COOPERATIVE EXTENSION SERVICE
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Blueberry Cost and Return Estimates

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Original Version October 2008

Summary
Blueberries are a crop with excellent 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 that require 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 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. Premium fresh prices can be obtained if Kentucky producers can capture 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 who can begin harvesting marketable blueberries in early June could potentially capture this wholesale market window. Blueberries can also be easily frozen; in the early 2010s, growers in South Central Kentucky started freezing blueberries in quantities great enough for small regional wholesale markets.

Blueberries are a popular crop at Kentucky farmers markets, and farmers markets and on-farm sales near urban areas have proved to be an exceptionally profitable marketing strategy for some Kentucky blueberry producers. There is good potential for Kentucky producers wishing to wholesale to regional grocery chains; blueberries can also be sold to local produce stands and to local restaurants. Producers located near Kentucky's produce auctions have also investigated this market channel for blueberries. Kentucky producers already engaging in on-farm marketing, such as orchards and roadside stands, have found Pick Your Own (PYO) blueberries to be a very complementary, profitable crop to add to their existing market basket of crops. Though PYO

eliminates much of the harvest labor and expenses associated with harvest, marketers incur more risk due to on-farm liability concerns. These risks are best identified during a personal visit with your insurance agent to determine what additional coverage you will need on your farm.

Two sets of budgets were developed in 2008 and revised and updated in the 2014 season: 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 (8500 pints in full production year)

System	**Establishment Cost** (Cash Outlays Until Positive Cash Flows are Generated)	**Annual Return to Owner Land, Capital, and Management** (Full Fruiting Year)	**Payback Period**
Wholesale/Retail $2.00/pt	$8,745	$8,286	7 Years
Pick Your Own 80% $1.50/pt PYO 20% @ $2.00/pt	$7,764	$8,561*	7 Years

* PYO return assumes owner/operator supervision of PYO customers

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

	Yield (Pints)						
Price/Pint	7000	7500	8000	8500	9000	9500	10,000
$1.00	(489)	(114)	261	636	1011	1386	1761
$1.25	1086	1573	2061	2549	3036	3523	4011
$1.50	2661	3261	3861	4461	5061	5661	6261
$1.60	3291	3936	4581	5226	5871	6516	7161
$1.75	4236	4948	5661	6373	7086	7798	8511
$2.00	5811	6636	7461	8286	9111	9936	10761
$2.15	6756	7648	8541	9433	10326	11218	12111
$2.25	7386	8323	9261	10198	11136	12073	13011
$2.50	8961	10011	11061	12111	13161	14211	15261
$2.75	10536	11699	12861	14023	15186	16348	17511
$3.00	12111	13386	14661	15936	17211	18486	19761

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

$1.50/Pint Retail	Total Yield (Pints)						
PYO Price/Pint	7000	7500	8000	8500	9000	9500	10,000
$1.00	3404	3848	4292	4736	5180	5624	6068
$1.25	4664	5198	5732	6266	6800	7334	7868
$1.50	5924	6548	7172	7796	8420	9044	9668
$1.75	7184	7898	8612	9326	10040	10754	11468
$2.00	8444	9248	10052	10856	11660	12464	13268
$2.25	9704	10598	11492	12386	13280	14174	15068
$2.00/Pint Retail							
PYO Price/Pint	7000	7500	8000	8500	9000	9500	10,000
$1.00	4034	4523	5012	5501	5990	6479	6968
$1.25	5294	5873	6452	7031	7610	8189	8768
$1.50	6554	7223	7892	8561	9230	9899	10568
$1.75	7814	8573	9332	10091	10850	11609	12368
$2.00	9074	9923	10772	11621	12470	13319	14168
$2.25	10334	11272	12212	13151	14090	15029	15968

2014 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 2014 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.

A trickle irrigation system is assumed beginning the year after planting. 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 2014 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.

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 3 or 4. 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 $9.00 per hour. Management, pesticide application, and other more specialized tasks are assigned a rate of $15.00 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 easily 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 the estimated $1100 annual fixed cost for an 8'x8' refrigeration unit). Annual fixed irrigation cost was assumed at $258; this may increase or decrease depending on type of irrigation system (trickle or overhead) utilized.

Further budget assumption details may be obtained by contacting Tim Woods at: tim.woods@uky.edu