

# What About Living Christmas Trees?

BERT CREGG

As the debate over the relative environmental impacts of real versus artificial Christmas trees continues to swirl, one aspect of real trees that continues to receive positive press is living Christmas trees. This past holiday season various national and local media accounts focused on businesses centered on selling – or, in some cases, renting – potted living Christmas trees.





**Image 1** – This national news feature highlighted living Christmas tree rentals in California.

## What are living Christmas trees?

Living trees are trees that are sold with their roots intact so that the tree can be planted in the landscape after the holidays. While living trees are receiving increased media attention, selling conifers in containers as living trees is not a new concept, and many Christmas tree farms in the Great Lakes region have sold various types of living trees for decades (Image 2).

In general, living trees come in two forms: field-grown and container-grown. Field-grown living trees are

produced using the same cultivation techniques as typical cut Christmas trees. When trees are ready for harvest, producers dig the trees, either by hand or using a mechanical tree spade. Once the tree is dug, the root-ball is placed in a standard, plastic nursery container, which are referred to as containerized trees. In some cases, growers may wrap the root-ball in burlap, producing a balled-in-burlap (or B&B) tree (Image 3). More recently, producers have adopted container-growing techniques from the landscape nursery industry to produce container-grown trees (Image 4). In contrast to containerized trees that are

field-grown and then dug and potted, container-grown trees are produced in containers from the outset. Container production is highly specialized, as trees are grown in lightweight substrate composed largely of aged pine bark and peat moss. As a result, container-grown trees are much lighter than containerized trees dug from the field. Container-grown trees can be produced in a range of sizes depending on the size of the container, but they are particularly well suited for tabletop trees (Image 5).

## What is the market for living Christmas trees?

Jane Neubauer and her husband, Fritz, own and operate Sugar Pines Farm in Chesterland, OH and have sold living trees for over a decade. Jane reports the market for living trees is diverse. “As you would expect, we get a lot of younger consumers that feel a living tree is more eco-friendly than a cut tree”, she notes. “But we also have customers looking to create memories or a memorial, ‘Dad always loved Christmas so we wanted a living tree to remember him.’” Jane also points out that many customers buy a living tree and a cut tree. “They’ll put the cut tree in the home and then have the living tree on the deck or patio.” The Neubauer’s sell B&B trees as well as container-grown trees. Bringing home a B&B tree takes some planning on the part of the customer. “We have a two-man crew that hand-digs our B&B trees, so the root balls are a little smaller than from a tree spade”, she notes. “But customers still need a trailer or pick up to get them home – though one couple managed to get one into a Prius!” Jane also sees an expanding market for container-grown trees. “We buy in container-grown table-top trees and completely sell out of those. Again, often in addition to selling the customer a cut tree.”



**Image 2** – Living Christmas trees for sale at a tree farm in Ohio. (Photo: Sugar Pines Farm)

## What are Christmas tree rentals?

Another twist on living trees are Christmas tree rentals. Rental trees may appeal to apartment dwellers or others that may not have a yard or space to plant a tree after the holidays. A Christmas tree rental business is often a form of a typical container landscape nursery. Trees are grown in containers of various sizes, depending on the size of the tree. In some versions of the Christmas tree rental model, consumers visit the tree lot or nursery to find their tree, pay the rental fee, and then return it after the holidays. Once the tree is returned, the nursery grows the tree for another year and rents it out the following year, one year larger. The process is repeated until the tree is too large to be handled. For the ultimate in convenience, some Christmas tree rental businesses offer delivery and pick up. While this model involves greater labor and transportation costs, it offers the business more opportunity to control the length of indoor display and monitor the care the tree will receive to help ensure the tree can survive multiple rental cycles.

## Are living trees environmentally friendly?

Not surprisingly, the answer is, “It depends.” The big variables in determining the environmental impact of living trees are the production system, transport to and from the site of use, and then what ultimately becomes of the tree. In terms of production system, if the trees are field-grown, dug, and then sold as living trees, the carbon footprint during production would be similar to a standard cut Christmas tree. If the trees are grown in containers similar to standard ornamental container production, then the inputs would be greater as container trees need frequent, sometimes daily, irrigation. Lastly, and most importantly, is the long-term survivability of the trees. For example, a life cycle assessment conducted by Dr. Dewayne Ingram at

the University of Kentucky indicated that a 6’ blue spruce dug with a tree spade would sequester 950 pounds of carbon over a 50-year lifespan once planted in a landscape. However, if the tree does not survive transplanting, its carbon footprint would likely be higher than a cut Christmas tree due to carbon emissions during harvest with a tree spade and greater fuel use during transport due to increased weight associated with the root ball.

