



LACE BUGS ON BROAD-LEAVED EVERGREEN 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 occur 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 closely related species). The azalea lace bug (*Stephanitis pyrioides*), rhododendron lace bug (*S. rhododendri*), and andromeda lace bug (*S. takeyai*) are the most common and injurious species found on broad-leaved evergreens in Pennsylvania. The rhododendron lace bug is a native species. The azalea lace bug and andromeda lace bug were both accidentally introduced from Japan.

DESCRIPTION

A typical adult lace bug found on ornamental plants is small (2-5 mm), oval, with an overall flattened appearance (Fig. 1). While at rest, wings are held flat over the insect, with 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; thus the common name, lace bug. In most of the economically important species, the adults are cream colored with patches of black or brown. A dark X-shaped mark is apparent on wings of the azalea and andromeda lace bugs. Nymphs are spiny and much darker than the adults. They go through five developmental growth 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. Dark-colored eggs are inserted into the midrib on the lower leaf so that only the top of the egg appears above the leaf surface. They are covered with a varnishlike material secreted by the female.

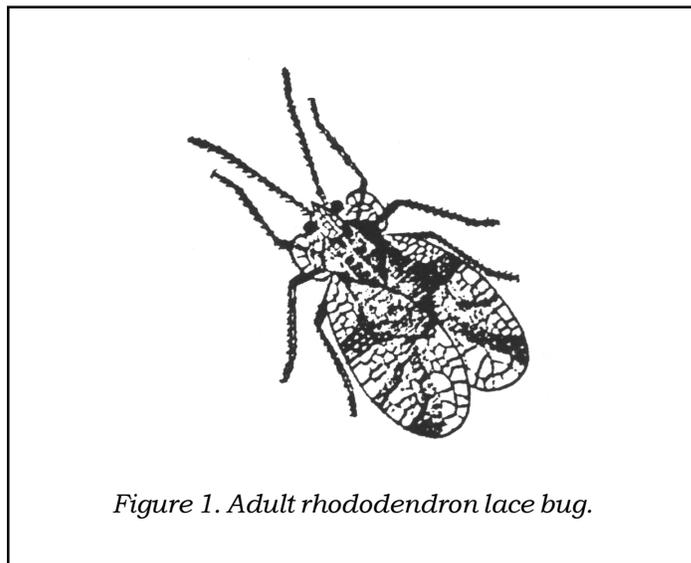


Figure 1. Adult rhododendron lace bug.

LIFE HISTORY

Lace bugs that feed on broad-leaved evergreens overwinter in the egg stage. The overwintering eggs that are inserted into the midrib of broad-leaved evergreens the previous fall will hatch from late April through May. Nymphs feed on the lower leaf surface. The complete life cycle, from egg to adult, may be completed in thirty days under optimal conditions. Two to three generations are produced each year in Pennsylvania. The exact number of generations depends on the length of the growing season. Lace bugs can be found in all stages of development on broad-leaved evergreens 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. Feeding by nymphs and adults on lower leaf surfaces results in a chlorosis or stippling visible on the upper surface. This damage may sometimes be confused with that of mite injury. Lace bug injury, when observed closely, reveals chlorotic flecks that are larger than those caused by mite attack. The underside of the leaves will sometimes reveal the nymphs or adults, cast skins,

and the excrement, which is black with a varnished appearance. When azalea and rhododendron are grown in a sunny location, heavy lace bug populations and their associated foliar damage may occur. Damage caused by the andromeda lace bug may be severe in either sunny or shady sites.

PESTS

HOST PLANTS

Andromeda lace bug	Japanese andromeda
Azalea lace bug	Azalea and mountain laurel
Rhododendron lace bug	Rhododendron and mountain laurel

MANAGEMENT

Plants should be monitored regularly in the spring for signs of a lace bug infestation. Broad-leaved evergreens require particular attention because leaves that are damaged in the spring will have a stippled look for the remainder of the growing season. Do not plant azalea or rhododendron in a sunny location so that heavy populations of lace bug will not develop. Apply registered insecticides to plants from mid-May through early June when lace bug nymphs are young. Treatment materials should thoroughly cover the underside of foliage. A repeat application in 10 to 14 days will sometimes eliminate the need to control the next generation.

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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