



Boxelder bug

Erin W. Hodgson
Extension Entomology Specialist

Alan H. Roe
Insect Diagnostician

What you should know

- Boxelder bugs are considered a nuisance pest, and rarely cause economic, aesthetic or structural damage.
- Adults are commonly found on and in buildings during August and September, especially the southern exposure.
- Boxelder bugs can stain carpet and other fabrics.
- Homeowners can successfully manage boxelder bugs without chemical control.

Boxelder bugs are a common nuisance insect to many homeowners. Although boxelder bugs are active throughout the summer, many people don't notice them until they start "sunning" themselves on structures, particularly the southern-facing walls. As temperatures start to decrease in the late summer and fall, large numbers of adults will move from plants and congregate on heated buildings.

Boxelder bugs can feed and develop on many different kinds of plants, including maple, ash, stonefruits (cherry, plum, peach), apple, grape, strawberry and grass. However, large numbers are typically found on female boxelder trees where nymphs and adults feed on developing seeds (Fig. 1). Boxelder bugs are not usually found on ornamental plants, but have been known to damage fruiting trees during the late summer. Homeowners do not necessarily have to have a boxelder tree to notice adults around the home because they are mobile insects.



Fig. 1. Mass grouping of immature boxelder bugs³



Fig. 2. Adult boxelder bug¹

Description

Immature and adult boxelder bugs are fluid feeders with piercing-sucking mouthparts. Adult boxelder bugs are about 1/2" long, flattened on top, elongate-oval in shape, and predominately slate-gray to black in color (Fig. 2). Three red lines run the length of the prothorax (first segment with a pair of legs, attached to the base of the head), one on each side and one down the middle. The basal halves (from the point of attachment) of the forewings are leathery in texture and are rimmed in red on all margins. The outer halves (wing tips) of the forewings and the hindwings are pliable, black membranes. The top of the abdomen is red with two rows of black spots. The underside of the abdomen is alternately striped in red and gray. The legs are black.

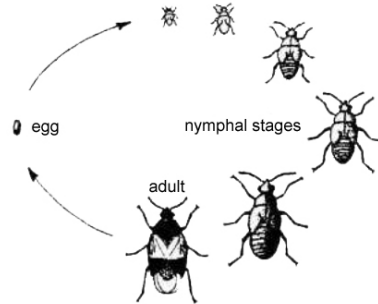
The immature nymphs are wingless, but otherwise generally resemble the adults. When first hatched, small nymphs are completely red and sparsely covered with short, bristly hairs (Fig. 3). Slate-colored or black markings, particularly toward the head, appear when they are about half-grown. Large nymphs have obvious wing pads and black antennae and legs (Fig. 1).



Fig. 3. Boxelder bug eggs and nymphs²

Life cycle

In the spring, overwintering adults emerge and fly to host plants where the females deposit small, red, oval eggs on leaves, bark, or other surfaces. Eggs hatch in 10 to 14 days and nymphs begin feeding by sucking fluids from seeds, foliage, twigs, or fruit. Nymphs go through a series of growth stages with a shedding molt between each stage. Eventually nymphs reach the adult stage, mate, and produce a second generation that summer.



The second generation adults are the overwintering stage. Adult boxelder bugs prefer dry, sheltered areas. They are found around the foundations and windows of buildings, or in leaves and other debris, under hedges, in ditches, or similar places. Adults often become active on warm winter days and emerge from their hiding places, returning to shelter as temperatures drop at the end of the day. Congregation of the bugs on surfaces has to do with temperature, as the bugs prefer warm surfaces. For this reason, they are often found in large numbers on the south sides of houses or other buildings.

Damage and Prevention

When seeking an overwintering location, adults may accidentally find a crack or crevice leading inside a building. Boxelder bugs will not bite, sting or eat food products, but they can stain carpet and other fabrics. Preventing boxelder bugs from entering a building will reduce this nuisance insect.

- Caulk or seal openings or foundation cracks, windows, and around plumbing, gas, or electrical conduits. Weather strip around doors and windows.
- Screen off attic vents and repair broken windows and screens. Expanding-foam sealants may be of value in sealing hidden recesses and other areas that are not readily visible.
- Simply vacuum any boxelder bugs that remain because completely sealing the building may be impossible.
- Avoid squishing adults because they can leave a stain on fabrics and can release a foul odor.

Boxelder bug control

Boxelder bugs, particularly the nymphs, are easily drowned. Regular use of a garden hose to water-down congregations of bugs is very effective. Since many homeowners regularly water their plants with a hose, this is a good time to wash boxelder bugs off of buildings.

Boxelder bug populations can also be reduced by removal of female boxelder trees. As with the insecticide treatments, this is not likely to work unless only small numbers of trees are involved. This is a rather drastic measure and is not generally recommended. The overall value of the tree usually far outweighs the potential benefit of reducing boxelder bugs.

Boxelder bugs have few natural enemies. There are no major insects or diseases that affect their populations, and spiders are considered a minor predator. Birds fail to feed upon them in any significant numbers, probably due to the ability of the bugs to emit an offensive odor (which undoubtedly makes them taste bad as well).

Spraying nymphs and adults with a soap mixture can be used as an alternative to synthetic insecticides. Mix approximately ½ cup of a laundry detergent into one gallon of water and pour in a squirt bottle. Spray mixture directly on boxelder bugs as often as necessary. Remember the mixture only kills the bugs that are being sprayed and has no residual effects once dry.

Chemical control of boxelder bugs is difficult and not very successful because large nymphs and adults are tolerant of insecticides. Justification of insecticidal control depends largely upon the degree of the nuisance problem, the areas where they occur, and the numbers of bugs the homeowner is willing to tolerate.

There are about 175 insecticide Utah-registered products labeled for boxelder bug control in both indoor and outdoor domestic dwelling situations. About 50 products are labeled for boxelder bug control on boxelder trees or ornamental trees in general. Common active ingredients in products include chlorpyrifos, cyfluthrin, cypermethrin, D-phenothrin plus tetrmethrin, D-trans-allethrin, lambda-cyhalothrin, permethrin, and pyrethrins. Active ingredients in formulations labeled for use on trees include carbaryl, chlorpyrifos, cube resins plus rotenone, endosulfan, and naled.

¹ Image courtesy of Clemson University, USDA Cooperative Extension Slide Series (www.forestryimages.org).

² Image courtesy of W. Cranshaw (www.forestryimages.org).

³ Image courtesy of J.B. Hanson (www.forestryimages.org).

Precautionary Statement: All pesticides have benefits and risks, however following the label will maximize the benefits and reduce risks. Pay attention to the directions for use and follow precautionary statements. Pesticide labels are considered legal documents containing instructions and limitations. Inconsistent use of the product or disregarding the label is a violation of both federal and state laws. The pesticide applicator is legally responsible for proper use.

Utah State University is committed to providing an environment free from harassment and other forms of illegal discrimination based on race, color, religion, sex, national origin, age (40 and older), disability, and veteran's status. USU's policy also prohibits discrimination on the basis of sexual orientation in employment and academic related practices and decisions. USU employees and students cannot, because of race, color, religion, sex, national origin, age, disability, or veteran's status, refuse to hire; discharge; promote; demote; terminate; discriminate in compensation; or discriminate regarding terms, privileges, or conditions of employment, against any person otherwise qualified. Employees and students also cannot discriminate in the classroom, residence halls, or in on/off campus, USU-sponsored events and activities. This publication is issued in furtherance of Cooperative Extension work. Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Noelle E. Cockett, Vice President for Extension and Agriculture, Utah State University.