

## Pests who don't take winter off

By **Bruce Wenning**/ Special To The Tab

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Very few insects, especially pest species, are active at low temperatures. Most insect species in New England feed, mature and mate during the warmer months. The few that are active during the colder months have physiological traits that protect them from the cold. These traits lead to the production of specific sugar and alcohol compounds that circulate in their blood and prevent the insect from freezing when there is a gradual drop in air temperature.

In our area, there are three important insect pests that can tolerate cold weather. The first is a dull brownish moth that is drawn to house lights at night. Called the Winter Moth (*Operophtera brumata*), the males can be seen by the hundreds covering the sides of buildings, doors, and windows at dusk and dawn. (The wingless females are flightless.) This pest, which resembles our native Fall Cankerworm Moth - and makes its appearance at about the same time - is new to the area. However, Winter Moth is well known on the South Shore and Cape Cod, where oaks, maples, crabapples, cherries and other trees and shrubs have been partially to completely defoliated over the past few years.



Winter moth males can be seen covering the sides of buildings at dusk and dawn.

After mating, Winter Moths leave clusters of eggs in tree bark, which begin to hatch in March. The yellow-green larvae crawl up the tree, inchworm style, to feed on buds and leaves until mid-June, creating holes in leaves and loss of flower petals. The larvae extrude a long silken thread that functions like a parachute to transport them from one tree to another. After they fall to the ground and penetrate the soil, they spin a cocoon, undergo pupation, and emerge as adult moths in late fall. Recently, the moth has been re-emerging in great numbers here. It is essential to understand the timing of this complex life cycle to address the problem. There are only short-term solutions available now (for specifics see the Web site listed at the end of this article). Fortunately, a promising long-term solution to this problem is being tested by Joseph Elkinton, PhD, an entomologist at U Mass/Amherst. His research will be described in detail in a follow-up article on these pages.

The second cold weather insect pest is more familiar - the Hemlock Woolly Adelgid (*Adelges tsugae*). This sap-sucker attaches itself at the bases of hemlock needles and inserts its piercing mouth-parts into the needle base and siphons sap. It is a specific pest of Eastern hemlock (*Tsuga Canadensis*) and Carolina hemlock (*T. caroliniana*). This accidentally introduced insect, originally from Japan, has devastated hemlock stands in forests of Connecticut and further south. It is moving northward into southern New Hampshire, Maine, and Vermont. Both immature and adult stages are very small and are inactive during the summer months. They start feeding and maturing into adults during the fall. From January to mid-April, females produce egg masses secured in tiny "cotton

balls" located at branch tips, white clusters that are easy to spot in the winter. The best time to treat these hemlocks is from late March to mid-September. Horticultural oil will suffocate the eggs, nymphs, and adults of this pest if you apply the oil thoroughly. Horticultural oil is very low in toxicity and is used and approved by organic farmers and gardeners. It kills all stages of the adelgid, including the egg stage by suffocation, unlike traditional petroleum based insecticides. Insect pests treated with oil do not build up resistance to this compound. However, petroleum based insecticides are neurotoxins and with overuse will cause insecticide resistance, health problems to humans and other animals and contaminate the environment.

The third cold weather pest, which feeds on turf grass roots, is the European chafer (*Rhizotrogus majalis*). The adults are brown colored beetles that emerge from the soil by mid June; the immature stage is called a white grub and is similar in appearance to the Japanese beetle (*Popillia japonica*) grub. Because European chafer adults mostly fly during the night to lights they frequently go unnoticed by people. The lawn damage caused by the grubs is noticed by most people, although it is frequently blamed on the Japanese beetle grub. But not all grubs are Japanese beetles. In fact, there are two more turf grass root-feeding white grubs common in our area, the Oriental beetle (*Anomala orientalis*) and the Asiatic garden beetle (*Maladera castanea*).

The European chafer can be much more devastating to home lawns than the other three grub species because it is the only grub that can feed during cold weather, causing turf grass root damage in the early spring and into the fall when the other grub species are inactive. According to Patricia Vittum, Professor of Entomology at UMA/Amherst, European chafers have been observed feeding on turf grass roots under snow as early as February, much earlier in the season than the other three grub species.

For more information on the identification, control and life cycle details of these insect pests visit, [www.UMassGreenInfo.org](http://www.UMassGreenInfo.org)

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