



Pests and Pesticides in Child-serving Facilities: An IPM Newsletter

We Want Your Pest Problems for the TSPMA Meeting

Karen Vail, *Entomology and Plant Pathology, University of Tennessee*

We are looking forward to the Tennessee School Plant Management Association Meeting in Gatlinburg, TN June 10 - 12, 2024 where we will present *School Pest Problem-Solving Scenarios*. Our presentation will be an interactive one. We will present school pest problems, divide participants into small groups to problem solve, and then gather back together to review potential solutions. Here's where we need your help. While we have plenty of pest problems to consider, we'd like to give you an opportunity too. If you have encountered an unusual pest problem and would like to share it with the group, please send me (kvail@utk.edu) a paragraph description of the problem. If your problem is chosen for the presentation, I'll contact you for photos and to get more details.

Be Aware of Drywood Termites

Karen Vail, *Entomology and Plant Pathology, University of Tennessee*

I've heard of several Tennessee structural infestations of drywood termites in the past few years and this indicates we are missing the early signs of this pest.

As far as we know, drywood termites don't naturally occur in Tennessee, they must be introduced through infested furniture or other wood. Both subterranean and drywood termites consume wood and other sources of cellulose. Unlike subterranean termites that need a source of moisture, such as that found in soil, drywood termites do not have this requirement, so they live in dry wood which is easily shipped or moved. Fortunately, drywood termites have small colonies which grow slowly so damage is typically minimal unless they persist for decades and spread into structural wood. By structural wood, I refer to the wood, such as rafters, joists, plates, studs, and headers, used to construct the building. While wood-constructed schools may be rare now, I thought it was important to inform you of the increase of this pest's status in our state and how to differentiate them from subterranean termites.

One of the earliest signs of drywood termites is a pile of their six-sided fecal pellets (Figure 1). As the fecal pellets are produced in the galleries or chambers, they are removed from the colony through a kickout hole. You can use the shape of the fecal pellet pile to help locate the infestation. If the pile is scattered, they've fallen a greater distance than if the hole was close to the ground. Also the fecal pellet color is unrelated to the wood being fed upon (Figure 1). Look carefully at the small 1 mm fecal pellets and don't confuse them with the larger seeds in a rodent's cache (Figure 2 and 3).

Special Points of Interest



School Pest Problem Solving & Drywood Termites



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Figure 1. Drywood termite fecal pellet color is not associated with the wood color and may be due to the microorganisms or endosymbionts present in the termite gut. Photo credit: Rudolf Scheffrahn, <https://www.rudolfscheffrahn.com/>



Figure 2. Materials found in a closet that resemble drywood termites feces, but are seeds, possibly elongated wheat berries, stored by a rodent.



Figure 3. Another example of a rodent food cache. These were submitted as suspect insect eggs, but also could be confused with drywood termite fecal pellets except they lack the concave, six sides and are larger.



Figure 4. Above left, drywood termites leave a thin layer of wood for protection, but the thin wood may pucker. Above right, a drywood termite chamber with a few fecal pellets revealed below the puckering. Credit: Karen Vail, UT E&PP

Another termite sign is puckered wood or paint. As the termites feed below the surface, the thin covering may pucker as the wood is consumed (Figure 4).

Soldiers with darkened head capsules are one of the castes found in termite colonies and are responsible for defending the colony. In drywood termites, the pronotum is as wide or wider than the head in the soldier (Figure 5) and “worker” (Figure 6).

