

BOXELDER BUGS

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Boxelder bugs, *Boisea trivittatus*, are familiar insects to most people. They are generally not noticed during summer, but often can become an issue when they try to move into homes during fall as they search for overwintering sites

Identification



Figure 1. Adult boxelder bug.

Adult boxelder bugs are about 1/2 inch long, black with orange or red markings, including three stripes on the prothorax, the area right behind the head. Their wings lay flat over their bodies, overlapping each other to form an 'X' (fig. 1). The immature nymphs are 1/16th inch long and bright red when

they first hatch. As they grow older and become larger, they are red and black. You can potentially see all stages at any given time during the summer (fig. 2).

Importance

Boxelder bugs are primarily a nuisance because they enter homes and other buildings, often in large numbers. Fortunately, they do not bite people and are essentially harmless to property. When abundant, they can stain walls, curtains, and other surfaces with their excrement. Occasionally some may seek moisture and may be found around houseplants, although they rarely attack them. In the few cases when they do feed, boxelder bugs are very unlikely to injure indoor plants.

Biology and Life Cycle

In Minnesota, boxelder bugs emerge from overwintering sites during spring as the weather starts to warm up. Adults feed on low vegetation and seeds on the ground during spring and early summer, and begin mating a couple weeks after they started feeding. Starting in mid July, they move to female seed-bearing boxelder trees (fig. 3) where they lay eggs on trunks, branches, and leaves. They are rarely

found on male boxelder trees. Boxelder bugs may also feed on maple or ash trees. There is no noticeable feeding injury to these trees. During years of high populations, you may find nymphs on the ground or in gardens feeding throughout the summer.

During late summer and fall, boxelder bugs start to leave the trees from where they were feeding to find protected areas for the winter. Although nymphs may be present in the fall, only fully grown adults survive the winter. Adult boxelder bugs typically can fly several blocks, although in some cases they can travel as far as two miles.

Some homes are especially attractive to boxelder bugs, while neighboring buildings may have few. This usually depends upon the amount of sunny exposure a building receives. Boxelder bugs like warm areas and are attracted to buildings with a large southern or western exposure. Buildings standing taller than surrounding structures or standing isolated on flat ground can also attract large numbers of boxelder bugs. Color does not appear to influence boxelder bugs as they are found on buildings of all hues.

As the weather cools, boxelder bugs push into cracks and spaces around homes. In some cases they end up in the interior of buildings where they are often found around windows. They remain active until it becomes cold, which could continue into winter when the weather is mild. While you may see persistent numbers of these bugs, individuals are short-lived, only surviving for a few days up to a week. Other boxelder bugs end up in sheltered areas in walls, attics and similar areas where they remain until it warms up.

During winter, boxelder bugs are generally inactive. However, during mild, sunny days, boxelder bugs become mobile with the increased temperature. They enter a home's



Figure 2. Boxelder bugs adults and nymphs



Figure 3. Boxelder tree

interior from overwintering areas within the home, e.g in walls or attics. As they wake up, they follow the warmth into the home's living quarters. Once there, they typically move towards windows and other sunny areas. However, the warmth does not reach the insects equally and they do not all become active at the same time.

Eventually by spring, all the surviving boxelder bugs that overwintered inside buildings become active. They try to move outdoors but many remain trapped inside. Despite the circumstantial evidence, they do not reproduce in homes -- all the boxelder bugs seen inside during winter and spring entered buildings the previous fall.

Boxelder bugs are not a serious problem every year. They are most abundant during hot, dry summers when followed by warm springs. They were very numerous in 1988, 1987, 1978, 1977, and 1975. They were also abundant in 1958, 1949, and the hot dry years of 1936 and 1935.

Management

Outdoors

The best management of boxelder bugs is prevention -- take steps to keep them from entering your home from the start. You can partly do this through exclusion though it largely depends on how your home was constructed. Make any repairs by the end of August.

