



Peaches

Cheryl Kaiser¹ and Matt Ernst²

Introduction

The peach (*Prunus persica*), which originated in China, is a member of the rose family. In the past, commercial peach production in Kentucky has been profitable only in western counties, in southern counties, and in areas along the Ohio River. However, over the past 15 years as winters have become warmer, peach growers are also doing well in areas west of the mountains, as long as good sites that avoid late spring frosts are selected.

Peaches and nectarines are often considered separately, but nectarines are essentially peaches without the fuzzy skins. Their smooth skin and red blush makes them attractive to consumers, but also more difficult to grow. Nectarines are more susceptible to bruising and insect and disease problems. Consequently, nectarine production is minimal in Kentucky.

Marketing

Growers should determine possible markets before planting. Most Kentucky peaches are sold to local customers at fresh market outlets, especially farmers markets, on-farm markets and roadside stands. Some peaches are sold by U-Pick or CSA-style, through direct deliveries to customers. Local grocers may feature Kentucky peaches, and some wholesale peaches move through Kentucky's produce auctions. Producers can also investigate wholesaling to restaurants. Peaches are popular in value-added products such as ice cream, baked goods and preserves.

Market Outlook

Per capita peach consumption (processed and fresh) has declined since the 1990s, from about 10 pounds per person



in 1997 to 5.9 pounds in 2016. Fresh peach consumption was about 3 pounds per person from 2013 to 2016, and fluctuated between 4 and 5 pounds per capita during the 2000s. Late freezes and other weather challenges in California and the Southeast created far fewer fresh peaches available in the U.S. from 2012 to 2017. Lower production in these states strengthens grower prices but results in less peach consumption nationally. Fresh, local peaches remain very popular as a summer fruit choice.

Kentucky consumes more peaches than it produces, thus providing opportunities for additional peach production within the state. Peach acreage in Kentucky declined from 800 acres in 1992 to about 500 acres



in 2012. The 2012 Ag Census indicated some increase in peach plantings, which may indicate ongoing demand for high quality locally produced commercial peaches in the Commonwealth.

¹Cheryl Kaiser is a former Extension Associate with the Center for Crop Diversification.

²Matt Ernst is an independent contractor with the Center for Crop Diversification.

Production Considerations

Cultivar selection

Selecting hardy bacterial spot resistant cultivars that produce quality fruit, perform reliably, and meet the market demands is a critical step in establishing a peach planting. Peaches are grouped as either freestone (the flesh easily separates from the pit) or clingstone (the flesh clings to the pit). Cultivars differ in such horticultural traits as fruit (e.g. size, color, flavor and skin fuzziness), disease resistance, days to harvest, and required chilling hours. Many consumers prefer a high quality, flavorful freestone peach that is relatively fuzz-free. Peach planting stock is produced commercially by budding or grafting a desired cultivar onto a seedling rootstock. University of Kentucky trials through 2018 indicated that the industry standard peach rootstock cultivars continued to perform well compared to newer rootstocks. Several University of Kentucky resources can be consulted for information on the cultivars best suited for your locale and market. These resources include personnel (horticulture specialists and county extension agents) and publications (Peach Cultivar Performance, HO-06 and annual Fruit and Vegetable Crop Research Reports).

Site selection, planting and maintenance

Selection of the orchard site is probably the most important single factor in peach production. Even in areas of the state generally recommended for peach production, the site must be chosen very carefully. The orchard should be considerably higher than surrounding areas, with good slopes suitable for air drainage. A gentle slope is ideal; however, if the site is terraced, a steeper slope can be used. Slopes should preferably face east, southeast or northeast. Avoid protected areas, such as near wood lots, since these obstruct airflow and allow frost pockets to form. Peaches do well on a wide variety of soil types; however, they will not tolerate heavy, poorly drained soils. Planting trees on raised beds or ridges substantially increases performance because of improved soil drainage. Installing field tile between every other row will also improve drainage, but is more expensive than forming raised beds. It is generally thought that sandy soils and other lighter soil types are best.

Commercial quantities of peach planting stock need to be ordered 12 to 24 months in advance of planting, specifying the desired delivery date. Peaches are best planted in the early spring. Equipment size and ulti-

mate desired tree size are factors to consider in tree spacing. In-row and between-row spacing for open center trained trees ranges from 16 to 24 feet and 20 to 28 feet, respectively.

Annual pruning should be done in late spring, preferably during or after bloom, depending on the number of trees that have to be pruned. Pruning is used to develop and maintain tree size and shape. Pruning also opens the canopy for greater air movement and more effective pesticide coverage. Because trees set many more fruits than can be matured to a desirable size, peaches are substantially thinned. In a normal year without freeze or frost losses, approximately 90 to 95 percent of the fruit is removed during pruning and thinning. Thinning is generally done by hand soon after fruit set.

Pest management

Phytophthora root rot and cold injury can cause serious losses in Kentucky. Following sound management practices is essential to minimizing these problems. Brown rot, bacterial spot, peach leaf curl, peach scab and perennial canker can also cause losses. Insect pests include San Jose scale, oriental fruit moth, plum curculio, spotted wing drosophila and borers. An extensive regular preventative spray schedule must be followed to control insect and disease problems and to ensure high quality fruit. Mice and other rodents can also damage peach trees by feeding on the lower trunk overwinter. Peach growers use cultivation, herbicides and cover crops in their orchard weed management program.

