

HORTICULTURE**Getting Started in Christmas Tree Production***(Cont. from previous page)*

Any problems that can be eliminated before planting will save time and money in the long run.

Site preparation is the prime time for soil improvement. The soil test that you had done back in Step 2 will now be invaluable for determining if you need to add nutrients. Don't add nutrients that leach easily, like nitrogen, as they may be gone before your plants can use them. However, lime for pH management and phosphorus are often added at this time.

PLANTING

Successful planting starts long before you order your seeds or plants. Will you grow your own transplants? How many trees do you need when you start? And how many trees per acre should you plant? In general, it is better to start small and 'grow into' your available space. And losses of 1-2% during the first year after planting are normal, so don't forget that in your calculations.

Starting from seed to grow your own transplants is not as common as it once was. A transplant or liner ready for the field has grown 2-5 years closely spaced in a seed bed, and then an additional 0-3 years after transplanting to a nursery bed. Nursery stock is sold by age - two digits separated by a dash to tell you how many years in the seed bed and how many years in the nursery. Different species may have different types available for sale. Older transplants are usually more expensive, but also larger and quicker to harvest. But always check your plants on arrival as there can be differences in quality even within an age class.

Some nurseries are now selling container-grown seedlings - which unlike the more common bare root seedlings, arrive in pots. As you would expect, they cost more than bare root plants but have better survival and faster early growth. They may be most appropriate for the slower growing species, if the resulting trees can bring in a premium price.

The benefits of container-grown plants may lead you to believe that keeping transplant roots happy is essential to survival of your trees - and you would be right. Regardless of which types of liners you buy, you must keep the roots moist and cool at all times. Survival depends on the care of plants both before and after planting.

Christmas trees in the Northeast are usually planted in the spring after danger of frost - the trees are dormant, and there is enough rain to keep the soil moist. You still need to find that happy medium between enough water and too much. However, overly wet soils can be damaged by equipment and leave air spaces around roots that can kill trees. Whether you choose hand or machine planting may depend on the characteristics of your site, the number of trees you are planting, and your available capital for equipment purchases.

Although it may be tempting to put as many trees as possible in your field, appropriate spacing can help you make money. Consider the species you

are planting, the size of your trees at harvest, the size of your equipment, and the ease with which trees can be removed after cutting when you plan between and within row spacing. You are trying to give each tree the space it needs, with no crowding or shading that can affect quality.

Even trees from the same nursery source may grow at different rates, so a field is not usually harvested all at the same time. This can present a problem in the future, especially if land area is an issue. Many growers interplant new trees where trees have been cut. While this does maximize the use of available land, consider the effects on soil management. Pest control can also be a problem, especially if a different species is used to interplant.

MANAGEMENT

Like most things in life, you get out what you put in. Using Integrated Pest Management (IPM) and Best Management Practices (BMPs) will help you produce quality trees while reducing unnecessary inputs.

Integrated pest management is based on identifying the pests you have and knowing when they need to be controlled. That may depend on the number of insect pests, the stage of the disease, or the age of your trees. Scouting manuals can tell you what to look for, on which species and when or where. Management practices that keep your trees in vigorous growth can reduce their susceptibility to pests. Keeping records of what you find and how you controlled it can help with future planning and prevention.

Weeds can be the most persistent pests in a Christmas tree farm. Weed competition can cause loss in quality and slow growth rates, particularly in young plantings. Tillage for weed control is not commonly used because of the potential for root damage. Mowing and herbicides are effective but you must know what you are trying to control to be successful.

Weed species can change with management over time. Many growers are starting to use groundcover management, either using low growing weed species or overseeding with low growing grasses or clover. This can limit the growth of more damaging weeds, keep soils cool, reduce erosion losses, and even reduce disease and insect pressure. It does require some work, however.

Fertilization and soil improvement should be based on soil tests. Tissue analyses, while more accurate, may be difficult to get if there are no standards for Christmas trees in your area. Application methods will depend on the site, number of trees and tree age. Consider the effects of the nitrogen source chosen on soil pH and the possibility of leaching.

Starting about the third year in the field, trees are shaped. Early shaping is primarily aimed at creating a strong single leader. As the tree grows, it will be sheared to create the desired taper and encourage the development of lateral buds to



Clover groundcover for weed management.

avoid that Charlie Brown Christmas tree look. Pruning may also be used to remove damaged branches or correct deformities.

