

Lace Bugs

HYG-2150

Date: 10/19/2011

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Lace bugs are common pests of a variety of ornamental trees and shrubs. The adults have highly ornamented wings and a hood-like structure covering the head. The entire surface is covered with veins that look like lace. The most common lace bug pests in Ohio include the sycamore lace bug (*Corythucha ciliata*), hawthorn lace bug (*C. cydoniae*), hackberry lace bug (*C. celtidis*), oak lace bug (*C. arcuata*), basswood lace bug (*Gargaphia tiliae*), azalea lace bug (*Stephanitis pyriodes*), rhododendron lace bug (*S. rhododendri*), and andromeda lace bug (*S. takeyai*). The hawthorn lace bug often attacks cotoneaster, pyracantha, flowering quince, crabapple, mountain ash, and shadbush (*Amelanchier*) as well as hawthorn, while the basswood lace bug commonly attacks lindens. The rhododendron lace bug also can be found on mountain laurels. The rest of the species are fairly well restricted to their namesake hosts.

Lace bugs are usually detected when their damage to the leaves of host plants becomes evident. The nymphs and adults live on the lower surface of leaves and suck juices through slender, piercing mouthparts. This produces yellow or whitish spots on the upper surface of the leaf. As the insects feed, they deposit a hard, varnish-like excrement onto the leaf surface. These are called tar spots or resin spots.



Walnut lace bug adults and nymphs on leaf.

Once the damage is noticed, the adults and nymphs can be looked for by turning over affected leaves. Adult lace bugs are about 1/8 inch (3.0 mm) long by 1/16 inch (1.5 to 2.0 mm) wide. They are somewhat rectangular in outline. The nymphs are oval in outline and often covered with long spines. Most of the lace bugs move rather slowly when disturbed but the hackberry lace bugs tend to drop from the leaves that are touched.

Types of Damage

Most plants react from lace bug feeding by having yellow or whitish spots evident on the upper leaf surface. Heavy feeding from large infestations may result in large, yellow, blistered areas on leaves, totally yellowed leaves, and early leaf drop. Broadleaf evergreen plants often keep the damaged leaves from one season to the next.

The under surface of affected leaves should have dark varnish-like spots of excrement scattered about with concentrations along the leaf veins. Concentrations of this excrement along the veins is most evident on broadleaf evergreens. This is because the female lace bugs usually insert their eggs along the leaf veins and coat the exposed surface of the egg with excrement.

Life Cycles and Habits

Lace bugs can be divided into two groups—those that attack deciduous trees and shrubs and those that attack evergreen shrubs. Lace bugs that attack deciduous plants spend the winter in the adult stage by hibernating on the plant under bark or near the plant in leaf litter. Lace bugs that attack evergreens overwinter in the egg stage attached to the leaves.

The hawthorn lace bug is one type that attacks deciduous plants. The adults hibernate under loose bark of their host plants as well as among leaf litter. They become active in early to mid-May and return to the new leaves. The females soon begin to lay eggs along the larger veins on the lower leaf surface. The females may lay eggs for a considerable time, often extending into June. The eggs hatch in a couple of weeks and the nymphs cluster together and feed. Each nymph sheds its skin (molts) five times before the adult stage is reached. Growth to the adult stage usually takes three to four weeks. Peak numbers of this pest are usually present in July. Only one generation occurs per year. Related species of lace bugs such as the oak, sycamore, and hackberry lace bugs have two and occasionally three generations in a summer.

The azalea lace bug (an example of a lace bug that attacks evergreens) overwinters in the egg stage. The eggs are partially inserted into the leaf tissues along the midvein and are covered with the resin-like excrement of the female. The nymphs hatch in the spring, usually mid-May, after the danger of frost is over. They feed in small groups on the under surface of leaves and molt five times before becoming adults. The adults mate and lay eggs for a second generation by mid- to late July. Often there is a third generation in the late summer and early fall. The andromeda and rhododendron lace bugs have similar life cycles.

Control Tactics

Plants that attract lace bugs should be monitored early in order to determine if an infestation is building. Elimination of the first generation of lace bugs is necessary if visual damage is to be avoided. Existing spotting and yellowing of leaves will not disappear once the lace bugs have been controlled.

Option 1: Cultural Control—Planting Site Selection. Most lace bugs seem to prefer bright, sunny areas. Plant lace bug susceptible plants in shady areas of the landscape. The azalea and rhododendron lace bugs are rarely a problem when their host plants are in heavily shaded areas.

Option 2: Cultural Control—Synergizing. Use a hard jet of water from a hose to dislodge the young nymphs as they hatch in the spring. The tiny nymphs often die before they can find their way back to suitable leaves.

Option 3: Biological Control—Encourage Predators. Naturally occurring green lacewings, mites, and assassin bugs attack lace bugs. However, these predators often arrive after considerable damage has occurred. In order to conserve these beneficial natural predators, use syringing or one of the insecticidal soaps instead of standard insecticides.

Option 4: Chemical Control—"Soft Pesticides." The insecticidal soaps and/or horticultural oils are useful if contact with the nymphs or adults is made. Be sure to cover the underside of the leaves where the nymphs and adults are feeding. Additional applications may be needed to control nymphs hatching out of eggs laid late or if re-infestations occur from surrounding landscapes.

Option 5: Chemical Control—Standard Insecticides. There are many over-the-counter products that list lace bugs on their labels. Pyrethroids (these are chemicals that usually end in "-thrin") are generally

effective, but contact with the bugs is necessary for control. Some newer systemic products are available that can be sprayed or used as drenches around the bases of infested plants. These often provide season-long control with a single application. Be sure to check each product's label because not all lace bugs or host plants are listed on each label. Make applications as soon as the eggs hatch in the spring, usually mid- to late May. Monitor the plants and repeat applications if re-infestations occur.

This publication contains pesticide recommendations that are subject to change at any time. These recommendations are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Due to constantly changing labels and product registration, some of the recommendations given in this writing may no longer be legal by the time you read them. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. The author, The Ohio State University, and Ohio State University Extension assume no liability resulting from the use of these recommendations.

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