

Little known tips for identification and treatment of drywood termites

Drywood termites cause millions of dollars of damage annually across Florida. Their distribution is heaviest in southern and coastal areas, but infestations occur throughout the state. PCOs are very familiar with termite problems and treatments, but the biology and behavior of drywoods makes them a unique challenge.

Everyone knows how cryptic termites are, but drywoods take that

What are they and where are they hiding?

lifestyle to the extreme. Drywood termites live completely within their food source, which provides them great protection, but also makes detecting them very difficult.

Unlike subterranean termites, drywoods do not need to maintain a soil contact because they are able to extract all the moisture they need from the

wood they consume. Unfortunately, there are no mud tubes climbing up the walls to alert you to their presence.

Drywoods infest structural beams, window frames, wood floors, furniture and any other sound, dry wood they encounter.

In order to detect and eliminate drywood termites, you will need to be meticulous and calculated in your treatment. This article will help you know what you are looking for and how to best proceed once you have confirmed the presence of drywood termites.

University of Florida update

By Bennett Jordan, Roberto Pereira and Phil Koehler

Tip 1. Look for signs of drywood termites in every account. A thorough inspection is essential to diagnosing and treating any drywood termite infestation. There are multiple species of drywood termites in Florida, but determining which species is present is not important because treatment is the same for all species. There are three major signs of a drywood termite infestation: wood damage, fecal pellets and the presence of alates (swarmers). Most homeowners will not recognize there is an infestation until a swarm occurs.

Tip 2. Drywood termites swarm in the evening. Native subterranean termites swarm during the day; however, the Formosan also swarms in the evening. Drywood termite alates are very poor fliers that swarm in evening hours of late spring and are attracted to light.

Tip 3. Drywood termites usually have only a couple of hundred swarmers for a healthy colony; subterranean termites may have thousands. The number of alates is related to the size and health of the colony, but there are typically dozens to a couple of hundred per swarm. Drywood termite swarmers are reddish-brown in color and have two pairs of equal-sized wings which extend beyond their abdomen. Native subterranean termites are usually blackish.

Tip 4. Use magnification to see the wing veins. Under magnification, drywood wings can be differentiated. See **TERMITES**, page 13



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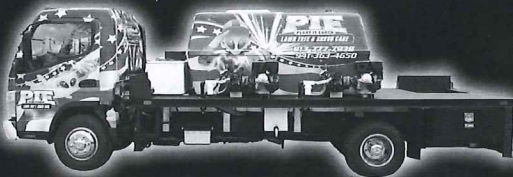
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from subterranean wings by their venation (drywood wings have three or four darkened wing veins along the fore margin compared to two for subterraneans). As a general rule, swarmers with lighter coloration swarm in the evening and species with darker alates swarm during the late morning to early afternoon. Wings are shed within minutes to a couple of hours after leaving the colony. A swarm occurring inside a residence can be identified by the wings strewn about, even if there are no termites to be found.

Tip 5. When drywood termites swarm, the colony is at least 5 years old. It takes 5-plus years from penetration of wood (through cracks, joints or other irregularities in the wood) by the royal pair until the colony has matured enough to produce alates. In the years before a colony can produce swarmers, detection is difficult. Since drywood termites live within their food source, they do their best to remove their feces from their "home."

Tip 6. Look for drywood termite fecal pellets. Before a colony is mature enough to produce alates, the clearest indication of an infestation is the presence of fecal pellets. Living inside of wood is a dry and forbidding environment, so drywood termites can-

not afford to waste water. Before termites excrete their feces, they use their rectal pads to squeeze as much water out of the pellets as possible and retain it. What remains are tiny, oval-shaped pellets with six indentations on the sides. (Cat feces are not oval-shaped and smell worse than drywood termite feces.)

Tip 7. Fecal pellets are not always the color of the wood that they are infesting. Pellets range in color from cream to red to black. The lack of water in the pellets helps preserve them for a long time, making it difficult to determine how long it's been since they were kicked out. Pellets from today are indistinguishable from ones that are years old.

