



# Raspberries

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## Introduction

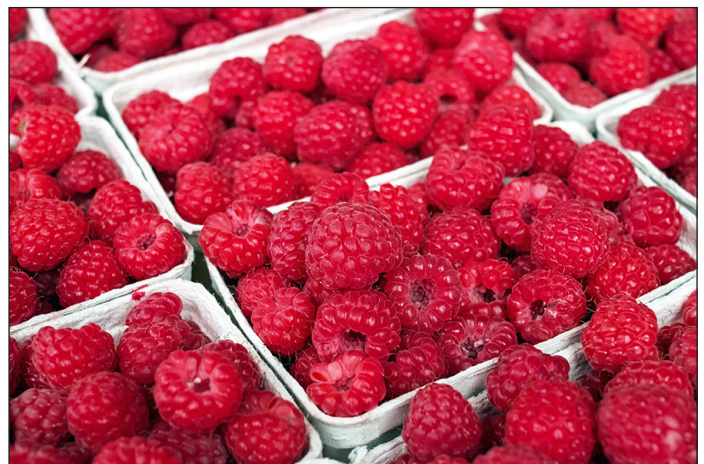
Raspberries (*Rubus* spp.) are included in the group of small fruits generally referred to as ‘brambles’ or ‘caneberries.’ They have perennial crowns and roots that produce biennial canes. The canes bear fruit the second year and then die naturally after harvest. Some raspberries (known as ‘everbearing’ or ‘fall-bearing’) also produce fruit at the tips of the first-year canes.

## Marketing

Raspberries in Kentucky have been traditionally sold on the farm as U-Pick. Sales increased through local fresh markets like farmers markets, roadside stands, community supported agriculture (CSA) shares and restaurants. There are some wholesale raspberry markets to grocery retailers in Kentucky. Smaller growers can investigate selling raspberries wholesale at Kentucky’s produce auctions, which report strong prices for fresh berry sales.

## Market Outlook

Raspberry sales and consumption have increased as U.S. food retailers have expanded berry sourcing networks. Improvements in handling, and berries sourced from Mexico, have particularly helped extend the traditional U.S. retail raspberry season. There is also continued demand for high quality, locally produced berries, and producers located near population centers will have an advantage in building the local market niche. Raspberry fruits do not store or ship well, which limits the market area, and this may increase the demand for local, quality fruit. Value-added raspberry products (preserves and baked goods) are popular with consumers and can be a way to increase the profitability of the



farm berry enterprise and extend raspberry cash flows to the off-season.

## Production considerations

### *Types and cultivar selection*

June-bearing red, purple and black raspberries can be successfully grown commercially in Kentucky. Everbearing raspberries are no longer recommended because of the extensive spray program required for spotted wing drosophila (SWD) control. Raspberry cultivars can vary in terms of cold hardiness, yield potential, length of time to ripening, as well as sensitivity to disease and insect problems. Fruit firmness, size, flavor, and shape can also differ between cultivars. Growers should select marketable cultivars adapted to their locale.

### *Site selection and planting*

The site should be selected the year before planting to allow time for adequate preparation. A well-drained, deep fertile soil, high in humus and free from hard pans is best for raspberries.



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When possible, plant brambles on a north-facing slope or where there is afternoon shade, but avoid extremely windy sites. Raspberries should not follow solanaceous crops (such as tomatoes, peppers, and tobacco), strawberries, or other bramble crops for three to four years. Irrigation is essential for commercial production, and beehives are needed to ensure adequate pollination for larger plantings.

Growers are encouraged to establish plantings from certified, virus-free nursery stock. The distance between plants and between rows varies depending on the type of raspberry grown, training method, and the size of farm equipment. Raspberries are a high maintenance crop, requiring regular pruning and training to ensure maximum fruit production. Red raspberries are trained in the hedgerow system without a trellis or with a low trellis. Black and purple raspberries require a low trellis, which should be constructed either before planting or during the first season. With proper care and favorable growing conditions, a raspberry planting may produce for eight to 12 years.

#### *Pest management*

Common disease problems include anthracnose, cane and spur blight, crown gall, *Phytophthora* root and crown rot, fruit rots, and orange rust on black raspberries. Disease management begins with selecting resistant or less susceptible cultivars, planting disease-free stock, and proper site selection. Brambles infected with orange rust should be completely eradicated, roots and all. Timely harvests that minimize the number of overripe berries on canes, along with encouraging good air circulation, can help lessen the incidence of fruit rots. Fungicide applications may be necessary to manage some diseases.

Mites, cane borer, aphids, and Japanese beetles can cause damage in raspberry plantings. The spotted wing drosophila is a relatively new fruit fly that can seriously impact raspberry production. Female SWD fruit flies are able to lay eggs in otherwise undamaged fruit while it is on the plant. Eggs hatch and the fruit quickly deteriorates in just a few days. Raspberries are at the top of the preferred list for this pest, and a weekly spray program is necessary once this pest is identified, normally in early to mid-July, and fruit begin coloring up. Thus Kentucky growers are discouraged from producing fall-bearing raspberries.

Scouting to monitor populations can help the grower determine when and how often insecticides should be applied. Pruning out weak canes and removing nearby wild bramble thickets are also critical aspects of both insect and disease management.

Good weed control is very important and can be accomplished with cultivation, mulching, and/or herbicides.

