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Managing Boxelder Bugs

Clyde Sorenson, Associate Professor, Entomology,
North Carolina State University
Darley Jeppson, Community Based Instructor/Horticulture Assistant and
Kerrie B. Badertscher, Western Area Horticulture Specialist
University of Nevada Cooperative Extension

Boxelder Bug Quick Facts

- Boxelder bugs do not significantly damage maple trees or other plants.
- Boxelder bugs prefer to feed on maple tree seeds rather than the tree.
- Boxelder bugs congregate in large numbers on and in structures in the fall.
- Control boxelder bugs by removing female boxelder trees, excluding the bugs from structures, vacuuming them up and disposing of the vacuum bag, dousing them with hot water, using a soap spray or applying pesticides.
- Boxelder bugs rarely bite humans.

Boxelder bug, *Boisea (Leptocoris) trivittatus* Say, and the western boxelder bug, *Boisea rubrolineatus* Barber, are common insects that often infest Nevada's landscapes. They frequently occur in large numbers in gardens where female boxelder trees grow or are nearby. While they may cause minor damage to maples and other plants, they are usually considered a nuisance rather than a threat to plants. They become a nuisance because of their tendency to congregate in and on houses and other structures late in the fall, just before they hibernate for the winter.

Both species have piercing, sucking mouthparts. The adult boxelder bug is brown-black with three red lines behind its head and red veins in its wings. Its abdomen beneath the wings is red. The adult western boxelder bug is very similar, but has many more fine red lines on the dorsal surface of its wings (Figure 1). Immature nymphs of both species are red and look like miniature, wingless versions of the adults. As the nymphs grow and mature their black wing pads enlarge and grow darker.

Figure 1. Adult western boxelder bug, *Boisea rubrolineatus.*

Range and Habit

The boxelder bug is found in Nevada, and throughout the United States and Canada wherever boxelder maples (*Acer negundo*) grow. The western boxelder bug occurs only in central Nevada, Arizona, Texas, and also along the West Coast extending to British Columbia.

Both species prefer feeding on female boxelder trees, but they also feed on other maples, including silver maple trees (*Acer saccharinum*); fruit trees; grapes and strawberries. The western boxelder bug may damage crops of pears and nut trees such as pistachios and almonds. This is not an issue in northern Nevada.

Life History

The life histories of both species are similar in that they may have two generations a year in Nevada. In the fall, adult boxelder bugs leave their host and congregate en masse in a warm location, usually the south and west exposures of tree trunks and structures, before seeking a warm, dry, protected place to overwinter.

Numerous adults may also congregate en masse in sheltered places, such as under rocks, steps, decking or sidewalks; behind house siding; and within cracks and crevices. These sheltered sites usually have a southern or western exposure.

Adult bugs are inactive during the winter but frequently come out from hibernation during sunny, warm days. They may attempt to feed on plants during this time. When temperatures drop at night, or for long periods, the bugs go back into hibernation.

In the spring, when temperatures are warm and stable, and as buds of boxelder trees open, females lay small red eggs on leaves of trees and shrubs, on grasses, and in bark cracks and crevices near female boxelder trees. Individual eggs are oval, shiny and about 2 millimeters (.08 inches) in length. The first instar is the stage when the insect emerges from the egg and sheds its exoskeleton. First instar nymphs are very small, wingless and bright red with minor black markings. Nymphs feed on leaves and succulent twigs, but they prefer to feed on developing seeds of boxelder or maple trees.

Overwintering adults feed on seeds from the previous season's seed crop. When new seeds are available, nymphs and adults of both species feed on these seeds throughout their life cycle. In mid-to-late summer, the bugs may feed on fruit of nearby apple, apricot, pear, peach, and plum trees.

Damage

As mentioned, boxelder bugs do not cause significant damage to boxelder trees or to other maple trees. The most significant impact of boxelder bugs in northern Nevada is their sheer numbers. Thousands of these insects congregate each year in and around homes and on buildings during the late summer and early fall near where boxelder trees and other maple trees are planted. They may enter homes and stain light-colored fabrics, such as draperies, or walls with their feces. It is rare, but on occasion, they have been reported to bite humans.