Tip 8. Look for kickout holes. Instead of living a life surrounded by feces, drywood termites make small "kickout" holes in areas where they live and force the pellets out of the wood. These holes are tiny, less than 1mm in size. Pellets found on the ground can be traced to the kickout hole from which they came. The higher the kickout hole



Drywood termites and fecal pellets in a gallery. The pellets have different colors, even though the wood is only one color.

is from the floor, the more difficult it usually is to find. Pellets falling from several feet hit the ground with greater force and, as a result, the pellets are scattered and are not likely to be concentrated in a single pile. Pellets may also be pushed upward from below.

Tip 9. Use toothpaste to determine whether a kickout hole is active. Once the kickout hole(s) have been located, there is a simple and effective test to determine whether it is active: Spread a thin layer of

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Drywood termites push their fecal pellets out of their galleries through kickout holes. That way, they don't live in their own filth.

toothpaste over the hole, and monitor it. If there is still activity occurring around the hole, then the toothpaste will be pushed out of the way when fecal pellets are excreted. An inactive hole will remain covered by toothpaste indefinitely. Once you have found an active kickout hole, you have an idea where at least some of the termite activity is

occurring inside the wood and know where to target treatment.

Tip 10. Find and identify drywood termite galleries. Drywood termite colonies are incredibly small compared to native subterraneans, and consume much less wood per colony. This is good in the sense that damage occurs slowly. Drywood termites excavate galleries by eating along and across wood grain. The size and shape of the galleries vary, but are often very close to the surface of the wood, leaving only a thin and fragile layer between their gallery and the outside world. Galleries can be narrow enough to only accommodate one termite at a time or wide enough to allow several to pass at once. Painted and varnished wood may appear bubbled in areas where termites have eaten up to the surface.

Tip 11. Use tools to identify infested wood. Tapping on infested wood makes a hollow sound; tapping on a thin layer of wood will break through the surface and cause pellets to fall out. Detection tools using radar, acoustic emission, resistograph and X-ray technology can help pinpoint drywood activity and/or the location of galleries.

I FOUND THEM! NOW WHAT?

When it comes to treatment of drywood termites, there are two primary options: fumigation or spot treatment.

Tip 12. Monitored fumigation is the best treatment for drywood termites. Fumigation has long been a staple of drywood termite control, especially in South Florida. While the chemicals used in fumigation have changed from methyl bromide to sulfuryl fluoride, the results have remained the same. When executed properly, all life stages of drywood termites in the structure (or piece of furniture) will be killed during fumigation. The disadvantages of fumigation can be prohibitive to some PCOs and homeowners alike. Fumigation is costly, time-consuming and a major annoyance for homeowners. PCOs must have special licenses and certifications along with the equipment and manpower to perform fumigations. When an infestation is known to be widespread within a structure, fumigation is the only recommended treatment. Furniture can be treated with a fumigant or by spot treatment depending on the decision of the homeowner and the recommendations by the PCO.

Tip 13. Isolated and localized infestations can be treated by spot treatment. When an infestation is believed to be isolated or localized, a spot treatment may be administered. Termiticides used in spot treatments



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include foams and dusts which are drill-and-treat products designed to fill or coat galleries with active ingredient. Devices used to freeze or electrocute termites are used to a lesser extent. Drywood termites are confined to a network of connected galleries so product that hits part of the gallery may eventually wipe out the colony. While spot treatments are much cheaper, faster and less restricted than fumigation, they are also not as reliable. There is always a great deal of risk associated with spot treatments because you cannot be certain that you killed all of the termites. What appears to be a small, contained drywood infestation may be more complicated than it seems. The difference in price between fumigation and spot treatment is significant, but so is the assurance in knowing the infestation has been controlled. However, there are new technologies available which improve your ability to identify and control localized infestations.

