



# Christmas Trees

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## Introduction

Christmas trees can be grown on relatively small parcels of land. This enterprise can fit in well with an existing farm or nursery operation. While Christmas tree production does have a high profitability potential, it is also a long-term, risky investment requiring periods of intensive labor.

## Marketing

Christmas trees can be marketed in a choose-and-cut operation, where the consumer selects the tree and then assumes the cost of harvest and transportation. This type of operation is most successful when it is accessible to consumers and located near a populated area. Farms offering other Pick Your Own crops and agritourism activities often find that Christmas trees can add another customer visit to the farm during the winter season. Growers can also sell trees in a retail market, which means transporting the trees to a rental space and providing labor for tending the lot. Selling trees wholesale generally involves contracting with a buyer for a specific type and number of trees. It is difficult for small growers to compete with larger operations when marketing wholesale. Small growers need to develop a niche market by offering something other growers don't have.

## Market Outlook

Kentucky growers do have a competitive edge since locally grown trees are fresher than trees from out-of-state sources. In addition, local producers do not have the transportation costs associated with imported trees. Recent increases in transportation costs due to rapidly rising fuel costs will likely make "buying local" even more attractive. Still, local



producers should carefully consider their marketing plan before planting Christmas trees for commercial production because markets remain competitive. In Kentucky, there is currently room for additional growers, particularly younger growers as many producers are past middle age.

## Production considerations

### Species selection

A number of different species of evergreen trees (conifers) can be grown as Christmas trees in Kentucky. The most popular and salable species are Douglas fir (*Pseudotsuga menziesii*), and Canaan fir (*Abies balsamea* var. *phanerolepis*). Other species include white pine (*Pinus strobus*), Scots pine (*Pinus sylvestris*), Colorado blue spruce (*Picea pungens*), and Fraser fir (*Abies fraseri*), although the latter is difficult to grow in Kentucky. Needle cast problems have made Scots pine a less desirable choice



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from a production standpoint, especially in areas where serious outbreaks occur. More than one species should be planted to reduce the potential for losses from diseases and insects. Select the species/cultivars adapted to your climatic conditions and elevation. It is also important to match the tree species with the existing soil conditions.

#### *Site selection and planting*

Christmas trees can be produced on a wide variety of soils. While good agricultural land is ideal, some species can even be grown on marginal soils, such as reclaimed mine land. But the poorer the soil, the poorer the tree, so higher quality soils will produce better trees. A moist but well-drained site that is level or slightly rolling is best.

Growers who plan to convert forested land should clear the land and establish a beneficial cover crop the year before planting.

If pasture land is used, it may need heavily mowed, plowed, or herbicide-treated strips for planting seedlings. Because Christmas trees are a long-term crop, it is strongly advised to interplant them with a compatible annual cash crop so that the land gives a return on the investment while the trees are growing.



Planting material should be bareroot seedlings purchased from seedling growers. Stock should be planted in March or April in the Commonwealth. Planting can be accomplished with a planting bar, a spade, or by machine. The trees need adequate water for at least two years after establishment. When rainfall is insufficient, trees can be watered with a water wagon, tank or truck, or by drip irrigation. Applying woody mulch at the time of planting conserves moisture and reduces weed competition.

#### *Maintenance*

Christmas trees require regular maintenance from the year of planting until harvest. Monitoring the

plantation for pest or cultural problems on a weekly, bi-weekly, or monthly basis is required. Corrective pruning must be done the first year after establishment until harvest. Beginning in the third year and continuing every year until sold, pine trees must be sheared to the Christmas tree's classical conical shape. Shearing of pines is always done in the summer after the new growth spurt is complete. The specific date varies with weather. Douglas-firs and some true firs must be pruned every year.

#### *Pest management*

Plantations should be monitored for pests and diseases beginning in April and continuing through September. Potentially destructive insects include sawfly, aphids, bagworms, pine-tip moth, and pales weevil. Diseases, such as needlecasts and needle blights, may decrease the value of the trees or kill them outright. Deer, voles, and rabbits can also cause feeding or rubbing damage. Livestock should not be allowed to roam in unprotected plantings due to the resulting mechanical injury and soil compaction. Weed control is achieved by mowing, applying herbicides, mulching, or a combination of these methods.

#### *Harvest*

Due to variations in growth rate, not all trees of the same age will be harvestable the same year. A single year's planting could be harvested over a period of three years. It can take five to seven years for a tree to reach the optimum market size of 5½ to 7 feet tall. Small chain saws or bow saws are commonly used to cut Christmas trees. Taking safety precautions is of utmost importance in cutting Christmas trees, and liability insurance is a must. Replanting on an annual basis is necessary if you want to continue selling Christmas trees. Growers need to plant a minimum of 200 trees per year to keep a small operation going.

#### *Labor requirements*

Christmas tree production has periods of intensive labor, requiring time to monitor and manage plantings. Presuming 1,000 trees are planted in a solid 1-acre block (with some space left for access routes) and harvested over three years, per acre labor needs are approximately five hours for site preparation, 40 to 48 hours for planting, 24 to 48 hours during establishment years, and 55 to 70 hours for harvest years. As trees grow larger, it may take up to 20 hours or more per acre just for shearing. The total labor commitment

may total 125 to 175 hours per acre over the seven-year Christmas tree cycle.

## Economic considerations

Returns from Christmas tree production may appear high; however, a grower must make substantial investments for both labor and capital for five or six years before realizing any positive net returns. Initial investments include land preparation, purchase of plants, plant establishment, and possibly the installation of an irrigation system.

