



BOXELDER BUG

Boisea trivittata (Say)

The boxelder bug frequently becomes a nuisance pest around homes and buildings near plantings of the boxelder, *Acer negundo*. In heavily infested areas, they often are associated with ash (*Fraxinus* spp.) and maple (*Acer* spp.). This insect species is distributed throughout eastern United States west to Nevada.

DESCRIPTION

Freshly laid eggs are straw yellow and turn red as the embryo develops inside. First instar nymphs are approximately 1.3 mm in length, wingless (with black wing pads) and have bright red abdomens. The legs and antennae are black. The nymphs become darker red as they mature through the five nymphal instars. The brownish-black adults are about 12 mm long and somewhat flattened on the top (Fig. 1). Three longitudinal stripes on the thorax and the margins of the basal half of the wings are reddish orange. The adult's abdomen is also reddish orange.

LIFE HISTORY

With the approach of fall, this species congregates in large numbers on the south side of trees, buildings, and rocks exposed to the sun (Fig. 2). It is during this period that homeowners become



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Figure 1. Adult boxelder bug.



Image by James Solomon
USDA Forest Service

Figure 2. Boxelder bug adults and nymphs.

aware of the insects. Adult boxelder bugs will frequently attempt to enter cracks and crevices in the walls, in an attempt to secure a protected, over-wintering site, occasionally finding their way into the living areas of homes. In late April to early May, the bugs emerge from hibernation about the time buds on boxelder trees begin opening. They fly back to host trees where they remain active over the growing season.

In spring soon after finding host trees, females lay eggs in crevices in the bark of the trees. Eggs hatch in 10 to 14 days into nymphs. Nymphs feed on foliage and seeds by inserting their piercing-sucking mouthparts into these tissues. They continue feeding until they mature into adults. Depending on weather conditions, one to two generations may be produced each year in Pennsylvania.

DAMAGE

Both nymphs and adults remove plant fluid from newly developing leaves that may result in distortion of the foliage. Severely infested foliage may appear chlorotic (yellow). In addition to foliar feeding, boxelder bugs may also damage flowers, tender twigs, and seeds of boxelder. Populations of this pest have been reported to prefer development on the female trees; thus, monitor for this species on these trees.

It is, however, because of the boxelder bugs propensity to enter homes that causes the most alarm. Although the insects cause no direct damage to the structure, contents or the occupants, their presence is a nuisance. In heavily infested areas, thousands of boxelder bugs may enter the living quarters of buildings. Contrary to popular belief, over-wintering insects such as these do not reproduce within buildings.

MANAGEMENT

Ornamental Trees and Shrubs: Applications of registered insecticide formulations for non-edible ornamental trees or shrubs directed to the foliage can be made in early summer when nymphs are exposed and feeding on host plant tissue. An alternative to outdoor chemical management of this pest is the removal of seed-bearing (female) boxelder trees that are growing close to a home.

Before Bugs Enter a Building: Mechanical exclusion is the best method to keep boxelder bugs from entering homes and buildings. Cracks around windows, doors, siding, utility pipes, behind chimneys, and underneath the wood fascia and other openings should be sealed with good quality silicone or silicone-latex caulk. Damaged screens on doors and windows should be repaired or replaced.

Exterior applications of insecticides may offer some relief from infestations where the task of completely sealing the exterior is difficult or impossible. Applications should consist of a synthetic pyrethroid (i.e. deltamethrin, cyfluthrin, lambda-cyhalothrin, cypermethrin, sumithrin or tralomethrin) and should be applied by a licensed pest control operator in the fall just prior to bug congregation. Unfortunately, because insecticides are broken down by sunlight, the residual effect of the material will be greatly decreased and may not kill the insects much beyond several days or a week.

After Boxelder Bugs Have Entered the Structure: It is not advisable to use an insecticide inside after the insects have gained access to the wall voids or attic areas. Although insecticidal dust treatments to these voids may kill thousands of bugs, there is the possibility that carpet beetles will feed on the dead boxelder bugs and subsequently attack woolens, stored dry goods or other natural products in the home. Although aerosol-type pyrethrum foggers will kill boxelder bugs that have amassed on ceilings and walls in living areas, it will not prevent more of the insects from emerging shortly after the room is aerated. For this reason use of these materials is not considered a good solution to long-term management of the problem. Spray insecticides, directed into cracks and crevices, will not prevent the bugs from emerging and is not a viable or recommended treatment.

If numerous bugs are entering the living areas of the home, attempt to locate the openings where the insects gain access. Typically, boxelder bugs will emerge from cracks under or behind baseboards, around window and door trim, and around exhaust fans or lights in ceilings. Seal these openings with caulk or other suitable materials to prevent the insects from crawling out. Both

live and dead boxelder bugs can be removed from interior areas with the aid of a vacuum cleaner.

WARNING

Pesticides are poisonous. Read and follow directions and safety precautions on labels. Handle carefully and store in original labeled containers out of the reach of children, pets, and livestock. Dispose of empty containers right away, in a safe manner and place. Do not contaminate forage, streams, or ponds.

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