AN EVALUATION OF CHRISTMAS TREE PRESERVATIVES

BY JEFFREY H. OWEN,
AREA EXTENSION FORESTRY SPECIALIST, CHRISTMAS TREE PRODUCTION & MARKETING
NC STATE UNIVERSITY

A couple of years ago, a grower asked me to evaluate a Christmas tree preservative packaged by Peters Fertilizer Company and sold by one of his major chain store customers. Several of his trees had lost needles when consumers treated them with this preservative. Trees were returned to stores with abnormally heavy needle loss. The consumers had used this Christmas tree preservative according to label directions using the provided measuring spoon. While the grower “made it right” with his customer, he resented paying for a problem created by another product sold at the store. None of his other wholesale customers experienced similar problems with the fresh trees they received.

When I looked for the Christmas tree preservative online, Peters had discontinued its production. When I went to the chain store the following Thanksgiving, a new Christmas tree preservative packaged by EZgardner was prominently displayed by the garden center sales register. EZgardner Christmas tree preservative was packaged as 2-inch long pellets to be conveniently added to water on a weekly basis. I bought some of it to test alongside the Peters product that the grower had given me.

I started with a small pilot study in my office using branches cut from the same ten trees. I started with three treatments: clean tap water, the Peters preservative, and the EZgardner preservative. I added first doses of the preservative to the water according to their labels. I maintained water levels without adding additional preservative even though the labels called for additional material at weekly intervals. Branches were lightly brushed at weekly intervals to evaluate needle loss.

I rated needle loss on a 7-point scale shown in the box. Points “1” through “4” on the scale are all less than 10% needle loss because even a small loss is unusual for Fraser fir. From ratings of “1” to “3,” dropped needles are visible on the surface below the branch, but not readily on the shoots. Gaps between needles become more visible at a rating of “4.” Ratings of “5” or “6” reflect serious visible needle loss and one of “7” represents extensive needle loss with much of the branch stem being exposed.

After three weeks, the 10 branches kept in tap water exhibited an average needle loss rating of 2.4 or about 1-3%. The Peters treatment exhibited an average needle loss of 4.5% - enough to make the foliage start to look ragged. The EZ Gardener product induced very heavy needle loss on most branches for an average rating of 6.6. Both preservatives were clearly detrimental to the durability of Fraser fir foliage.

The results of this simple test were supported in the literature by several studies including ones conducted by Eric Hinesley and Sylvia Blankenship at NC State University and Gary Chastagner in the Pacific Northwest. They had found preservatives, both commercial products and home remedies, to be of no benefit at best and in many cases harmful to tree quality compared to clean water.

However, a ten-branch sample lacks the statistical strength on which to base product criticism. I needed to do a larger study to be sure of my results.

I followed the pilot study up with a more inclusive study including six retail Christmas tree preservatives, two recipes for homemade Christ-
Treatments:
check
Forest Fresh
Keeps It Green
TreeLife
Syrup & bleach
Prolong
Peters
Syrup
EZgardner
$1/2$ tablet
1 tablet

Needle loss of current year foliage was rated at the end of the second week and again after the forth week. Needle loss from wet foliage on branch ends submerged in the buckets was not rated. While several treatments including the water check exhibited almost no needle loss at week 2 (a rating of 1.1 represented about 1% needle loss), all treatments exhibited some needle loss by week 4. The spread between treatments also increased with time.

Figure 2 shows the average needle loss rating of the different treatments at week 4. The check yielded significantly less needle loss than all other treatments except Forest Fresh preservative. After a month, less than three percent of the needles shed. At the other end of the spectrum, the full rate of EZgardner resulted in significantly more needle loss than any other treatment. While the average rating of 4.9 represented a needle loss percentage of about 20%, some trees were rated at "7" with severe needle loss. Other preservative treatments overlapped to a great degree. Forest Fresh and Keeps It Green exhibited slightly less needle loss than the other preservative treatments but were only significantly different from the corn syrup treatment and the two EZgardner treatments. It is noteworthy that both treatments of the EZgardner preservative resulted in the most needle loss in the study.

Similar to past studies, the addition of Christmas tree preservatives did not improve needle retention of Fraser fir foliage. In fact, some products, both homemade and commercial, have harmed fresh cut Christmas tree foliage. Whether it is sugar, salt, or fertilizer, chemical contaminants in water given to a Christmas tree can aggravate needle loss. As others have said before, clean water is best.

In today’s marketplace, suppliers are expected to fix problems that might arise with their product – no questions asked. However, when a retailer aggressively sells an additive that has been shown to harm a Christmas tree, it is not automatically the growers fault if the tree drops needles. The better job the retailer does in selling the preservative, the more problems the retailer (and therefore the grower) is likely to have. It’s just not right. On an individual level, it hurts a grower’s reputation for quality. On a national basis, it hurts the real tree market.

So, what should you do with this information? Don’t wait until December when complaints come in. Talk to your buyers about this problem before they put Christmas tree preservatives on the shelf in October! Write a clause in your contract excluding reimbursement for trees treated with preservatives that lost needles.
The use of brand names and any mention of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products or services not mentioned.

REFERENCES


---

Calendar Of Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>September 24</td>
<td>BOD / FFPC &amp; Opening Reception of NCCTA's 50th Anniversary Celebration LaQuinta Inn, Boone</td>
</tr>
<tr>
<td>September 25</td>
<td>Summer Meeting &amp; Trade Show; NCCTA 50th Anniversary Celebration - LaQuinta Inn, Boone</td>
</tr>
<tr>
<td>September 26</td>
<td>Farm Tour</td>
</tr>
<tr>
<td>January 11-12</td>
<td>BOD / FFPC Leadership Retreat Valle Crucis</td>
</tr>
<tr>
<td>March 4</td>
<td>BOD / FFPC Meeting</td>
</tr>
<tr>
<td>March 5-6</td>
<td>NCCTA Winter Meeting</td>
</tr>
</tbody>
</table>