



LACE BUGS ON DECIDUOUS WOODY ORNAMENTAL PLANTS

Lace bugs belong to the insect order Heteroptera (true bugs) and the family Tingidae. About 160 species have been described in North America. Lace bugs are exclusively plant feeders, and while more species are found on herbaceous plants, the most common species occur on the foliage of trees and shrubs. Twenty-eight lace bug species have been recorded in Pennsylvania, but only a few are key pests of ornamental plants. Recognition of the host plant is helpful in identifying lace bugs because these insects are highly host specific (feed only on one plant or a few closely related species). The hawthorn lace bug, *Corythucha cydoniae*, oak lace bug, *C. arcuata*, and sycamore lace bug, *C. ciliata*, are some of the most common and injurious species found on deciduous woody ornamental plants in Pennsylvania.

DESCRIPTION

The adult lace bug is small (3-8 mm), rectangular, and with an overall flattened appearance (Fig. 1). The wings are held flat over the insect when at rest, with the wing tips and outer margins extending beyond the perimeter of the body. The tops of the front wings, head, and thorax are membranous, composed of many raised ridges, which give a lacelike appearance; hence, the common name lace bug. In most of the economically important species, the adults are cream colored with patches of black or brown. Nymphs are spiny and much darker than the adults. They go through five developmental stages (instars) before becoming an adult. Nymphs can be found clustered among their dark feces and cast nymphal skins on lower leaf surfaces. When fully grown nymphs are about one-half the size of the adults. The black eggs are elongate and placed on end in small groups on the underside of leaves.

LIFE HISTORY

Lace bugs that feed on deciduous woody ornamental plants generally overwinter as adults on or near their host in bark crevices, branch crotches, or similar protected sites. The overwintering adults become active as the leaves unfurl and deposit their eggs on the lower leaf surface. The eggs will hatch in a few days

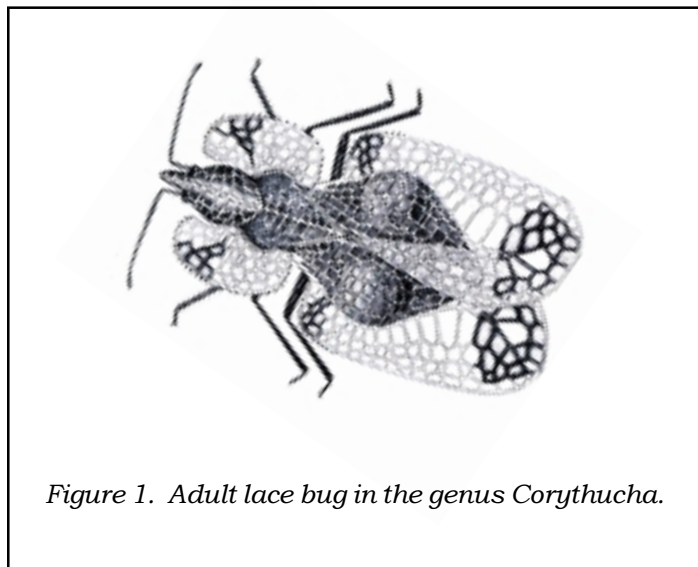


Figure 1. Adult lace bug in the genus *Corythucha*.

(May), and the nymphs will feed on the underside of leaves. One to three generations are produced each year in Pennsylvania depending upon the species of lace bug. The exact number of generations also depends on the length of the growing season. Development from egg to adult may be completed in twenty-six to forty-nine days. Lace bugs can be found in different life stages on deciduous woody ornamental plants until August or September.

DAMAGE

Both adults and nymphs injure the host by piercing the epidermis of a leaf and sucking fluid from plant tissue. The removal of plant juices causes foliar discoloration, reduced plant vigor, and premature leaf drop. A symptom of lace bug feeding is characterized as a chlorosis or stippling visible on the upper surface of leaves. This damage may sometimes be confused with that caused by spider mite injury. Lace bug injury, when observed closely, reveals chlorotic flecks that are larger than those caused by mite feeding. The stippling caused by lace bugs is yellow or white, and in severe infestations whole patches may turn brown. The lower leaf surface may reveal nymphs, adults, cast nymphal skins, and lace bug excrement, which is black with a varnished appearance.

MANAGEMENT

Plants should be monitored regularly for signs of a lace bug infestation. Generally, infestations on deciduous trees may not require treatment, and trees that are attacked heavily usually do not have heavy infestations the following year. If necessary, apply a registered insecticide to plants from late May to early June

when lace bug nymphs are young. Treatment materials should be directed so that the underside of foliage is thoroughly covered. A repeat application, if indicated, in 10 to 14 days will sometimes eliminate the need to control the following generation.

PESTS

Alder lace bug
Basswood lace bug
Birch lace bug

Buckeye lace bug
Elm lace bug
Hackberry lace bug
Hawthorn lace bug

Oak lace bug
Sycamore lace bug
Walnut lace bug
Willow and poplar lace bug
Willow lace bug

HOST PLANTS

Alder, hazel, elm, birch, and crabapple
Basswood and linden
Yellow birch, white birch, beech, willow,
mountain ash, maple, and eastern hophornbeam
Buckeye
American elm
Hackberry
Hawthorn, quince, pyracantha, cotoneaster,
crabapple (occasionally) and serviceberry
Oak
Sycamore and London planetree
Black walnut, butternut, and linden
Willow, balsam poplar, bigtooth aspen, and quaking aspen
Willow

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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