Tip 14. Use TermaTrac to determine if infestations are localized or widely distributed. We have been using the radar function of the TermaTrac T3i (TermaTrac, Australia) to get real-time evidence of locations and relative termite activity (movement) levels. Spots of activity can be marked

with tape and radar readings can be saved, which allows a PCO to return later and measure the exact spot to compare differences in activity pre- and post-treatment. The difficulties and uncertainties of spot treatments for drywood termite infestations can be lessened by employing a radar device like the TermaTrac T3i in conjunction with a drill-and-treat method. The ability to confirm that there is no movement months to years after treatment can give you confidence that you controlled at least part of the infestation.

SUMMARY

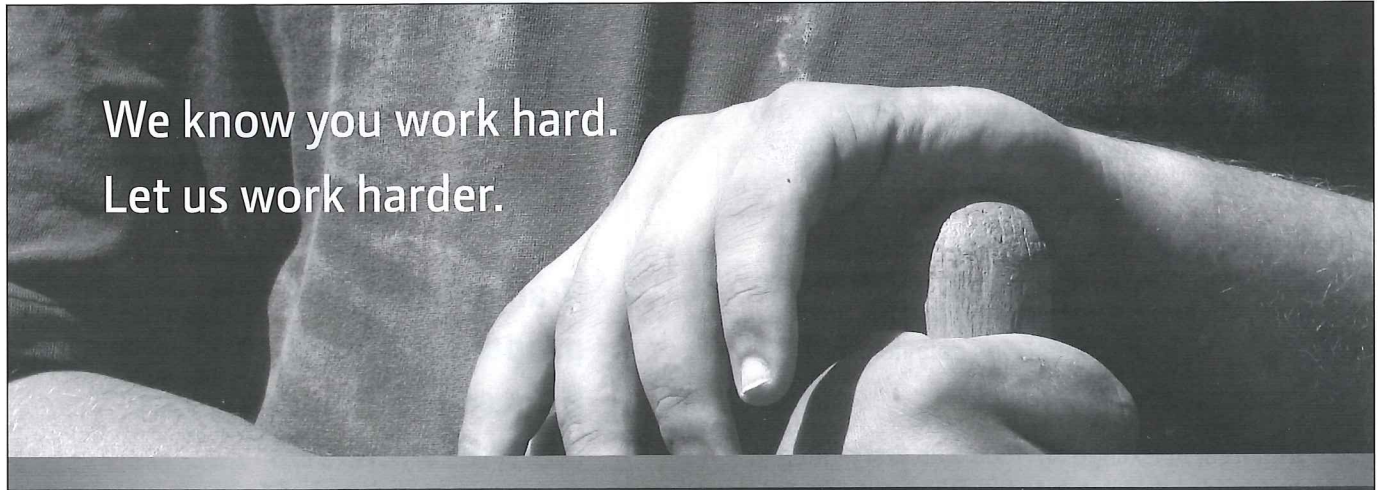
Drywood termites present many challenges to PCOs in Florida. They are hard to find, difficult to control and each infestation presents unique problems. A thorough inspection is important in determining the size and scope of the infestation. It is only after careful consideration and discussion that the PCO and homeowner can best decide which treatment method is appropriate for that situation. Fumigation is the only sure-fire method of drywood termite elimination, but tools available for spot treatments are improving all the time. In many ways, the decision



Table infested with drywood termites. TermaTrac was used to map out the infestation in the wood. Each number is a location where termites were active.

comes down to how much risk you are willing to take. Annual call-backs for drywood termite swarms may be a reality for spot treatments, but one done successfully will have saved everyone time and money. The decision is in your hands.

Bennett Jordan is a Ph.D. student studying drywood termite control as part of his dissertation; Roberto Pereira is an associate research scientist; and Phil Koehler is a professor — all with the University of Florida-IFAS's Entomology and Nematology Department in Gainesville. FPP



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