

# Blueberry

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*Vaccinium corymbodum* (highbush blueberry) *Vaaccinium angustifolium* (lowbush blueberry) (Ericaceae)

## Fast Facts:

Acres in Washington: 4,100
Percent of U.S. Acreage: 10%
Per Acre Value: \$10,576 in 2008
Number of growers: 135
Value of Production in Washington: \$43,362,000
Percent of U.S. Production: 10.5%

*Blueberries are the 23<sup>rd</sup> most valuable commodity in the state*

## Description of crop:

Blueberries are perennial, long-lived deciduous woody plants that produce highly nutritious berries in clusters. One to two year old plants are hand-planted in pre-fumigated, well prepared flat or raised beds set at 10 to 11 feet between rows, with plants 30 to 48 inches apart in the row. They commonly reach peak production in 6 to 8 years and can continue production for up to 50 years. Their shrub growth habit is shallow rooted with a fibrous root system that lacks root hairs. A mycorrhizal fungi association in the root zone is essential for optimal plant growth and nutrient uptake. For optimal berry production, blueberries are grown in soils of pH range 4.5 to 5.5 that are porous, well drained, and mulched over to help maintain a cool root zone and suppress weeds. Irrigation is necessary for best production and vigorous growth with overhead sprinklers is widely used while drip systems are more common in newer plantings. Various species of blueberries are grown commercially but the most common is highbush blueberries in Washington. Cultivars of blueberries are classified as early-season, mid-season, or late-season varieties; each requiring 130 to 160 degree days for fruit ripening. Early-season cultivars begin fruiting in late June with harvest extending to October for late-season cultivars. Typically the harvest period ranges over a three to five week period. Duke is the most widely planted cultivar with Bluecrop, Earliblue, Rubel, Briggita, Bluejay, Jersey, Ricca, and Elliot being other common cultivars. Some cultivars can grow up to 10 feet high and dormant pruning is necessary to maintain plant vigor and berry production. Although blueberries are self-fertile, bees are used to maximize cross pollination. This optimizes fruit set and early ripening. The majority of blueberries are mechanically harvested for processing by shaking the fruit onto conveyor belts. Multiple harvests are necessary as the fruit ripens within berry clusters at varying rates. Fresh market production is mostly hand-picked three to four times during harvest as berries ripen. Bird feeding during harvest can become the greatest economic loss of berries from damage and consumption.

Production in Washington is rapidly increasing.

**Key pests:**

Garden symphylans and root weevils (strawberry weevil, rough strawberry weevil, black vine weevil, woods weevil, and obscure weevil) can become key pest on younger plants with less developed root systems. The presence of aphids and nematodes can pose two risks: direct feeding damage and vectors of viruses. Aphids transmit blueberry scorch carlavirus (BBScV) and the dagger nematodes (*Xiphinema* spp.) transmit tomato ringspot virus. Other insect pests can include leafrollers, and spanworms. Newly established plantings can be highly susceptible to *Phytophthora* root rot. Anthracnose (*Colletotrichum* spp.) is a disease that needs to be treated at bloom even though it is not expressed until berries ripen and after harvest. Bacterial canker and godronia canker may appear during early active vegetative growth. Botrytis fruit rot and mummy berry can appear during harvest. Blueberry fruit drop, Blueberry Scorch Virus (BBScV) and Blueberry Shock Virus (BLSHV) are also pest diseases. Weed infestations can become troublesome if a cover crop is not maintained. Perennials weeds such as thistle and quackgrass and annual weeds such as groundsel, pigweeds, and chickweed all can easily reach high populations if not treated.

**Key pesticides:**

Preplant treatment of fumigants is recommended for control of weeds, and soil inhabiting insects, nematodes and root diseases. Establishment of a cover crop that harbors beneficial insects and suppresses weeds is recommended. Dormant applications of diuron, Princep, Casoron, and Surflan can be effective pre-emergent herbicides with Roundup used for spot treatments of weeds. A mulch layer within plant rows not only helps keep the soil cool but also can suppress weeds. Garden symphylans, root weevils, wireworms, craneflies, and nematodes can be controlled with proper fumigation. Symphylans are controlled with Telone 11 and Vapam. Weevils are controlled with Asana and Actara. The green peach aphid and blueberry gall midge are foliar insect pests that can be treatable if determined to reach threshold levels. They can be controlled with Admire and Actara. Winter moth/spanworm feed on emerging buds in spring and can reach serious enough infestation levels if not controlled. They are controlled with Asana and Confirm. Leafrollers are suppressed by natural predators and parasitoids but may also require treatment. Effective treatments include products hazardous to bees like Sevin, diazinon, Imidan, malathion, Lannate, and Intrepid or products safer to beneficials like Bt's, Success, Provado, and azadirachtin. Check for availability of pheromones for key pests as well. Anthracnose, bacterial canker, Botrytis, and mummyberry (*Monolinia* spp.) are key diseases. Indar and Serenade are newly registered fungicides critical for use against mummyberry. It is also controlled with Abound, Bravo, and Echo. Copper and sulfur compounds can help provide disease protection. *Phytophthora* root rot is controlled with Aliette, and Ridomil. Bacterial canker is controlled with Bordeaux mix and Serenade. Godronia canker is controlled with Captan although no fungicides are currently registered for it. Blueberry Scorch Virus (BBScV) is aphid vectored so aphid controls should be used.

**Expert contacts:** Anderson, Dorothy. Personal communication July 7, 2006

DeFrancesco, Joe. 2004 Pest Management Strategic Plan for Oregon and Washington Blueberries

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**Sources:**

NASS Agricultural Statistics Board, USDA

Pest Management Strategic Plan, Caneberry Production in Washington and Oregon, July 2003

WA State Dept. of Agriculture Blueberry Crop Summary Report July 2006

**Location**

**of production:** Whatcom, Skagit, Walla Walla, Snohomish, Yakima, King, Pierce, Thurston, Grays Harbor, Lewis, Cowlitz, Clark, Benton, Franklin counties





Blueberry Harvest - Skagit County

# Blueberry Production in Washington State



Counties Producing Blueberries\* (ranked by acres in production)

- 1,200 acres or less
- 200 acres or less
- 100 acres or less

\* Includes only those counties with significant crop acres. The crop may also be produced in counties not highlighted on the map.



Deborah Bahs - April 2007