Prevention

Prevent boxelder bugs from entering the home by caulking around windows, doors, vents, siding and foundations. Seal crevices, cracks and holes that would allow boxelder bugs to enter the home. Repair window and door screens to prevent them from entering. Do this in the summer and fall, before they begin congregating and looking for a place to hibernate.

One of the easiest methods of controlling boxelder bugs is to avoid planting female boxelder trees and maple trees that produce seeds. When purchasing a maple tree, ask the local nursery professional for a male boxelder tree or a male maple tree. A long-standing seedless male boxelder is the cultivar 'Baron'. This cultivar does not produce seeds. Other male cultivars are also available.

Of course, removing nearby female boxelder trees will discourage boxelder bugs from remaining in an area. Many desirable ornamental replacement species are available.

Controls

Very few vertebrate predators, such as birds, feed on boxelder bugs because they produce an unpleasant odor (and probably taste) when crushed. Although there are parasites and diseases that attack boxelder bugs, they do not have much impact in controlling their populations. There are cultural measures that can be taken to control populations.

- Rake up and dispose of fallen seeds from boxelder and maple trees in spring as soon as they drop. This reduces the food source and thus the insect's ability to feed.
- Clean up fallen leaves and litter to reduce the number of insects and expose remaining insects to the environment and the few predators that may feed on them.
- Cover woodpiles with plastic to eliminate a place to hibernate.

Any boxelder bugs that do manage to invade the home can be picked up using a vacuum cleaner with a bag. Seal and dispose of the bag in a fire or the trash, or bury it. Avoid crushing and handling the insects due to the offensive odor they give off.

Boxelder bugs may be controlled with soap or insecticides. Soap works better in cool weather and is generally preferred because it is less toxic to humans than other insecticides.

Control aggregating boxelder bugs outside by mixing 5 tablespoons of liquid or ½ cup of dry laundry detergent into 1 gallon of water, and spraying the mixture directly on the insects. Avoid spraying vegetables and herbaceous plants as the soap may damage leaves. This soap spray will only kill insects that are in direct contact with it. It has proven to be effective, but you may need to respray after several days if bugs reappear. If the boxelder bugs have congregated on wood siding, test an area to make sure the soap spray does not stain the wood.

Boxelder bugs may also be controlled with insecticides. This should be a last resort, as the

damage boxelder bugs cause is minor. Use insecticides when the bugs become unmanageable. First, try the least toxic materials, such as oil- and soap-based products. Then use traditional products only if the less toxic materials are not effective.

Insecticidal sprays can be applied around the house foundation, and in crevices and cracks outside the house. Only insecticides registered for use inside the home may be applied inside the house. It is preferable to vacuum up the bugs within living quarters, barns and animal facilities to avoid the toxicity of the spray within an enclosed space.

There are hundreds of pesticides registered for control of the boxelder bug in the state of Nevada. Remember, when applying any pesticide, always follow the manufacturer's recommendations. Read and follow the label: it is the law! A licensed pest control operator will have numerous pesticides available for killing boxelder bugs by direct contact and to prevent them by spraying the bug's overwintering habitat.

In addition, if you prefer not to use a pesticide, applying boiling water at 165 degrees Fahrenheit to 180 degrees Fahrenheit to congregating insects on sidewalks, walls or the soil has been reported to be effective. Use caution whenever working with very hot water.

Also, in extreme cases, ask a pest control professional to apply a residual insecticide to the exterior walls and foundation of the house, where the bugs congregate. Do this in the fall to discourage the bugs from landing on such sites.

Summary

Boxelder bugs can be controlled with proper preventive measures and cultural and chemical practices. However, before purchasing and applying any pesticide, always make sure you have properly identified the insect. Contact your local University of Nevada Cooperative Extension office for assistance.

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