Harvest and storage

Each tree is hand-harvested from three to five times over the course of the harvest period. The fruit needs to be cooled as soon after harvest as possible to extend fruit shelf life. Refrigerated fresh-market peaches stored at 31 to 32 degrees F will last only two to three weeks. Higher quality is assured through quicker sales.

Labor requirements

Peach production requires considerable hand labor for pruning, thinning and harvesting fruit. Labor needs are approximately 40 hours per acre during the year of land preparation (Year 0) and 32 hours per acre during planting and establishment (Year 1). Fourteen hours per acre plus an additional one hour of pruning

per tree are required for general production in Years 2 and 3. During the fruit bearing years (Year 3+), labor needs for production and harvest total 100 hours per acre, plus 1½ hours per tree for pruning.

Economic Considerations

There is a significant start-up cost, demanding management, and a time lapse of at least three years after planting before the first harvest is realized. Full production generally will not occur until the sixth to seventh year. While the initial investment may be large, well-tended trees should last 12 to a maximum of 17 years, depending on the amount of winter injury to the wood.

Initial investments include land preparation, purchase of plants, and tree establishment. A good tractor and sprayer for insect and disease control are two of the most expensive equipment items needed. Other significant startup costs can include pest control costs for young trees and purchase of cold storage facilities for direct retailing.

Total costs from land preparation to bearing age (Years 0 through 2), including costs of equipment and operator labor, are estimated at \$6,020 per acre. Production and harvest costs for bearing trees (3+ years) are estimated at \$3,490 per acre. At yields of 300 to 400 bushels per acre, prices of \$1 per pound can produce returns over total costs between \$5,000 and \$10,000. U-Pick operations have the potential to reduce harvest costs and increase returns above total costs by as much as 20 percent to 50 percent per acre.

Selected Resources

- Ag Weather Center Disease and Insect Prediction Models (University of Kentucky) http://weather.uky.edu/plant_disease.html
- Fruit and Vegetable Crop Research Reports; Refer to each issue's table of contents for articles entitled Peach Variety Demonstration (University of Kentucky, 1998 to 2013) <http://www.uky.edu/hort/documents-list-commercial-fruit-nut>

- Growing Peaches in Kentucky, HO-57 (University of Kentucky, 2007) <http://www.ca.uky.edu/agc/pubs/ho/ho57/ho57.pdf>
- Kentucky Mesonet (Western Kentucky University) <http://www.kymesonet.org/index.html>
- Midwest Fruit Pest Management Guide, ID-232 (University of Kentucky, et al., 2018) 2 MB file https://ag.purdue.edu/hla/Hort/Pages/sfg_sprayguide.aspx
- Midwest Tree Fruit Pest Management Handbook, ID-93 (University of Kentucky, et al., 1998) <http://www.ca.uky.edu/agc/pubs/id/id93/id93.htm>
- Peach Cultivar Performance, HO-6 (University of Kentucky, 2010) <http://www.ca.uky.edu/agc/pubs/ho/ho6/ho6.pdf>
- Rootstocks for Kentucky Fruit Trees, HO-82 (University of Kentucky, 2011) <http://www.ca.uky.edu/agc/pubs/ho/ho82/ho82.pdf>
- Peaches: Organic and Low-Spray Production (ATTRA, 2012) <https://attra.ncat.org/attra-pub/summaries/summary.php?pub=6>
- Peach Orchard Establishment and Young Tree Care (University of Georgia, 2012) <http://extension.uga.edu/publications/detail.html?number=C877>
- Southeastern Peach, Nectarine, and Plum Pest Management and Culture Guide (University of Georgia, 2017) <http://extension.uga.edu/publications/detail.html?number=B1171>
- Simple Tree Training Technique for Peaches (University of Georgia, 2012) <http://extension.uga.edu/publications/detail.html?number=C878>
- Tree Fruit Production Guide (Pennsylvania State University, 2018-2019) <https://extension.psu.edu/tree-fruit-production-guide>
- Tree Fruit Production Budgets (Pennsylvania State University) <http://extension.psu.edu/plants/tree-fruit/commercial-tree-fruit-production/economics-of-production/tree-fruit-production-budgets>

Suggested Citation:

Kaiser, C. and M. Ernst. (2018). *Peaches*. CCD-CP-15. Lexington, KY: Center for Crop Diversification, University of Kentucky College of Agriculture, Food and Environment. Available: <http://www.uky.edu/ccd/sites/www.uky.edu/ccd/files/peaches.pdf>

Reviewed by John Strang, UK Extension Specialist, and Daniel Becker, UK Extension Associate
Photo courtesy of Pixabay.com

November 2018

For additional information, contact your local **County Extension** agent

Educational programs of Kentucky Cooperative Extension serve all people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, gender identity, gender expression, pregnancy, marital status, genetic information, age, veteran status, or physical or mental disability.