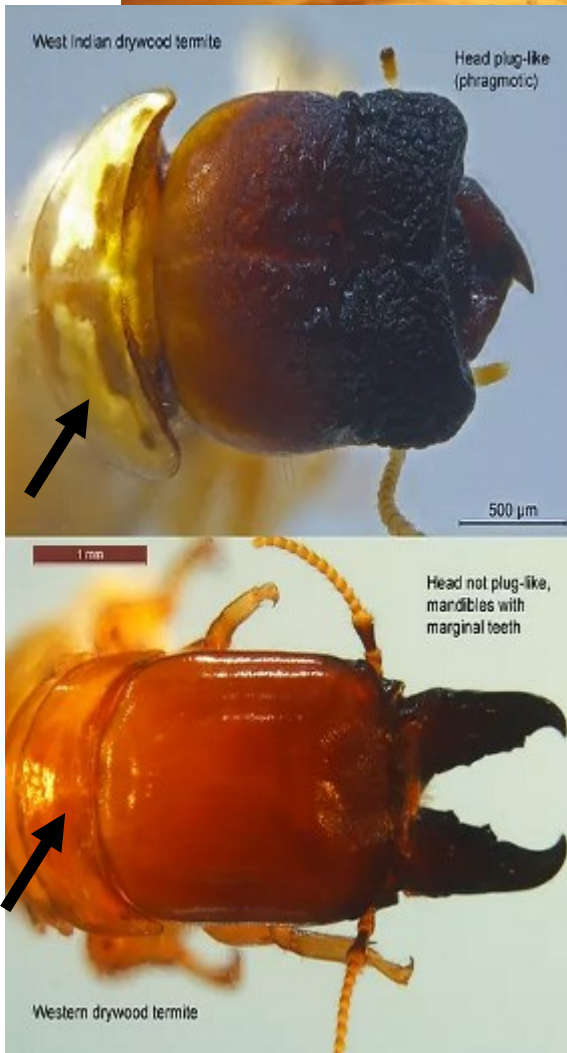


Figure 5. Soldiers of *Cryptotermes brevis* (above) and *Inisitermes minor* (below). Both of these drywood termites have pronotums (arrow) that are as wide as the head which distinguishes them from subterranean termites with a pronotum narrower than the head. Photo credit: Rudolf Scheffrahn, <https://www.rudolfscheffrahn.com/>



Figure 6. The pronotum is as wide as the drywood termite’s head and narrower than the subterranean termite’s head. The same is true of the soldiers and workers/“false workers”. Photo credit: Rudolf Scheffrahn, <https://www.rudolfscheffrahn.com/>



Figure 7. The West Indian powderpost drywood termite, *Cryptotermes brevis*, adult alate (top left), 6-sided fecal pellets (top right) and forewing (bottom). Note drywood termites have 3 or 4 darkened wing veins at the base and cross veins closer to the wing tip. Subterranean termites (not pictured) have 2 darkened wing veins going the entire length of the wing. Credit: Jackson Turner, UT E&PP.



Figure 8. Western drywood termite, *Incisitermes minor*, alates were flying when we opened the hatch to an East Tennessee attic. Significant damage and piled termite fecal pellets were found on the floor joists throughout the attic of a decades old infestation. Credit: Karen Vail, UT E&PP

After several years, a mature colony will produce winged forms (Figure 7), also called reproductives, alates or swarmers. Mating flights allow the drywood termite infestation to spread throughout the structure if the alates can find access to wood (Figure 8 and 9). In an East Tennessee home, we found extensive damage when the attic floor joists below the drywood termite pellet piles were probed with a knife.



Figure 9. Drywood termite fecal pellets piled on the attic floor joists. Normally, the fecal pellets fall to the ground, but the insulation on the sides of the board prevented the termites from creating a side gallery opening. Credit: John Cook, Massey Services

Because Tennessee is outside of the drywood termite range, many of us are unfamiliar with them, but they can be easily introduced into the state via infested furniture. While winged forms may be more noticeable, we are missing the early signs of these termites including piles of 6-sided fecal pellets and puckered wood and I need to make our citizens more aware.

I don't expect you to be termite experts, but it will be helpful for you to distinguish drywood termites from subterranean or at least to know there is a difference. If you are unsure of an insect identification, you can bring the specimens to your local county Extension office (<https://utextension.tennessee.edu/office-locations-departments-centers/>) for assistance. No matter which type of termites you find on school property, your pest management company should be informed of the infestation.

Modified from:

Vail, K. 2022. Drywood Termites in Tennessee and A Hack for Using a Portable Heater and IR Camera to Detect Infested Areas? *Insec(tc)ure: Are you insecure about your insect cures?* 3(3): 1-5.