Trees that are about 2/3 as wide as they are tall are considered ideal. Different species may be sheared to different tapers based on their growth habit and what consumers prefer. Pines are sheared earlier than other Christmas tree species. Shearing can be done manually with a knife or with mechanical pruners. It takes a lot of work to make a tree look natural.

HARVESTING

While the basic method of harvest is the same, handling of the trees is determined by the method of marketing. Some growers may market in several different ways, or may change their marketing to match consumer demands. Knowing your market is essential to determine size of tree to harvest.

If you are shipping trees, or selling them precut,

managing time of harvest with tree freshness is key. With choose and cut marketing, pruning off lower branches before harvest and cleaning up tall stumps and debris during the harvest period may be necessary. Shaking, baling and other services, as well as elements of agrotourism, add to the consumer experience of cutting their own tree. Selling boughs or making wreaths can be an additional source of income for choose and cut operations. Poor quality or overly large trees can be harvested for boughs.

Producing Christmas trees can be rewarding, but it may also seem daunting with all the factors to consider and with the long production cycle. Advance planning can help you determine if growing Christmas trees is for you!

Elizabeth Lamb is the Coordinator of Ornamental IPM for the New York State Integrated Pest Management Program. She can be reached at 607 254-8800 or eml38@cornell.edu.

Resource Spotlight**New Guide to High Tunnel Berry Production**

Northeast growers can capture more of the lucrative local market for fresh berries by growing brambles (raspberries and blackberries) in high tunnels, according to researchers at Cornell and Pennsylvania State Universities.

These relatively low-cost, usually unheated, plastic-covered hoopouses can help growers fill late-spring and late-fall gaps in the market. Instead of mid-June, high-tunnel berries can be harvested in May. The field-grown season for brambles usually ends in early October. But growers using high tunnels continue to harvest berries through November.

Other benefits of high tunnels include:

- * Berry yields from tunnels can be two to three times greater than field-grown, and the berries can be significantly larger.
- * Tunnel-grown berries also have longer shelf-life with reduced pesticide inputs.
- * Primocane-fruiting blackberries (those that set fruit on first-year growth) ripen where the growing season is otherwise too short.
- * Floricane-fruiting raspberries and blackberries (those that fruit on second-year growth) can overwinter in climates where they would otherwise be killed by cold temperatures.

A new publication, *High Tunnel Raspberries and Blackberries*, spells out in detail how it's done. The 29-page guide is available online at www.fruit.cornell.edu/Berries. Or you can order print copies. (See details below.) Topics include:

- * Site selection
- * Tunnel types and construction
- * Choosing and establishing plants
- * In-ground and container plantings
- * Care and management
- * Season extension and harvesting
- * Budget for in-ground high tunnel raspberries

If coupled with brambles grown in heated greenhouses, Northeast berry growers could produce brambles nearly year-round. An earlier publication, *Greenhouse Raspberries*, describes those growing practices. It is available online at www.fruit.cornell.edu/Berries/bramblehtml/ghrasp.html. Rising energy costs make greenhouse berries more expensive to grow. But these two practices could help shift market supply along the Atlantic seaboard to local sources instead of berries imported from other regions or hemispheres.

To order hard copies of these publications, send a check payable to Cornell University for \$10 for the high tunnel guide or \$9.50 for the greenhouse guide to: Max Welcome, Dept. of Horticulture, 134A Plant Science Bldg., Cornell University, Ithaca NY 14853-5904.

The "Guide to High Tunnel Berry Production" is part of a new outreach and education initiative aimed at increasing profits for commercial berry growers. The initiative is funded by a two year grant from the New York Farm Viability Institute, a farmer-led nonprofit group that funds research projects to help farmers increase profits. The Institute helps to foster a New York agriculture system of diverse farm sizes, production practices, commodities, sectors and geographic regions.



Firs ready to cut.



High Tunnel Raspberries and Blackberries

Department of Horticulture Publication No. 47 (2007)
Authors: Cathy Heiderreich, Marvin Pitts, Mary Jo Kelly, and Kathy Demchak
On line at: www.fruit.cornell.edu/berries.html