 annualized cost for bird and wildlife control is assigned per acre of fruiting blueberries. This annualizes a total cost required at installation. The cost of bird netting and/or deer fencing can vary considerably based on materials used. The costs of bird netting, though requiring initial cash outlays, are usually quickly recouped from saleable berries protected for harvest.

### **Other Fixed Costs**

Fixed machinery costs were also calculated using recommended cultural practices and the Iowa State machinery cost generator. Blueberry production costs include a \$550 annual fixed cost for refrigeration (half of an estimated \$1,100 annual fixed cost for an 8'x8' refrigeration unit). Annual fixed irrigation cost was assumed at \$258; this may increase or decrease depending on equipment required to establish the trickle irrigation system.

*Further budget assumption details may be obtained by contacting Tim Woods at: [tim.woods@uky.edu](mailto:tim.woods@uky.edu)*

### **Suggested Citation:**

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*Photos courtesy of [Pixabay.com](http://Pixabay.com)*

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