#### *Harvest and storage*

The first significant harvest occurs the third year for June-bearing red raspberries and the second year for everbearing raspberries. Ripe berries should be picked regularly at least twice per week, but more often at the peak of the season and under hot, rainy conditions. Berries are placed directly into the marketing container as they are picked. Cooling within a half-hour of harvest is recommended.

#### *Labor requirements*

Production and labor needs vary depending on the age of the planting and the type of raspberry being grown. Pennsylvania State University's estimated per acre labor needs for production are as follows: land preparation (4 hours), establishment (51 hours), production Year 1 (30 hours), production Year 2 to maturity (80 to 85 hours). Harvest will require 300 to 500 hours per acre. U-Pick operations will generally need approximately 300 customers to harvest an acre of red raspberries.

### **Economic considerations**

There is considerable startup cost, demanding management, and a time lapse of one to two years after establishment before a raspberry crop can be harvested. Initial investments include land preparation, purchase of plants, plant establishment, and installation of an irrigation system. In addition, a trellis system may be needed, especially for black and purple raspberries. The cost of a cooler, which is essential to berry production, should also be included.

Total establishment costs for conventional raspberries are estimated at \$11,350 per acre, including trellising and trickle irrigation. Price, pest control expense, yields and marketing costs create a large net return range for raspberries. Average returns to land and management by Year 4, including all labor costs, are estimated between \$3,000 to \$4,000 and can range

from \$1,500 to \$7,500 per acre for mature raspberries (2016). Raspberry establishment costs will usually be recouped in three to four years, with Pick Your Own marketing usually generating a shorter payback period. Well-managed U-Pick marketing has the potential to add \$0.50 to \$1 per pint to raspberry profitability.

## Selected Resources

- Growing Blackberries and Raspberries in Kentucky, HO-15 (University of Kentucky, 2005) <http://www.ca.uky.edu/agc/pubs/ho/ho15/ho15.pdf>
- Midwest Fruit Pest Management Guide ID-232 (University of Kentucky et al., 2017) [https://ag.purdue.edu/hla/Hort/Pages/sfg\\_sprayguide.aspx](https://ag.purdue.edu/hla/Hort/Pages/sfg_sprayguide.aspx)
- Midwest Small Fruit Pest Management Handbook, B-861 (University of Kentucky et al., 2004) 73 MB file [http://plantpathology.ca.uky.edu/files/mw\\_sm\\_fruit\\_pest\\_mngmt.pdf](http://plantpathology.ca.uky.edu/files/mw_sm_fruit_pest_mngmt.pdf)
- Blackberry and Raspberry Growers Information Portal (North Carolina State University) <https://rubus.ces.ncsu.edu/>
- Berries (Cornell University) <http://www.fruit.cornell.edu/berry/index.htm>
- North American Raspberry and Blackberry Association <http://www.raspberrylblackberry.com/>
- Organic Culture of Bramble Fruits (ATTRA, 2003) <https://attra.ncat.org/attra-pub/summaries/summary.php?pub=15>
- Raspberries (AgMRC, 2015) [http://www.agmrc.org/commodities\\_products/fruits/raspberries/](http://www.agmrc.org/commodities_products/fruits/raspberries/)
- Spotted Wing Drosophila Management, ENTFACT-230, (University of Kentucky, 2014) <https://entomology.ca.uky.edu/ef230>

- Spotted Wing Drosophila, Biology, Identification & Monitoring, ENTFACT-229 (University of Kentucky, 2014) <https://entomology.ca.uky.edu/ef229>
- Spotted Wing Drosophila and Backyard Small Fruit Production, ENTFACT-231 (University of Kentucky, 2014) <https://entomology.ca.uky.edu/ef231>
- Spotted Wing Drosophila: A new pest in Ohio's fruit crops (Ohio State University, 2013) [https://u.osu.edu/pestmanagement/files/2014/12/SWD\\_Ohio\\_handoutV14-1dmqcv7.pdf](https://u.osu.edu/pestmanagement/files/2014/12/SWD_Ohio_handoutV14-1dmqcv7.pdf)
- Southern Region Small Fruit Consortium (Clemson University, North Carolina State University, Virginia Tech, University of Arkansas, University of Georgia, University of Tennessee) <http://www.smallfruits.org/>
- Southeast Regional Caneberries Integrated Management Guide (Southern Region Small Fruit Consortium, 2010) [http://www.smallfruits.org/SmallFruitsRegGuide/Guides/2010/2010%20Bramble%20Spray%20Guide%20New%20Trial%20Version%202\\_10\\_10.pdf](http://www.smallfruits.org/SmallFruitsRegGuide/Guides/2010/2010%20Bramble%20Spray%20Guide%20New%20Trial%20Version%202_10_10.pdf)
- Southeast Regional Bramble Production Guide (Southern Region Small Fruit Consortium. 2008) <http://www.smallfruits.org/SmallFruitsRegGuide/Guides/2008/08BrambleguideMay22.pdf>

## Books in print

- Raspberry and Blackberry Production Guide for the Northeast, Midwest, and Eastern Canada. Lori Bushway, Marvin Pritts, and David Handley, editors. 2008. Plant and Life Sciences Publishing. 157 pp. Ordering information: [http://palspublishing.cals.cornell.edu/nra\\_order.taf?\\_function=detail&pr\\_id=171](http://palspublishing.cals.cornell.edu/nra_order.taf?_function=detail&pr_id=171)

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*Reviewed by John Strang, UK Extension Specialist*

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