The following economic data is based on 1 acre of manually planted Christmas trees (1,000 trees), 75 percent of which will be harvested in equal amounts during years five, six, and seven on the farm. Total production costs for establishing and growing these trees over a seven-year period will generally range between \$5,600 to \$7,000. Because labor costs account for nearly one-third of this total cost, the availability of family labor versus hired labor will greatly affect total cash outlay. Other variables impacting total costs include operation size, types of trees grown, and cultural practices.

Christmas trees are usually harvested starting five to seven years after planting. Assuming 10 to 35 percent of the total 660-tree population is sold annually at an average price of \$30 per tree, an acre of Christmas trees can generate between \$1,980 and \$6,930 in annual gross revenues. Returns above all costs for a 10-year period can fall in the \$6,000 to \$10,000 range. The cost of establishing the Christmas tree stand is typically not recovered until the sixth or seventh year of production, so producers should be comfortable with investing in the establishment and production costs of Christmas trees until later returns are realized.

## Selected Resources

- Kentucky Christmas Tree Production Workbook (University of Kentucky, 1986-1999)
  - Planning and Site Selection, FOR-16 <http://www.ca.uky.edu/agc/pubs/for/for16/for16.htm>
  - Plantation Layout, FOR-17 <http://www.ca.uky.edu/agc/pubs/for/for17/for17.pdf>
  - Site Preparation, FOR-18 <http://www.ca.uky.edu/agc/pubs/for/for18/for18.htm>
  - Ground Covers, FOR-19 <http://www.ca.uky.edu/agc/pubs/for/for19/for19.htm>

- Species Selection, FOR-20 [http://www2.ca.uky.edu/forestryextension/Publications/FOR\\_FORFS/FOR20.pdf](http://www2.ca.uky.edu/forestryextension/Publications/FOR_FORFS/FOR20.pdf)
- Seedlings and Transplants, FOR-21 [http://www2.ca.uky.edu/forestryextension/Publications/FOR\\_FORFS/FOR21.pdf](http://www2.ca.uky.edu/forestryextension/Publications/FOR_FORFS/FOR21.pdf)
- Vegetation Control, FOR-23 <http://www.ca.uky.edu/agc/pubs/for/for23/for23.htm>
- Fertilization, FOR-24 <http://www.ca.uky.edu/agc/pubs/for/for24/for24.htm>
- Irrigation, FOR-25 <http://www.ca.uky.edu/agc/pubs/for/for25/for25.htm>
- Pruning and Shearing, FOR-26 <http://www.ca.uky.edu/agc/pubs/for/for26/for26.htm>
- Pest Control – Animals, FOR-27 <http://www.ca.uky.edu/agc/pubs/for/for27/for27.htm>
- Pest Control – Insects, FOR-27A <http://www.ca.uky.edu/agc/pubs/for/for27a/for27a.pdf>
- Harvesting, FOR-28 <http://www.ca.uky.edu/agc/pubs/for/for28/for28.htm>
- Marketing and Merchandising of Christmas Trees, FOR-29 [http://www2.ca.uky.edu/forestryextension/Publications/FOR\\_FORFS/FOR29.pdf](http://www2.ca.uky.edu/forestryextension/Publications/FOR_FORFS/FOR29.pdf)
- Use of “Cull” Trees, FOR-30 <http://www.ca.uky.edu/agc/pubs/for/for30/for30.htm>
- Record Keeping and Taxes, FOR-31 [http://www2.ca.uky.edu/forestryextension/Publications/FOR\\_FORFS/FOR31.pdf](http://www2.ca.uky.edu/forestryextension/Publications/FOR_FORFS/FOR31.pdf)
- Developing a Demonstration Plot, FOR-32 <http://www.ca.uky.edu/agc/pubs/for/for32/for32.htm>
- Production Calendar, FOR-33 <http://www.ca.uky.edu/agc/pubs/for/for33/for33.htm>
- References, FOR-34 <http://www.ca.uky.edu/agc/pubs/for/for34/for34.htm>
- Economics and Budgeting, FOR-36 <http://www.ca.uky.edu/agc/pubs/for/for36/for36.htm>
- Kentucky Christmas Tree Association (KCTA, 2009) <http://www.kychristmastreefarms.com/>
- Needle Cast Diseases of Conifers (University of Kentucky, 1996) <http://www.ca.uky.edu/agc/pubs/id/id85/id85.htm>
- Christmas Tree Budgets: Pine and Single Leaf Conifer (Ohio State University, 2000) <https://aede.osu.edu/research/osu-farm-management/enterprise-budgets/archived-budgets-2009-2001>
- Christmas Tree Production in North Carolina website (North Carolina State University <http://www.ces.ncsu.edu/fletcher/programs/xmas>

- CRP Alternative: Christmas Tree Production (Iowa State University, 1997) <http://www.extension.iastate.edu/Publications/CRP19.pdf>
- Growing Christmas Trees on Reclaimed Surface-Mined Land (Virginia Cooperative Extension, 2009) [https://www.pubs.ext.vt.edu/content/dam/pubs\\_ext\\_vt\\_edu/460/460-116/460-116\\_pdf.pdf](https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/460/460-116/460-116_pdf.pdf)
- Tree Crops for Marginal Farmland: Christmas Trees, PB-1463 (University of Tennessee, 2002) <https://extension.tennessee.edu/publications/Documents/PB1463.pdf> (32 pp)

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Photos courtesy of Thomas Nieman*

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