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Insec(tc)ure*:
Are you insecure about your insect cures?

A UT Urban IPM Lab Newsletter for the Pest Management Industry

The PMP and the Christmas Tree

Karen Vail, UT Entomology & Plant Pathology

You may be asking yourself what a PMP has to do with Christmas trees, so let me explain. I decided to keep this newsletter on the lighter side. For many of us, we are the insect experts in our families. Even though category 7 pesticide certification doesn't involve plant pests, you're the family expert and have a reputation to maintain. So, I thought I'd cover some of the strange pests that may be introduced to homes through the holiday season and give you a few suggestions to deal with them to prevent damaging your title of family insect expert.

Let's start with the Christmas tree. According to the History Channel (https://www.history.com/topics/christmas/history-of-christmas-trees), even before the beginning of Christianity, people hung evergreen boughs over windows and doors in the winter to discourage evil spirits. Ancient people used evergreens as a symbol that the sun god would return when the daylength began to increase after the winter solstice. Several different cultures used the evergreen to symbolize life over death. Martin Luther was credited with adding candles to an evergreen tree to demonstrate to his family the awe of stars twinkling over evergreen trees. But, the Germans in the 16th century are credited with producing the first Christmas trees. It didn't catch on in the US through the mid-1800s because it was seen as a pagan symbol. But attitudes changed, and by the late 1800s, Americans were likely to have trees that stretched from floor to ceiling. And so, the tradition continues to this day and is included in the celebration of Christmas.

OK, back to you being the family expert on all things creepy crawly. Most evergreen trees are harvested for the Christmas season in November and early December and are cut during cool to cold weather. Arthropods may have entered the protection of the limbs to avoid the cold. When brought into the home, the warmer temperatures may make them active or attracted to lights, lamps or windows. On the other hand, this living plant may have had pests, such as aphids, feeding that went unnoticed before harvest.

So, let's be preemptive and give instructions to family members about purchasing Christmas trees (Table 1). After all, it's easier to leave the pests in the field or tree lot than try to get rid of them once they are introduced to the home. It's your job to keep everyone calm and prevent them from pulling out the flame thrower when pests associated with the Christmas tree are discovered. None of those species feeding on the tree should harm the home or its contents, including you.

What possible pests may you encounter? Since you are the family expert and family can be scattered around the country, I will not limit this discussion to Christmas tree pests in our area. First of all, Christmas trees are often scouted and treated for pests as needed. So it's unlikely you'll find one with pests, but we need to be prepared if we do. Since I've been contacted by extended family about giant conifer aphids in the past, let's start with those.

As the name implies, giant conifer aphids in the genus *Cinara* are huge and can be up to 1/8-inch long (Figure 1). This native aphid's body is dark (grey, brown, or black), and the legs may be the same color or reddish. When feeding on a conifer with drying needles, which may occur if you keep a rooted Christmas tree indoors, winged

forms may be produced. Oh, the excitement! Even without wings, the aphids may wander away from the tree. Carefully vacuum these to avoid crushing and staining surfaces. Other aphids feeding on conifers are usually host specific, so houseplants should be safe from attack.

Figure 1. White pine aphid, Cinara strobi. Credit: Lacy L. Hyche, Auburn University, Bugwood.org

Table 1. The Do's and Don'ts of Christmas Tree Handling

Do's	Don'ts
Shake the tree and pound the stump on the ground before bringing it into the house to dislodge potential pests.	Aphids may wander from the tree onto furniture or carpet. Don't smash them as they may cause staining.
Before decorating, inspect the tree for pests. If you find any, use the vacuum to remove them.	Any missed pests will not survive until next year on the ornaments, so don't worry about that
If soft-bodied pests are throughout the tree, and you can't remove them all or don't want to try, return the tree to the lot and request another.	**Don't apply insecticides to a tree with electrical lights. Many aerosolized insecticides are flammable and water-based products could cause electrical shorts or worse.**

Figure 2. Bark beetle.

Bark (Figure 2) and ambrosia beetles, which are small (~1/8 inch) and brownish, are sometimes encountered indoors in the winter when firewood is stored for a long time. While the adults usually emerge outdoors in late winter/early spring, the warmer indoor temperatures fool the beetles and cause them to emerge and fly to windows. Fortunately, they will not attack the dry structural or furniture wood found in a home nor will they persist for very long in the low indoor humidity. Occasionally, stressed Christmas trees that had been attacked in the field, may contain these beetles and allow the adults to emerge when brought indoors.

