

Asian & European Pears

Introduction

Very few common or European pears are grown commercially in Kentucky, primarily due to problems with fireblight and late spring frosts. Asian pears, on the other hand, are more consistently productive in Kentucky in spite of these problems. Also called apple pears, Asian pears are crisp and juicy like an apple but with the sweetness associated with pears.

Marketing and Market Outlook

The U.S. per capita fresh pear consumption has changed little in the past 10 years. Nationwide, the production of pears exceeds demand. Kentucky-grown pears are mainly marketed through roadside markets and local retail outlets. As Asian pears gain in acceptance and popularity, this niche market is expected to expand.

Production Considerations

Site selection and planting

Select an orchard site that is considerably higher than surrounding areas with excellent air drainage. Slopes that face east or north are best. While most Asian pear rootstocks can withstand somewhat poorly drained soils, well-drained soils are best. Proximity to a good water source for irrigation and spray water is highly desirable. Nitrogen application rates are intentionally kept low on pears to reduce fireblight susceptibility.

Most Kentucky growers are planting pears with standard or semi-dwarf rootstocks. Asian pears are usually sold as one-year-old, unbranched whips



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that can be planted in late winter or early spring. Approximately 218 to 242 trees are planted per acre. To ensure sufficient fruit set in commercial orchards, two or more compatible varieties should be planted together for cross-pollination. However, Asian pears have a tendency to set such a heavy crop that thinning to one fruit every 6 to 8 inches along the branches will be necessary to ensure that fruit is well-developed and to reduce stress to the tree. Asian pears are trained to an open center system.

Pest management

The most prevalent and potentially devastating disease of pears is fireblight. Control methods include choosing cultivars with resistance, surgical pruning, and regular sprays with a bactericide. Maryblyt™ is a computer program that can assist growers in timing these sprays. Insect pests include pear psylla, codling moth, mites, stink bugs and aphids. The Integrated Pest Management (IPM) approach helps growers determine exactly when pesticide applications are needed. IPM involves collecting detailed data regarding the crop,



pests and weather conditions in order to make sound pest management decisions. Weather data can be collected with either manual or automated instruments.

Harvest and storage

European pears are harvested before they are fully ripe and require a ripening period at room temperature before being ready for consumption. Asian pears, on the other hand, are allowed to ripen on the tree. Asian pears are ready to harvest when they change color and develop the sweetness and flavor characteristic of their cultivar. Fruit can be stored 1 to 3 months under the proper conditions.

Labor requirements

An acre of pears will require approximately 150 to 200 hours of labor to establish over the first 5 years.

An experienced pear picker can harvest 10 to 14 bushels of pears per hour. At a yield of 400 bushels per acre, this will require about 40 hours per acre of harvest labor. On-farm packing and grading will require additional labor (15 to 25 hours), depending on the packaging used. On-farm retailers can minimize packing labor by field sorting and having customers select their own pears from retail bins. Asian pears bruise easily and must be handled carefully.

Economic Considerations

Initial investments include land preparation, purchase of trees, tree establishment, and installation of an irrigation system. A good sprayer for insect and disease control will also be needed. In addition, field pest monitoring instruments can range in price from \$100 to \$6,000, depending on the level of sophistication. Besides significant start-up costs and demanding management, there is a time lapse of at least 3 years after planting before the first harvest is

realized. Full production generally will not occur until the seventh year.

Initial harvests of 50 pears per three-year-old Asian pear tree can be expected to increase to 200 to 250 pears per tree on seven-year old trees and 500 to 700 pears per tree on large, mature trees over 10 years old. The price paid for Asian pears is sometimes as high as \$1.00 per fruit. Sales from an acre of mature pear trees can range from \$2,500 to \$3,500, depending on yields and market. Variable costs for production will usually exceed \$2,000 per acre, with annual non-cash costs (e.g. depreciation, irrigation, etc.) typically adding another \$1,000. Unless premium direct or niche markets can be obtained, larger-scale pear production in Kentucky ranks below other tree fruits for returns to land, labor and management.

More Information

- Commercial Tree Fruit Spray Guide (University of Kentucky, *et al*, 2006) http://www.hort.purdue.edu/fruitveg/ID168_2006.pdf
- Kentucky Specialty and Minor Tree Fruit Marketing Fact Sheet: Pears, Asian Pears and Pawpaws (University of Kentucky, 2005) <http://www.uky.edu/Ag/NewCrops/treefruit2005.pdf>
- Midwest Tree Fruit Pest Management Handbook, ID-93 (University of Kentucky, *et al*, 1993) <http://www.ca.uky.edu/agc/pubs/id/id93/id93.htm>
- Asian Pear Culture in Alabama (Alabama Cooperative Extension, 1999) <http://www.aces.edu/dept/peaches/pearasiancult.html>
- Organic Pear Production (ATTRA, 2003) <http://www.attra.ncat.org/attra-pub/pear.html>
- Pennsylvania Tree Fruit Production Guide: Pears (Pennsylvania State University, 2006-07) <http://tfpg.cas.psu.edu/default.htm>