



# 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. Typically canes bear fruit the second year and then die naturally after fruiting. Some raspberries (known as ‘everbearing’, ‘fall-bearing,’ or ‘primocane-bearing’) also produce fruit at the tips of the first-year canes.

## Marketing

Raspberries are primarily sold at farmers markets and roadside stands. Some are sold to restaurants, via community supported agriculture (CSA) shares, and through U-pick operations. There are some raspberries marketed wholesale to grocery retailers in Kentucky. Smaller wholesale volumes could be sold at Kentucky’s produce auctions, which report strong prices for fresh berry sales.

## Market Outlook

Raspberry sales have increased as U.S. food retailers have expanded berry sourcing networks, and with the emphasis on healthy eating. Improvements in handling, and berries sourced from Mexico, have extended the traditional U.S. retail raspberry season. Compared to other fruit, raspberries do not store or ship well, so there is a demand for high quality, locally produced berries. Producers located near population centers will have an advantage in building the local market niche, and raspberries may bring a price premium in direct marketing as they are less commonly grown than other berry crops. Value-added raspberry products (preserves and baked goods) are popular with consumers and can be a way to in-



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

## Production Considerations

### *Types and cultivar selection*

Early-season red, purple and black raspberries can be successfully grown commercially in Kentucky. Everbearing raspberries and yellow raspberries, which fruit later in the year, are no longer recommended because of the extensive spray program required for spotted wing drosophila (SWD) and the difficulty of achieving 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 Kentucky.

### *Site selection and planting*

The site should be selected the year before planting to allow time for adequate plant bed preparation. Raspberries should not follow solanaceous crops (such as tomatoes, peppers and tobacco),



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strawberries, or other bramble crops for three to four years because of potential disease and insect issues. A well-drained, fertile soil, relatively high in organic matter and free from hardpans is best for raspberries. When possible, plant brambles on a north-facing slope or where there is afternoon shade, but avoid extremely windy sites. Irrigation is essential for commercial production and beehives are strongly recommended to ensure adequate pollination for larger plantings.

Growers should use certified, virus-free nursery stock to establish plantings. 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 annual 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 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. Black raspberries infected with orange rust should be completely eradicated, roots and all. Twice-weekly harvests that minimize the number of overripe berries, along with encouraging good air circulation and open pruning can help lessen the incidence of fruit rots and SWD infestation. Fungicide applications may be necessary to manage some diseases.

Mites, cane borer, aphids, and Japanese beetles can damage raspberry plantings. SWD, an Asian fruit fly that is relatively new to Kentucky, can seriously reduce raspberry production. Unlike native fruit flies, the female SWD are able to lay eggs in otherwise undamaged fruit on the plant. Eggs hatch and the fruit deteriorates in just a few days. Raspberries are near the top of the preferred list for this pest and a weekly spray program is necessary once SWD is identified, normally in early to mid-July, as fruit begin coloring up. Kentucky growers are discouraged from produc-

ing 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 and other host plants are also critical aspects of both insect and disease management.

Good weed control is critical. Because raspberries are perennial plants, it is very important to remove any perennial weed problems before planting. Cultivation is not possible once the planting is in place. Weed management in red raspberries must be done with mulching and herbicides. Black and purple raspberries do not form a hedge from suckers like red raspberries, but just grow from a central crown, and it is possible to also use landscape fabric as a weed management tool in these plants.

#### *Harvest and storage*

The first significant harvest occurs the third year for June-bearing raspberries. Ripe berries should be picked regularly at least twice per week, but more often at the peak of the season and under wet conditions. Berries are picked early in the day to avoid heating and placed directly into the ½-pint marketing container as they are picked. Cooling within a half hour of harvest is recommended.

#### *Labor requirements*

Production and labor needs vary depending on planting age and the type of raspberry. Pennsylvania State University's estimated per-acre labor needs are as follows: land preparation (4 hours), establishment (51 hours), production year-1 (30 hours), and 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 the first raspberry crop can be harvested. Initial investments include land preparation, purchase of plants, plant establishment, and installation of an irrigation system. A simple trellis system will 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 \$11,730 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 very dependent on selling price. Returns were estimated between \$3,000 to \$4,000, with a likely range of \$1,500 to \$7,500 per acre, for mature raspberries (2019). Raspberry establishment costs are likely recouped in three to four years, with Pick Your Own marketing usually generating a shorter payback period. Higher returns on a per unit basis are likely from well-managed U-Pick enterprises.

### 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., 2019-2020) [https://ag.purdue.edu/hla/Hort/Pages/sfg\\_sprayguide.aspx](https://ag.purdue.edu/hla/Hort/Pages/sfg_sprayguide.aspx)
- Blackberry and Raspberry Growers Information Portal (North Carolina State University) <https://rubus.ces.ncsu.edu/>
- North American Raspberry & Blackberry Association <http://www.raspberrylblackberry.com/>
- Brambles: Organic Production (ATTRA, 2017) <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, 2019) <https://entomology.ca.uky.edu/ef230>

- Spotted Wing Drosophila, Biology, Identification & Monitoring, ENTFACT-229 (University of Kentucky, 2019) <https://entomology.ca.uky.edu/ef229>
- Spotted Wing Drosophila and Backyard Small Fruit Production, ENTFACT-231 (University of Kentucky, 2019) <https://entomology.ca.uky.edu/ef231>
- 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/>
- 2019 Southeast Regional Caneberries Integrated Management Guide (Southern Region Small Fruit Consortium) <https://smallfruits.org/files/2019/06/Caneberry-Spray-Guide.pdf>
- Southeast Regional Caneberry Production Guide (Southern Region Small Fruit Consortium. 2016) [https://smallfruits.org/files/2019/06/AG-697\\_2016SoutheasternCaneberryProduction\\_Press.pdf](https://smallfruits.org/files/2019/06/AG-697_2016SoutheasternCaneberryProduction_Press.pdf)

### Books in print

- Raspberry & 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: <https://www.cornellstore.com/PALS-Raspberry-and-Blackberry-Production-NRAES-35>

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