Other oddities that may be encountered on Christmas trees include predatory mites that overwinter as adults, spiders, preying mantid egg masses, bark lice, and others. Predatory mites feed on the eggs of insects and mites when the weather is warm enough. If the warmer indoor temperatures cause these to become active, they should stay on the tree to feed on their prey but may venture off. Spiders may also be in the tree and become active in the warmer temperatures, or spiderlings may hatch from egg sacs. These

typically outdoor spiders may stay on the tree or venture away and create webs but can be removed with a vacuum or duster. Most outdoor species should not persist very long indoors.

Figure 3. Preying mantid egg mass of two different species. Credit: K. Vail, UT E&PP

Preying mantid egg masses (Figure 3) are brown, appear frothy but crispy, and may be attached to the Christmas tree branches. It is best to remove these before the tree is brought indoors. If you cut a piece of the branch containing the egg mass, you can place it outdoors in a shrub, and it will hatch outdoors when prey is available. If you leave the egg mass on the tree, you may be greeted with baby mantises, which will likely eat each other due to the lack of prey indoors.

Most pest management professionals are familiar with light-colored book lice (Figure 4) found in moist indoor environments. Bark lice, also in the family Psocoptera, often have wings. Bark lice may be gray or brown (Figure 4)and feed on the fungus, molds, algae and even pollen found on Christmas trees and in other places. Bark lice are another soft-bodied insect that should not survive very long indoors under low humidity.

Figure 4. Wingless book lice indoors on a glue board (left) and bark lice on a tree branch. Credit: K. Vail, UT E&PP, and Jessica Louque, Smithers Viscient, Bugwood.org

I think you see the theme here. Most of the surprise insects encountered on a Christmas tree will not survive very long indoors and can be easily removed with a vacuum cleaner. It's your job to identify the species and make recommendations to keep the family peace. For a more thorough understanding of potential Christmas tree surprises, see Skvarla (2023) reference below.

See ya at the upcoming ETPCA Smoky Mountian Conference (Jan. 17), Chattanooga Area Pest Control Association Meeting (Feb. 15) and the TPCA Winter Conference (Feb. 26 and 27).

I wish you all a wonderful holiday season and hope you find time to enjoy family and friends and renew your spirit.

References:

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Sidebottom, J. 2014. Post-Harvest Pests on Christmas Trees. NC State Extension https://christmastrees.ces.ncsu.edu/badbugs/

Skvarla, M. 2023. Insects on Real Christmas Trees. Penn State Extension, https://extension.psu.edu/insects-on-real-christmas-trees

Meet the two latest ACEs who survived our training class and passed the ESA ACE exam!

Sean Cronin, Great Southern Environmental Services

Scott Lis, Terminix

UT ACE (Associate Certified Entomologist) Prep Course Fall 2024

Congratulations to Sean Cronin, Great Southern Environmental Services, and Scott Lis of Terminix, who survived our ACE training and passed the ACE exam. The **UT ACE (Associate Certified Entomologist) Prep Course** is designed to help the pest management professional to better manage pest problems in and around structures. Topics covered are listed in the schedule below. Classes are one to two hours and provided virtually via Zoom. By offering online training, we no longer limit participants to being within a few hours' drive of campus! Lectures are based on the text, *IPM for the Urban Professional*, available from the Entomological Society of America (https://www.entocert.org/ACE-study-guide). The NPMA Field Guide to Structural Pests (available in print from NPMA or as an iOS or Android app) serves as a reference for specimen identifications. This course prepares you for the Tennessee licensing exams for General Pest and Rodent Control (GRC) and Wood-destroying organisms (WDO) as well as the Associate Certified Entomologist (ACE) exam offered by the Entomological Society of America. See the instructor and (https://www.entocert.org/ace-certification) for further details on ACE and the exam. The ACE application process is separate from the training we offer. Upon completion of the course, you'll increase your pest management confidence and will be better prepared to discuss pest management problems with your colleagues and clients and to solve these problems.

The tentative schedule for 2024 follows. If you have any questions about the training, please contact me at kvail@utk.edu.

Tentative 2024 Training Dates	**Subject**
September 16	Integrated Pest Management and Tools
September 23	Insecticides and Modes of Actions
September 30	Pesticide Safety, Laws & Labels
October 7	Insect Biology and Morphology
October 14	Ants
October 21	Cockroaches
October 28	Flies
November 4	Stinging and Biting Arthropods
November 18	Stored Products Pests
November 25	Occasional Invaders
December 2	Wood-destroying Organisms
December 9	Common Commensal Pests/Review
December 15	Specimen review in the afternoon
December 16* 5 pm – 8 pm	**Exam (limited to 15)***

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Disclaimer

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication.

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