



## Boxelder Bug

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### Introduction

Boxelder bug, *Boisea trivittatus*, is a species of true bug native to North America. Boxelder bug is primarily a nuisance pest in the fall, when large populations of adults seek places to overwinter. Boxelder bug belongs to the family Rhopalidae in the order Hemiptera.

### Identification

Adult boxelder bugs are strikingly colored reddish-orange and black insects that measure about 12 mm (0.5 inch) long (Fig. 1). The legs and antennae are black and the eyes are red. The black wings are edged in orange and there are three vertical orange lines on the black pronotum behind the head.



Fig. 1. An adult boxelder bug (Joseph Berger, Bugwood.org).

Nymphal boxelder bugs are a bright reddish-orange with a similar shape as the adults (Fig. 2). Their legs, antennae, and wingpads darken to black as they mature. Adults can fly, but the nymphs cannot.

### Host Plants

Boxelder bugs are named for boxelder (*Acer negundo*), their preferred host tree. Boxelder trees are dioecious with male and female trees. Boxelder bugs prefer female boxelder trees as they produce

nutritious seeds. However, boxelder bugs can feed on other species of maple and ash.



Figure 2. Boxelder nymphs and adults on a boxelder leaf (Steven Katovich, Bugwood.org).

### Life Cycle

Boxelder bugs have an incomplete life cycle of egg, nymphal, and adult stages. Adult boxelder bugs emerge from overwintering sites in spring when warmer temperatures arrive. Mated females lay reddish-brown, bean-shaped eggs on host trees and old seeds on the ground. The nymphs hatch and feed on old seeds and new foliage, developing into adults by midsummer. Depending on the weather, there can be two generations a year in Virginia. The second generation is usually larger than the first and attracts more attention from homeowners. Boxelder bugs overwinter as either nymphs or adults, but mostly adults survive.

### Damage

Boxelder bugs feed on leaves and seeds by removing plant fluids through their piercing-sucking mouthparts. They rarely damage trees, but many home owners consider their presence a nuisance when they are found in large numbers on and underneath host trees.

In late fall, boxelder bugs often congregate on the outside of southern or western facing buildings, rock outcrops, concrete walls, tree trunks, and similar sites with strong sun exposure in (Fig. 3). They seek protective locations to overwinter under rocks, in wood piles, and inside piles of leaves and mulch. Boxelder bugs remain in these locations during the winter, but they may become briefly active on warm, sunny days.



Figure 3. A very noticeable cluster of boxelder nymphs and adults on a boxelder trunk (William M. Ciesla, Forest Health Management International, Bugwood.org).

If boxelder bugs can gain entrance, they will also invade houses, outbuilding, and other structures. Boxelder bugs in unheated attics or wall spaces may survive the winter in these protected spaces, but boxelder bugs that make their way inside the living quarters of houses will die due to warmer temperatures and low humidity. Most homeowners object to the presence of these insects as they can emit strong odors and their feces stain surfaces like walls, carpets, curtains, and upholstery. However, boxelder bugs do not cause any structural damage or reproduce indoors and they are not biting insects.

## Control

The best control measure to prevent boxelder bugs from invading homes is to limit the places where they can gain access indoors. Check for cracks, holes, open vents, and gaps in the foundation, siding, and attic spaces. Seal or screen any possible entrances through which boxelder bugs or other pests may enter the house. Make sure that weatherstripping creates a tight seal around doors and windows. Window and door screens should be in good repair.

Boxelder bugs found indoors can be swept or vacuumed up. Empty the vacuum cleaner soon after use so the dead bugs do not begin to smell. A fly swatter works well, but the crushed bodies can stain surfaces and release objectionable odors.

Outdoors, rake and remove boxelder, maple, or ash seeds when boxelder bugs are present. This also removes a potential food source for boxelder bugs emerging in the spring. Large aggregations of boxelder bugs can be treated with insecticidal soap as a contact spray when found. Alternatively, a strong jet of water from a hose will dislodge the boxelder bugs and may even kill them if forceful enough. Seed-bearing female boxelder trees and areas where the seeds collect can also be sprayed with registered insecticides when boxelder bugs are found on them. Perimeter sprays directed against boxelder bugs should be applied around the foundation of houses in mid to late August. See the current Pest Management Guide for Home Grounds and Animals for recommendations of registered insecticides for perimeter sprays or sprays applied to seedbearing boxelders.

Removing boxelder trees to avoid boxelder bugs is not necessary. Boxelder bugs are not nuisance pests every year, and boxelder trees can be valued shade trees. Adult boxelder bugs do fly and may invade homes after leaving a host tree some distance away. However, consider removing individual female boxelder trees that seem very attractive to boxelder bugs year after year if the bugs are an annual nuisance.

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2021

ENTO-468NP