



## Powderpost Beetle Control Options Insecticides Are Not Always Necessary

You've determined that you are indeed dealing with an active powderpost beetle infestation. You know this because you marked all the old exit holes and cleaned up the frass. Now you have new light-colored frass beneath new exit holes. Before you decide on a control method, you need to know which powderpost beetle you are dealing with. Why? It may affect how extensively you treat and the method you use, or even whether you treat at all. If you don't have adult beetles present, knowing the kind of wood infested will give you a clue. Anobiids infest both softwoods and hardwoods, and lyctids infest seasoned hardwoods.



Replacing a section of powderpost beetle-infested and damaged wood is a nonchemical control option (Pinto)

### Nonchemical controls -

1) *Replace infested wood.* This is an option if you're pretty sure the infestation is limited. Sometimes you can successfully replace just a couple of infested boards. If you discover that the damage extends further than you thought, you may choose to use insecticides instead (see next page). Or, you might choose to remove the wood, treat it, and then replace the same wood if it is of value to your customer and damage is minimal.

2) *Reduce wood moisture* to levels below which the larvae need to survive. Drying out the wood is most effective against anobiid powderpost beetles that need wood moisture levels above 13%. This could be accomplished by installing a moisture barrier in a crawlspace, or by adding vents and increasing ventilation. Make sure any leaks, high humidity, or drainage problems are corrected.

3) *Seal unfinished wood.* While this won't kill larvae already in the wood, it will prevent reinfestation. Powderpost beetles will not lay their eggs on wood that has been sealed, painted, varnished, or waxed. Beetles already in the wood may still emerge after the wood is sealed unless it is treated before sealing. If you have lyctids emerging from

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## Powderpost Beetle Control...continued

a sealed hardwood floor, there's probably no reason to treat since the beetles likely were in the flooring before it was sealed and installed and they cannot reinfest the already sealed wood.

4) *Heat and cold treatments.* High heat (120-140° F. or 49-60° C.) for 6 hours kills all stages of powderpost beetles. Temperatures of 0° F. or -18° C. for 72 hours will also kill powderpost beetles. The time needed for temperature treatments varies depending on the thickness of the infested item, and the treatment requires close monitoring to make sure items are not damaged.

**Insecticide applied to the wood surface** - Insecticide surface treatment is a treatment option for bare, accessible wood. Most commonly used are borate products that penetrate into the wood. Borate application kills larvae tunneling in the wood or attempting to tunnel into the wood, kills beetles as they bore through the wood to exit, kills beetles wandering on the surface of the wood, and also acts as a feeding deterrent. Treatment is most effective just before adult beetle emergence, which for anobiids would be May in most areas. Be sure to treat all sides of the wood if possible. Tests have shown that beetles can emerge successfully on the untreated backside of the wood after treatment. In hard-to-reach areas like wall voids, borates are sometimes applied as penetrating foam that expands to fill an area.

For borates to penetrate the wood, it must be bare, unpainted, or unsealed. Structural wood like joists and studs are good candidates for borate treatment. Borates can usually be used on wood that has been treated with a water repellent if the wood is pressure-washed first. A wood floor requiring treatment would have to be sanded first; other finished wood items may have to be stripped, treated, and then refinished.

**Wood injection** - The galleries of powderpost beetle larvae can be injected with aerosol insecticides labeled for that use. Injection holes are drilled into the infested wood approximately every 8 to 12 inches (20-30 cm). Gallery injection kills the larvae in the wood but pupae can continue to develop and adults can emerge for a short time after treatment.

**Fumigation** - The main reasons to fumigate are if the infestation is in an inaccessible area where the wood cannot be reached for treatment, if the infestation is extensive, if individual items of value are infested such as antique furniture, if rapid control is desired, or if the customer wants to be certain that the infestation is eliminated. Fumigation for powderpost beetles can range from whole structure fumigation to fumigation of individual items. Individual infested items can be fumigated under a tarp, or in a chamber, vault, or trailer designated for that purpose. Fumigation kills all stages of powderpost beetle, but leaves no residual to prevent reinfestation. Sometimes, an insecticide surface application is applied to the wood after fumigation to prevent reinfestation.

