

American Persimmon

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Introduction

The American or common persimmon, *Diospyros virginiana*, is a slow-growing, moderately sized tree native to Kentucky. Fruit are about 1 to 2 inches in diameter. Unripe fruit, which are high in tannins, have an undesirable astringent taste. Fully ripened fruit, which are golden orange to reddish and occasionally blue in color, are very sweet. Cultivated varieties may have improved quality and lose their astringency earlier in the fall.



Persimmon fruit

Marketing and Market Outlook

The Asian persimmon, which is not winter hardy in Kentucky, is more commonly grown commercially in U.S. orchards. There are ongoing efforts to commercialize the American persimmon. These trees are normally sold by nurseries that specialize in less common fruits and nuts. There are a few Asian x American hybrid trees that have been

developed, like 'Kasandra', that are hardy in Kentucky. More hybrids are expected in the future.

Interest in persimmon and other native fruits has increased with more emphasis on local, regional and "slow" food. Fruit may be marketed fresh, and persimmons are occasionally found at farmers markets across Kentucky. Persimmon can also be processed and the pulp sold as a frozen product. Value-added products include persimmon puddings, cookies, cakes, custards, ice creams, sherbets and preserves. Fruit may also be dried.

Producers marketing persimmons at farmers markets and other direct marketing channels should provide persimmon storage, ripening and use information as many consumers are unfamiliar with the crop. Product sampling in direct markets could be particularly effective. Mature persimmon trees can produce large amounts of fruit, and roadside farm markets or orchards could likely harvest and process enough persimmon pulp to satisfy local market demand from small plantings.

Production Considerations

Cultivar selection

Persimmon cultivars vary in fruit color, size, shape, and astringency. Earliness and tree size may also differ between varieties. Fruit of most varieties contain black flecks in the pulp, which are not attractive in the processed product. 'Prok', 'Killen', 'Claypool', 'I-115', 'Dollywood', '100-42', '100-43', '100-45', 'Early Golden', 'John Rick', and 'C-100' are excellent varieties that contain few or no black specks.

Persimmons are normally dioecious; that is, trees produce either male or female flowers on separate trees. There is a 90-chromosome American persimmon that is native to the northern U.S. and a 60-chromosome type that is native to Kentucky and the southern U.S. Most of the named varieties are of the 90-chromosome type which set fruit parthenocarpically, without pollination. Thus, pollination is not necessary for the 90-chromosome type and fruit are easier to process with few or no seeds.

Site selection, planting, and maintenance

Persimmon is a very adaptable tree, surviving on everything from poor sites to river bottoms, and from partial shade to full sun. However, for best growth and fruit production, moist, well-drained loamy soils and sunny sites are best. Avoid waterlogged soils, as well as those that are droughty. Production on elevated sites permits a longer freeze-free production period.

Persimmon can be propagated from seeds, root cuttings, suckers and by grafting. Plants can be easily produced from seed after a three-month period of seed stratification. Seedlings that are 1 to 2 years old may be transplanted to the orchard. To ensure high quality plants and fruit, however, it is best to graft or bud the seedlings or plant grafted trees. Persimmon has a long taproot, which can make transplanting more difficult. A tree spacing of 20 feet between trees in the row and 27 feet between rows has worked well.

Young plants should be well-watered to aid in establishment; mature trees are somewhat drought-tolerant. Persimmon trees, which are pruned to a modified central leader to keep them from becoming too tall, require little pruning once they reach bearing size.

Pest management

Persimmon is generally considered free of most pests and diseases, although a few problems have been known to occur. Insect pests include psyllid, persimmon borer, fall webworm, bagworm, hickory horned devil, and twig girdler. The ambrosia beetle is a new pest that is moving into the state and could be a problem, particularly on weak trees. There is interest in varieties that have leaf spot resistance. Persimmon wilt, a fungal disease due to *Cephalosporium diospyri*, has caused considerable tree loss in the South, including Tennessee; it has not been found in Kentucky. Songbirds, raccoons, opossums, squirrels and deer are some of the animals that will feed on persimmon fruit.

Harvest and storage

Persimmon trees propagated from seeds begin producing a crop in about four to nine years, while grafted trees can begin fruiting three years after planting. It may take as many as 10 years for trees to come into full production. Fruit is hand-picked with care to maintain the cap on the fruit if it is to be marketed fresh. Fruit needs to be handled carefully to avoid bruising. Bearing trees of named varieties can yield as much as 90 to 100 pounds of fresh fruit per tree.

Mature fruit may be yellow, orange, reddish or blue in color. Fruit becomes soft when ripe. It is popularly believed that a hard frost is required to sweeten the fruit, but actually persimmons just require a long period for ripening. Edible fruits often hang on the trees through fall, and even into winter, unaffected by freezing temperatures.

Persimmons can be stored just above freezing for approximately two to three weeks. Ripe fruit that is still astringent can be treated with ethylene or frozen to eliminate the astringency. Drying also removes astringency.

Labor requirements

Labor needs will vary according to yields and whether persimmons are to be sold fresh or will be processed. Labor needs per acre, based on a population of 80 trees, are approximately 60 hours for production, 150-250 hours for harvest, and 60 hours for packing/grading. One Indiana producer knocks the fruit from the tree onto tarps laid beneath the tree. Two harvesters can pick up 20 pounds of usable fruit with the calyxes removed per hour. Removal of undesirable fruit and washing resulted in 60 pounds of fruit ready for processing in one hour.

Economic Considerations

Initial investments include land preparation, the purchase of seedlings or grafted trees, and possibly the installation of an irrigation system.

Establishment costs over three years for 1 acre of persimmons are estimated at \$7,400. These costs presume 80 trees per acre at a wholesale cost of \$25 per tree. Smaller plantings typically involve higher per-tree costs. Production costs after Year 4, based on 2 tons of saleable fruit, are estimated at \$900 per acre, with harvest and marketing costs at \$7,600 per acre. When fixed costs are added, the total cost is about \$2.20 per pound of persimmon production. Presuming gross returns of \$11,000 per acre, or 4,000 pounds at \$2.75 per pound, returns to land, capital and management would be approximately \$2,350 per acre, nearly \$0.60 per pound. Growers may be able to realize much higher returns per pound for a niche crop, such as persimmon, on a smaller, well-managed planting with well-targeted niche marketing.

Returns will vary widely depending on the market and product use. Prospective growers are encouraged to carefully forecast revenues based on marketable yields and product utilization.

References/Resources:

- Common Persimmon (US Forest Service, North Eastern Area, no year)
http://www.na.fs.fed.us/pubs/silvics_manual/volume_2/diospyros/virginiana.htm
- Common Persimmon Plant Guide (PLANTS Database, USDA NRCS, 2006)
http://plants.usda.gov/plantguide/pdf/pg_divi5.pdf
- Persimmons: An Over-View of Cultivars, Production, Harvesting, and Marketing (Washington State University) 57 pp, 10.68 MB file
<http://ucce.ucdavis.edu/files/datastore/391-472.pdf>
- Persimmons, Asian and American (ATTRA, 2010)
<https://attra.ncat.org/attra-pub/summaries/summary.php?pub=10>
- Persimmons (Texas A&M Agrilife Extension, 2013) http://aggie-horticulture.tamu.edu/fruit-nut/files/2015/04/persimmons_2015.pdf

Suggested Citation:

Kaiser, C. and M. Ernst. (2017). *American Persimmon*. CCD-CP-001. Lexington, KY: Center for Crop Diversification, University of Kentucky Martin Gatton College of Agriculture, Food and Environment.
Available: <https://ccd.uky.edu/resources/crops/fruit/persimmon>

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