## Species consideration of living trees

For producers, one advantage of living trees is that growers may be able to consider a wider palette of tree species than those that are normally grown as Christmas trees. This could include trees that are commonly used as landscape trees but have relatively poor needle retention as cut Christmas trees, such as Norway spruce or white spruce (Image 6). On the other hand, some



**Image 3** – Balled-in-burlap trees for sale as living Christmas trees. (Photo: Sugar Pines Farm)



**Image 4** – Container-grown living Christmas trees in Oregon. (Photo: Chal Landgren, Oregon State University)



**Image 6** – Two-way player. White spruce is an excellent choice for living Christmas trees because it has a classic Christmas tree form and texture but is also a hardy landscape tree throughout most of the Great Lakes region. (Photo: Kate Dodde, Dutchman Tree Farms)



**Image 7** – A living Nordmann fir Christmas tree in Denmark comes with a tag with care instructions for consumers. (Photo: Rick Bates, Penn State University)

species that are commonly grown as cut trees, such as Fraser fir or Douglas-fir, may be poor choices as living trees because homeowners may not appreciate the exacting site requirements (Fraser fir) or need for pest or disease management (Douglas-fir) required for these trees to perform well in a typical landscape planting.

### Handling instructions for living tree purchasers

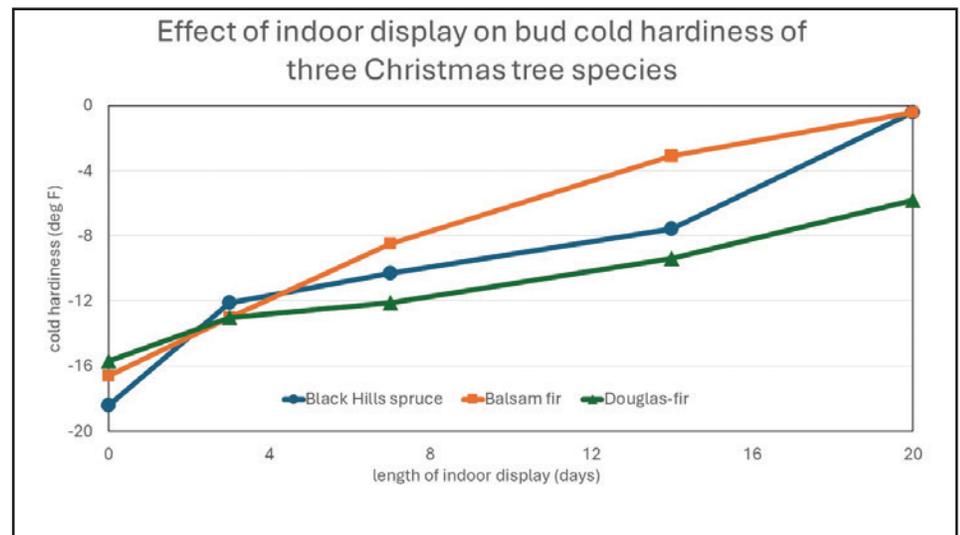
The environmental benefits of living Christmas trees are predicated on trees surviving in the landscape after their indoor display period(s) is over. In portions of the country, such as the Great Lakes region, that have cold winters, tree dormancy and cold tolerance play an overriding role in the ability of trees to survive and grow after indoor display. Communicating care and planting instructions to consumers is critical for long-term success. Jane Neubauer at Sugar Pines Farm notes that they often spend a half hour or longer with customers discussing tree care and transplanting. Tree tags are also useful for care information (Image 7). At Sugar Pines Farm, tree tags also include a QR code that links to care instructions on their website. When trees are brought into typical indoor conditions (70 deg F), they will quickly

begin to lose cold hardiness. Research at Michigan State University demonstrated that trees begin to lose cold hardiness almost immediately once they are brought into an indoor environment (Image 8). For most of the Great Lakes region, temperatures of 0 deg F or colder are possible in late December and early January. If trees are displayed indoors for an extended period, there is a high likelihood of freezing damage if trees are placed outdoors immediately after the holidays. To reduce potential freezing injury, consumers should limit indoor display to 7 to 10 days. After the holidays, trees should be held in a protected, unheated space such as enclosed porch or garage until conditions are favorable for planting in the spring. Using these precautions, many consumers have successfully planted Christmas trees and have living (and growing!) keepsakes of Christmases past in their landscapes.

### REFERENCES

Gooch, N. J., Nzokou, P., & Cregg, B. M. (2009). Effect of indoor exposure on the cold hardiness and physiology of containerized Christmas trees. *HortTechnology*, 19(1), 72-77.

Ingram, D. L. (2013). Life cycle assessment to study the carbon footprint of system components for Colorado blue spruce field production and use. *Journal of the American Society for Horticultural Science*, 138(1), 3-11. 🌲



**Image 8** – In this trial at Michigan State University, cold hardiness was tracked as trees were displayed indoors. Cold hardiness was determined on shoots in controlled freezing tests using a programmable freezer. As the indoor display length increased, trees began to de-harden; that is, bud damage occurred at warmer temperatures. Adapted from Gooch et al., 2009.