<https://epp.tennessee.edu/wp-content/uploads/sites/267/2023/11/2022-03DrywoodV3I3.pdf>

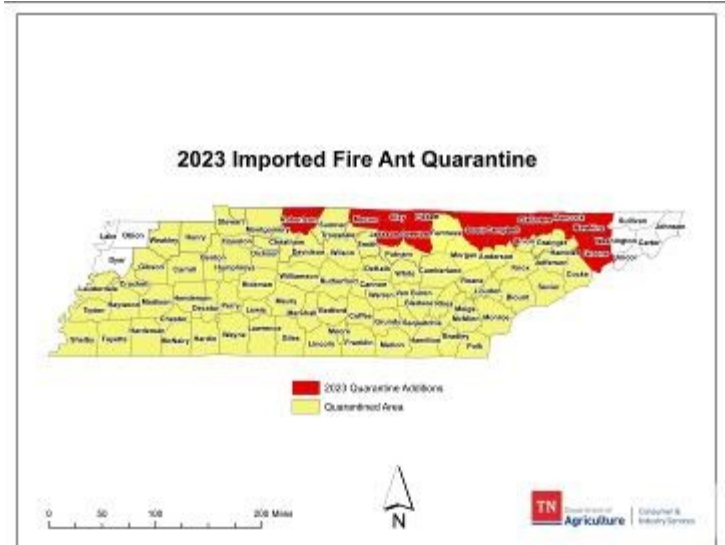
Vail, K. 2022. Interesting Drywood Termite Structural Infestation. *Insec(tc)ure: Are you insecure about your insect cures?* 5(3): 1-8. <https://epp.tennessee.edu/wp-content/uploads/sites/267/2024/03/2024-03DrywoodsV5I3.pdf>

Reminders

Fire Ant Quarantine Expands to 87 Counties—Let Us Know If You Want a Fire Ant Broadcast Bait Demonstration

In January 2024, the federal fire ant quarantine expanded in Tennessee to include 87 counties, leaving only five counties at the far northeastern corner and three at the northwestern corner of the state without fire ants. In areas where fire ants have been established for years and colony densities exceed 20 mounds per acre, it is recommended to broadcast a fire ant bait twice a year to maintain low populations on school properties. We wanted to remind you that we offer a presentation on the basics of fire ant biology and management and a hands-on demonstration of fire ant broadcast baiting.

Please let us know if you are interested in a fire ant baiting demonstration by contacting Jennifer Chandler at jchand11@utk.edu.



Seeking School Systems to Drag for Ticks

We want to thank Bradley, Claiborne, Cumberland, Hamilton, Monroe, Roan, and Warren counties, and Greeneville and Oak Ridge city school systems for participating in our tick dragging demonstrations over the past 3 years. We dragged for ticks on their school properties four times, approximately once per season, and then met/will meet with these school systems via Zoom to discuss the ticks present on their properties.

Most ticks have been found at the wood/grass interface, so it's important to keep these areas free of leaf litter and the grass mowed. Please ensure that students walk in the middle of trails to prevent contacting ticks on vegetation and for them to avoid the forests or trees lining the edges of ballfields and other fields. If it's necessary to go near these areas, tick repellent can help prevent bites. Checking for ticks after visiting these areas is essential to find ticks and remove them before they have a chance to transmit any pathogens. Tick removal techniques and more information on tick bite prevention can be found in our publication, *Managing Ticks on School Grounds*, at <https://utia.tennessee.edu/publications/wp-content/uploads/sites/269/2023/10/PB1895.pdf>.

Please let us know if you are interested in us dragging your school properties for ticks from Fall 2024 to Summer 2025 by contacting Jennifer Chandler at jchand11@utk.edu.

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For more information about IPM in Tennessee schools and other facilities, or to view past issues of *Pests and Pesticides in Child-serving Facilities*, please visit <http://schoolipm.tennessee.edu>

NATIONAL IPM INFORMATION

eXtension's Pests in the Home
<https://pestsinthehome.extension.org/>

National School IPM
schoolipm.ifas.ufl.edu/

IPM in Schools Texas
<http://schoolipm.tamu.edu/>

IPM Institute of North America
www.ipminstitute.org/

The Pest Defense for Healthy Schools Online IPM
 Training for School Employees
pestdefenseforhealthyschools.org

EPA schools
<http://www2.epa.gov/managing-pests-schools>

For further information about the IPM program at your school or in your county, contact your county Extension Agent or the school IPM Coordinator. For county agent contact information, please visit <https://utextension.tennessee.edu/office-locations-departments-centers/>

Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label and registered for use in your state.

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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