

# Highbush Blueberries

## Introduction

The highbush blueberry (*Vaccinium corymbosum*) is a perennial shrub that will do well in most areas of Kentucky as long as the soil is properly adjusted. With proper care, blueberry plants may remain productive for 40 years or more.

## Marketing

Blueberries have been great sellers when offered at Kentucky's farmers markets or other direct markets. U-Pick is one of the most desirable ways to market blueberries in Kentucky because it eliminates considerable harvest labor expense. Other options include roadside stands, Community Supported Agriculture (CSA) subscriptions, and local groceries. Produce auctions present an additional marketing opportunity, especially for well-packaged berries.

## Market Outlook

Blueberries are increasing in popularity and are one of Kentucky's emerging small fruit crops. The identification of antioxidant properties in blueberry fruit, along with other health benefits, has helped increase consumer demand.

Nationally, fresh blueberry prices remain strong. Kentucky producers can realize well over the national average price by marketing fresh, high quality blueberries locally. Wholesale market prices are also favorable for producers willing to invest in the equipment needed to safely package, cool, and ship blueberries within the state; national wholesale markets are saturated.

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## Production Considerations

### *Cultivar selection*

Blueberry cultivars differ as to when they mature; however, they will normally supply ripe berries for a 2- to 3-week harvest period. By careful cultivar selection, a continuous supply of fresh berries can be produced throughout the fruiting season. Regardless, a minimum of two varieties are needed to assure cross pollination. Select cultivars that produce large, firm, light blue berries with good aroma and flavor. Other desirable characteristics include resistance to cracking and good keeping quality. Consult the University of Kentucky (UK) publication *Growing Highbush Blueberries in Kentucky* and/or your county Extension agent for recommended cultivars.

### *Site selection and planting*

Commercial blueberry production should be considered only if large amounts of organic mulching material are available. Blueberries thrive in a highly organic, well-drained soil with a pH of 4.5 to 5.2. While most Kentucky soils

do not meet these requirements, sites that have less than 2,500 pounds of calcium per acre can be amended to provide an environment suitable for planting. Blueberries should be planted on a slightly raised bed to improve soil drainage in heavier soils.

Two-year-old virus-free plants, either bare-rooted or potted, should be planted in late fall once plants are dormant, or early in spring before growth starts. Planting rows in a north-south orientation is preferred. Apply organic mulch (such as sawdust or wood chips) after planting. It takes 3 to 4 years for plants to become fully established.

As previously mentioned, at least two cultivars should be planted for cross pollination. Honeybees must be relied upon to aid pollination and two hives per acre are recommended. No cultivar should be separated by more than two rows from a cultivar with a similar bloom or fruit maturity period.

#### *Pruning and maintenance*

On sites where plants are growing well, commercial growers will maintain bushes at a maximum height of 6 feet for ease of harvest. Annual pruning, which may be done from February to bud break in the spring, is necessary to help establish and develop vigorous plants, as well as increase fruit size. Pruning is also essential for removing dead and diseased canes.

While blueberries can be grown without irrigation, UK tests show that irrigation more than doubles blueberry yields. Consequently, commercial production is not recommended without irrigation. Soil moisture needs to be closely monitored when trickle irrigation is used so that the soil is kept damp, but not wet.

#### *Pest management*

Few diseases or insect pests have been reported on blueberries in Kentucky, generally making preventative sprays unnecessary, or minimal. Twig blights and stem cankers can cause some

losses, especially if allowed to spread into larger branches and the crown. Phytophthora root rot may be a problem for plants grown in heavy clay soils. Berry diseases include anthracnose and mummy berry. Iron chlorosis commonly occurs on sites with a pH level above 5.2. Insect pests include Japanese beetles, bagworms, and plum curculio.

The most serious blueberry pest is birds, particularly in small plantings. Visual and auditory repellents have been used with varying success. The most effective method of protecting plants from birds is to cover bushes with netting just before berries begin to color and then removing it after harvest is complete. Other wildlife pests can include voles, rabbits, and deer.

#### *Harvest and storage*

Blueberries should be allowed to ripen to a uniform blue color on the plant before handpicking. Fruit flavor and sugar content will not improve after harvest. Berries need to be picked at least once per week during the harvest period, beginning in early to mid-June and ending in early August. Blueberries can remain on the plant for up to 10 days without a loss in quality. Freshly harvested berries may be stored for up to 2 weeks with proper refrigeration.

