

# Clemson University Department of Pesticide Regulation

## Is It Active or Not, And How Do You Know?

### *A Guide for Applicators*



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Pesticide Regulation

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Bulletin 24

Each year, the Department of Pesticide Regulation investigates concerns and questions about wood-destroying organism (WDO) activity. Determining activity is both an art and a science. It requires good judgment and a knowledge of the insect's life history. Section 27-1085 of the Rules and Regulations for the Enforcement of the SC Pesticide Control Act details criteria for determining activity of several wood-destroying organisms. This bulletin will cover determining the activity of wood infesting beetles, drywood termites, and subterranean termites.

The term "powder post beetle" is used collectively to describe three different families of beetles: anobiids, lyctids (true powder post beetles), and bostrichids (false powder post beetles). While there are differences in their biology and the type of wood they attack, their damage appears similar.

Most of the major beetle pests of wood start their destruction by laying eggs in holes, pores, or in cracks in the wood. After hatching, the tiny grubs bore into the wood, where they remain until they complete their development and emerge as adults, then the larvae eat the wood for energy. The larvae will leave a material called *frass* in their tunnels. Frass is loosely defined as the sawdust-like powder that comes out of the south end of a north-bound larvae. As you might expect, the consistency and appearance of frass varies from species to species of beetle.

The Department of Pesticide Regulation does not consider "wood borers" as an acceptable term when disclosing an infestation of beetles—you have to specify which type it is. The Rules and Regulations for the Enforcement of the SC Pesticide Control Act provide explicit guidance for identifying and determining activity of wood-infesting beetles. See Section 27-1085 I (4) a 1-3. If what you see does not meet the criteria set forth in the Regulations, you cannot diagnose an infestation as "active." If you see live beetle larvae or beetle adults, you likely have an active infestation. Active infestations are determined by the following criteria:

- **Powder post beetles:** If the frass is "streaming" (stuck to the wood below emergence holes or piled beneath emergence holes), then you have an active infestation. If you have emergence holes without streaming frass or old frass in galleries or protected locations, then you do not have an active infestation.
- **Old house borers:** Streaming frass is not enough evidence to call an old house borer infestation as "active." Fortunately, older larvae tend to tunnel near the surface of the wood and are relatively easy to collect. Capturing one is enough evidence to establish an active infestation. Alternatively, larvae make a distinctive gnawing noise (like a clicking or rasping sound), so hearing the noise would also be enough evidence to determine an active infestation.

There are also a few tricks that you can use to determine if you have an active infestation when things aren't so clear-cut. Mark old emergence holes with a pen or spray paint, or cover them with tape. If new holes appear, you have an active infestation. This technique works well when dealing with the larger beetles, such as the old house borer. If you see new frass, sweep or vacuum it up. If it reappears, then you likely have an active infestation. You may try laying black plastic down on the floor of the area to improve the visibility of the frass.

## Drywood Termites

Drywood termites are nonsubterranean termites: they live inside wood and do not make contact with the soil. They get the moisture that they need to survive from the humidity in the air. For this reason, drywood termites are most common along the humid coastal areas of South Carolina.

Drywood termite colonies are much smaller than those of subterranean termites. A mature colony may only have a few hundred to a few thousand members. It usually takes many years for a colony to have swarmers. If conditions are favorable, a male and female swarmer (king and queen) will begin a colony in a crack or other opening in wood.

Drywood termite infestations are usually confined to a small area and may be found in structural wood, trim, hardwood floors, furniture, or other wood items. Drywood termites readily form new colonies from producing swarmers, so older structures are more likely to have multiple small infestations than newer ones. Unlike subterranean termites, drywood termites eat both across and with the grain of the wood. Drywood termites form their galleries up to the surface of the wood, leaving only a thin layer intact.

The fecal pellets are six-sided and about 1/16 of an inch long. They may be black or cream-colored or a combination of both. Fecal pellets are often found in piles and look like tiny stones.

A drywood termite infestation is determined to be active based on the following criteria:

- ▶ If there are live drywood termites inside of the structure;
- ▶ If live or dead swarmers are repeatedly found inside of the structure; or
- ▶ If there is a repeated accumulation of fecal pellets in an area.

## Subterranean Termites

Termites are among the most costly of all the insect pests affecting human beings. Eastern subterranean termites are the most common of the native subterranean termite species found in South Carolina.

Like all subterranean termites, Eastern subterranean termites prefer to eat spring wood because it is easier to chew than the summer wood. Spring wood is located between the growth rings; therefore, subterranean termite damage often has a "layered" appearance.

Typical Eastern subterranean colonies consist of about 60,000 to 300,000 or more workers, but much larger colonies are possible. In South Carolina, Eastern subterranean termites usually swarm from February until May. They normally swarm on warm days after a rainfall. The life span of an individual termite is probably two or three years. A termite colony, however, may persist almost indefinitely.

The Department of Pesticide Regulation has determined that subterranean termites are active (or we presume them to be active) if:

- ▶ There are live insects present;
- ▶ No treatment has been performed and there are unbroken shelter tubes
- ▶ If treatment has been performed and there are intact shelter tubes present the decision is more difficult. It is possible that the shelter tubes were not removed during the treatment (a violation of the standards). It is also possible that the tubes were built after the treatment, and represent a continuing active infestation. Inspectors should use their experience and judgment as a guide and should thoroughly explain the reasons for their decisions in all questionable situations.

Please see the Rules and Regulations for the Enforcement of the South Carolina Pesticide Control Act, Section 27-1085, for more information. You may download a copy from our website at [www.clemson.edu/dpr](http://www.clemson.edu/dpr).

*If you have any questions about determining the activity of termites or other wood destroying organisms, please feel free contact one of our Field Offices and the numbers listed to the right, or call our main office in Pendleton at 864.646.2150.*

***We'll be happy to help!***

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