For all homes

- Repair or replace damaged window and door screens.
- Repair or replace damaged screens in roof and soffit vents, and in bathroom and kitchen fans.
- Seal areas where cable TV wires, phone lines, and other utility wires and pipes, outdoor facets, dryer vents and similar objects enter buildings.
- Seal with caulk or for larger spaces use polyurethane

expandable spray foam, copper mesh, or other appropriate sealant.

- Install door sweeps or thresholds to all exterior entry doors. Install a rubber seal along the bottom of garage doors.

For homes constructed of stucco, plaster, stone or brick veneer

- Check the outside surfaces for spaces and cracks that may allow insects easy entry, sealing any openings 1/8th inch in size or larger. This will not eliminate all boxelder bugs but it can significantly reduce the number entering buildings.
- Seal cracks and spaces around doors, windows, roof lines, and fascia boards and other areas where vertical surfaces meet horizontal ones.
- Also check for gaps and cracks where different materials meet, such as brick and wood siding. Seal cracks with caulk, such as silicone, elastometric latex, or silicone/acrylic.
- For stone or brick veneer, the bottom of the walls will have 'weep holes' and these must not be sealed up. Instead, visit a local hardware store and request ventilation plugs that can be installed in these weep holes.

For homes constructed of vinyl siding

- Unfortunately, houses with vinyl siding provide too many gaps to effectively exclude these insects. These houses are designed for aesthetics, durability, and energy efficiency. Relative to excluding insects, the benefit of these houses is that they are often effectively sealed with a 'house wrap' placed underneath the siding.
- For these types of houses, concentrate on the recommendations provided for all houses and use an insecticide on areas where these bugs have congregated in the past. In our experience, large numbers collecting around the doors and other entryways are often the most prevalent means of entry during the fall. For information on insecticide use, see the section below.

Are insecticides necessary?

You may want to supplement non-chemical methods with an insecticide treatment around the exterior of your home, especially if large number of boxelder bugs are present and/or you have a history of boxelder bug invasions. The best time to spray is late summer and fall when boxelder bugs are first clustering around the outside of buildings.

You can treat your own home by using an insecticide labeled for the exterior of buildings. Examples of common names of active ingredients available to the public include:

- bifenthrin
- cyfluthrin
- deltamethrin
- lambda cyhalothrin
- permethrin
- tralomethrin

You can find the common name for a pesticide by examining the label and looking under *Active Ingredients*. Also be sure the product indicates it can be used on the exterior or outside of buildings. Look for this information under *Directions For Use*. Look closely as this information is often in small print.

CAUTION: Read all label directions very carefully before buying insecticides and again before applying them. Information on the label should be used as the final authority.

You may also consider hiring an experienced pest control service to treat your building's exterior. They have the necessary experience to successfully treat your home.

During spring, you may see boxelder bugs on the outside of homes. These insects are emerging from their overwintering sites and are moving away from buildings. It is unnecessary to spray these insects as they are not entering homes. Treating them does not have any impact on the number of boxelder bugs found next fall.

Indoors



Figure 4. Boxelder bugs on hosta (they do not injure plants).

Once boxelder bugs are found the best option is to physically remove them with a vacuum or a broom and dust pan. If this occurs during fall, check around the building exterior because they can often be found congregating in sunny or warm areas. If they are close to entrances, an insecticide may be required to prevent their entrance into a home.

Inside homes, insecticides have limited value and are not usually suggested. Remember that when boxelder bugs are active, they do not live indoors much more than a few days and do not reproduce inside. When they are emerging from the walls and other sites where they have been dormant during the winter, spraying insecticides does not prevent more from returning.

Spraying or Removing Trees

Spraying or removing the seed-bearing boxelder trees in your yard is not a practical solution for boxelder bug management because adult boxelder bugs can fly up to a couple miles from food. Also, boxelder trees (as well as maple and ash) are usually common providing many potential sources of boxelder bugs. In our opinion, the benefits of having these trees in a landscape outweigh the problem of occasional infestations. Remember that although you may encounter large numbers of boxelder bugs in a given year, they are not automatically abundant every season.

Photographs by Jeff Hahn.

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