#### *Labor requirements*

Production labor needs per acre for a mature planting are about 320 to 360 hours for a farm retail operation. Ten to 15 pickers are needed per acre for hand harvesting. U-Pick farms will require approximately 20 to 100 hours per acre in labor, depending on how much management is involved while visitors are on the farm. Illinois data indicates that it takes roughly 450 U-Pick customers to harvest an acre of blueberries, with the average customer picking 11.7 pounds of berries (about 15 pints).

### **Economic Considerations**

The major investments in establishing blueberries include the cost of plants, labor required for plant establishment, and installation of an irrigation

system. Producers who choose to sell their blueberries at retail or wholesale markets will also incur a significant expense in purchasing a cooler.

While the initial investment may be large, blueberry plants, with proper care, will remain productive for as long as 40 to 50 years. Because it takes 3 years for plants to become established, blueberries will not begin to generate economic returns toward their establishment cost until the fourth season. Five-year establishment costs per acre are estimated at \$5,000 to \$8,300 (farm retail) and \$5,000 to \$7,700 (U-Pick) for 2010. The payback period is 6 years after planting for farm retail and 5 years after planting for U-Pick. Annual returns to owner capital and management for an established planting are \$4,500 to \$6,800 per acre for farm retail and \$7,500 to \$10,000 per acre for U-Pick.

### **Selected Resources**

- Blueberry Cost and Return Estimates Summary (University of Kentucky, 2008)  
<http://www.uky.edu/Ag/cdbrec/blueberrysummary.pdf>
- Highbush Blueberry Production Budgets – Wholesale/Retail Marketing (University of Kentucky, 2008)  
<http://www.uky.edu/Ag/cdbrec/blueberrybudget.pdf>
- Highbush Blueberry Production Budgets – Pick Your Own Marketing (University of Kentucky, 2008)  
<http://www.uky.edu/Ag/cdbrec/blueberrypy.pdf>
- Growing Highbush Blueberries in Kentucky, HO-60 (University of Kentucky, 2009)  
<http://www.ca.uky.edu/agc/pubs/ho/ho60/ho60.htm>
- Marketing Highbush Blueberries in Kentucky (University of Kentucky, 2004)  
[http://www.uky.edu/Ag/AgEcon/pubs/ext\\_aec/ext2004-01.pdf](http://www.uky.edu/Ag/AgEcon/pubs/ext_aec/ext2004-01.pdf)
- Midwest Small Fruit and Grape Spray Guide, ID-94 (Midwest Fruit Workers Group, 2011)  
<http://www.hort.purdue.edu/hort/ext/sfg/>
- Blueberries: Organic Production (ATTRA, 2004)  
<https://attra.ncat.org/attra-pub/summaries/summary.php?pub=14>
- Blueberry Production (Cornell University)  
<http://www.fruit.cornell.edu/berry/production/blueberryproduction.htm>
- Growing Blueberries (Michigan State University)  
<http://www.blueberries.msu.edu/GrowingBlueBerries.html>
- Midwest Small Fruit Pest Management Handbook, B-861 (Ohio State University, 2004)  
<http://ohioline.osu.edu/b861/index.html>
- Production Guide for Organic Blueberries (Cornell University, 2010) 2.2 MB file  
[http://nysipm.cornell.edu/organic\\_guide/blueberry.pdf](http://nysipm.cornell.edu/organic_guide/blueberry.pdf)
- Southern Region Small Fruit Consortium: Blueberries (Clemson University, North Carolina State University, Virginia Tech, University of Arkansas, University of Georgia, University of Tennessee)  
<http://www.smallfruits.org/Blueberries/index.htm>
- Southeast Regional Blueberry Integrated Management Guide (Southern Region Small Fruit Consortium, 2010)  
[http://www.smallfruits.org/SmallFruitsRegGuide/Guides/2010/2\\_19\\_10BlueberrySprayGuide.pdf](http://www.smallfruits.org/SmallFruitsRegGuide/Guides/2010/2_19_10BlueberrySprayGuide.pdf)

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*Reviewed by John Strang, Extension Specialist (Issued 2002, Revised 2006, Revised 2010)  
Photos by John Strang, University of Kentucky (blueberry fruit)  
and Scott Bauer, USDA (blueberry blossoms)*

**April 2010**

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For additional information, contact your local [County Extension](#) agent