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# Using Rodenticides Around Schools

## EPA's New Ruling Changes How and Where You Can Bait

Inside schools, the choice for rodent control is snap traps or glue boards. Since we avoid the use of rodenticides in schools, more emphasis has been placed on rodent control around the outside of the school. Traps (inside tamper-resistant bait stations) should still be the first choice for rodent control on school grounds. Sometimes though, rodenticides are necessary. EPA's recent Rodenticide Risk Mitigation Decision (RRMD) has meant some changes in how we use rodenticides around schools. (Note: Local rules may prohibit the use of rodenticides around a school.)



In its initial decision, EPA limited the use of rodenticides around a structure to no further than 50 feet away. This was intended to protect wildlife but it meant that PMPs might be forced to place rodenticides closer to a school than they would like. Largely through the lobbying efforts of the National Pest Management Association, EPA agreed to extend that baiting distance to 100 feet from a structure. Note that labels on older rodenticide products may still limit the use distance to 50 feet from a structure and you must follow the directions on the label of the container you use, even though you know there has been a change.

The change also allows baiting of burrows that are more than 100 feet from a structure using first-generation anticoagulants and non-anticoagulant professional products. The main concern when baiting for rodents around schools is to prevent small children from finding and eating the bait. Whenever you use a rodenticide bait around a school, ask yourself, "Is it possible for a child to get at the bait?" Follow these guidelines:

- Choose a bait formulation that doesn't look like people food and that contains Bitrex or another flavoring agent that gives it a bad taste.
- Rodenticide block or soft bait packs should be the primary rodenticide formulation used in bait stations since these can be anchored on rods inside the bait station to prevent rodents from dragging the bait out of the station.
- Under RRMD, all outdoor above-ground bait applications (except burrow applications) must be inside tamper-resistant bait stations.
- Bait stations must be anchored securely to the ground or other surface to prevent them from being moved or the bait shaken out. Lids should be locked or secured in some way.
- Under RRMD, you cannot use rodenticide blocks, soft baits, or place packs to bait burrows because rodents can relocate these. Use loose bait in burrows instead.

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# Rodent-hoarded Food and Stored Product Pests

Stored product pests like Indianmeal moths and sawtoothed grain beetles are sometimes found infesting items outside of the kitchen, items that don't actually qualify as stored foods. A common, and easily overlooked, source of stored product pests is rodent-cached food in hidden voids.

Rats, mice, and squirrels collect pet food or bird seed and may hoard many pounds of it in hidden sites. When there is food competition, rodents hoard food near their nest so they can eat it in a protected location. For mice, this often means a food cache behind the kick plate under the sink or in a kitchen wall void, usually within 10 feet of their nest. Inside furniture, appliances, and the void under the bathtub are other mouse hoard sites. Rats cache their food anywhere, and for squirrels, the attic is a prime hoarding site. Sometimes, rodents hoard more food than they could ever use. One PMP found 30 pounds of insect-infested dog food that had been hoarded by pine squirrels in the attic of a heated garage.

Some stored product pests will infest hoarded food right away (sometimes it's already infested when the rodents hide it). Other secondary food pests like sawtoothed grain beetles move in once the food is old or broken. And if the hoarded food gets wet, a whole new group of fungus-related beetles, flies, and mites can move in. A rodent food hoard can accumulate over many months and can result in hundreds of insects finding their way out of the hoard and into living space.

In most cases you can't solve the food pest problem permanently without first locating the site of the cache, opening the void, removing the food...and only then treating the site. Then getting rid of the rodents is your next job.

Sometimes your client can help you when you can't seem to locate the source. Have him put a mark on a floor plan of the house each time he sees one of the pests. Or try sticky trap monitors. If you determine that lots of pantry pests such as drugstore beetles, granary weevils, Indianmeal moths or mites seem to be emerging from a certain void, the source could be rodent-hoarded food.

## Quarterly Review Answers

Here are the answers to the last *Quarterly Review*. The date following each answer identifies the 2012 issue in which the answer can be found.

1. FALSE (12/23)
2. a) (10/14)
3. TRUE (11/25)
4. b) (10/14)
5. FALSE (12/23)
6. d) (12/23)
7. d) (11/25)
8. b) (12/23)
9. TRUE (12/23)
10. a) (11/11)
11. TRUE (12/9)
12. FALSE (11/11)
13. TRUE (10/14)
14. d) (10/28)
15. FALSE (11/11)
16. TRUE (11/25)
17. TRUE (10/28)
18. c) (12/9)
19. TRUE (10/28)
20. d) (11/11)

BONUS: house fly

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