



Residential, Structural and Community Pests

Department of Entomology
North Carolina Cooperative Extension

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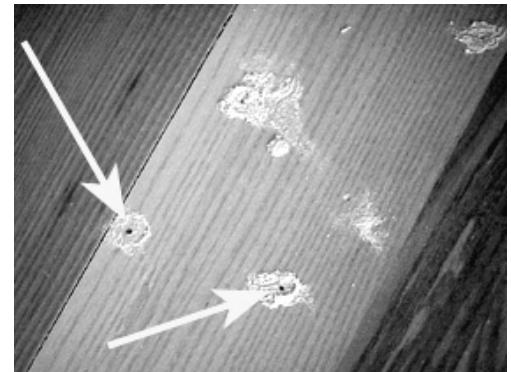
Fact Sheet on Powderpost Beetles and Wood-Inhabiting Fungi

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Powderpost Beetles

We use the term “powderpost beetles” for several groups of small wood-boring beetles.

In North Carolina, our primary concern is with anobiid (“an-oh-be-id”) powderpost beetles, which attack the “softwoods”, such as spruce, pine and fir, that are used to make floor joists, wall studs and other structural lumber. Lyctid (“lick-tid”) powderpost beetles attack only hardwoods, such as oak, hickory, and maple. They tend to be a problem with antique furniture, cabinets, wooden floors and some moldings in houses.



The term “powderpost” refers to the type of damage caused by the beetles. Infested wood may look fine on the outside. Only months or years later do we discover the damage. We rarely find the actual beetles. Typically, the only indications of a powderpost beetle infestation are small round holes, about $\frac{1}{32}$ – $\frac{1}{16}$ inch in diameter scattered over the wood surface (as seen in the accompanying picture). In some cases, only one or a few boards are infested. In other instances, several joists may show sign of powderpost beetle activity. At first sight, people often assume that these holes are made by insects boring into the wood. The holes are actually made by adult beetles exiting the wood after they complete their life cycle. As the beetle emerges from the hole, it pushes out frass (yellow arrows in image) that will be found streaming from these holes or on the ground beneath the infested boards or surrounding the holes on horizontal wood. The frass of the lyctid beetles looks and feels like talcum powder. The frass of anobiid beetles is powdery but has a gritty texture. Frass that is yellow and caked is usually considered to be “old” and likely an indication an infestation that is no longer active. You may find exit holes and frass almost any time of the year, particularly in heated buildings or in crawlspaces. However, the peak time to watch for emerging beetles occurs in **May through August**.

You cannot simply look at a piece of wood to determine if the damage is severe enough to require repair or replacement. Probing the wood may give you some indication of the extent of the damage. If you are concerned about the condition of structural wood, such as floor joists, you should contact a structural engineer.

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Powderpost Beetle Control

Many powderpost beetle problems are related to high moisture (near 20%) in the wood, particularly in crawlspaces. Moisture readings should be taken from floor joists by a pest control operator when he/she inspects your home. You can reduce moisture in the crawlspace by improving the ventilation and/or installing a 6-8 mil plastic moisture barrier covering 70-80% of the soil. In some instances, the crawlspace may be "closed" or encapsulated which is a more elaborate process that requires the installation of a dehumidifier.

Spraying the wood with an insecticide is the most common method of chemical control for powderpost beetles. Pesticides containing "borate" are especially effective against powderpost beetle because they penetrate the wood and kill beetles within wood, as well as killing adults entering or exiting the wood surface. If you are concerned that wood behind walls or in other inaccessible areas is infested, then it may be necessary to fumigate. If you find activity in late fall or in the winter, you might want to wait until spring before treating so you can tell if the problem is limited only to that area or is more extensive.

Fungi Associated with Wood

There are several types of fungi associated with wood, but not all of them actually cause damage.

Surface Mold and Mildew

Mold and mildew on floor joists usually indicates high moisture in the crawlspace. However, **mold and mildew do not cause wood to decay**. Chemical control is not needed to protect the wood, but you should take some steps to lower the moisture in the crawlspace (the same steps outlined for powderpost beetles).

Sapstain Fungi

These fungi are similar to surface molds, except that the discoloration goes deeper into the wood. The wood may have a blue, black or gray color; however, **the staining fungi do not weaken the wood**. Sapstain fungi indicate that the wood was wet at some time. However, once the wood dries, the fungus becomes dormant and stops growing. No chemical control measures are needed.

Brown Rot and White Rot

These fungi actually cause structural damage to

wood. They often produce a white cottony growth on the surface of the wood. Brown rot is one of the most common types of wood-decaying fungi. As the wood decays, it darkens, shrinks, and twists, with cracks forming across the grain of the wood. Finally, the wood becomes dry and powdery. Wood decayed by white-rot fungi has a bleached appearance and is fibrous and soft (sponge-like). Wood that is saturated with water (30% moisture readings) will rot. If the wood moisture drops below 20%, then these fungi will not grow. Brown and white rot fungi can be controlled by removing the source of moisture that allows them to grow (e.g., by improving ventilation or drainage, repairing leaks, etc.).

Spraying wood with chemicals should not be a total replacement for moisture control. If the moisture source cannot be eliminated, all decayed wood should be replaced with pressure-treated wood.

Water-Conducting Fungi

Most wood-decaying fungi only grow on moist wood and do not attack nearby dry wood. However, there are some brown-rot fungi, sometimes called "water-conducting fungi" which can conduct water for several feet through root-like strands to moisten dry wood. The most common type of water-conducting fungus in North Carolina is *Meruliporia incrassata* (sometimes called by its former name "*Poria*").

These fungi can cause extensive damage in 2-3 years. The damage is similar in appearance to brown rot. The problem is most common in new or remodeled houses. In order to control water-conducting fungi, you must find and eliminate the source of moisture that supports fungal growth. The top priority should be to get the wood moisture content **below 20%**. Untreated wood in contact with or near the soil is most vulnerable. Where the fungus grows from a porch, the soil should be removed from the porch next to the foundation wall to prevent continued growth of the fungus into the house. Untreated wood should be at least 8 inches from the soil. If this is not possible, then treatment with a borate pesticide can be used.

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