

LACE BUGS

Many kinds of lace bugs, family Tingidae, feed on landscape plants throughout the United States. Each lace bug species feeds on only one or a few closely related plants. Hosts include alder, ash, avocado, azalea, coyote bush, birch, ceanothus, fruit trees, photinia, poplar, sycamore, toyon, walnut, and willow.

IDENTIFICATION

Several dozen species of lace bugs occur in the western United States, mostly on trees and woody shrubs. California Christmas berry tingid (*Corythucha incurvata*), ceanothus tingid (*Corythucha obliqua*), Western sycamore lace bug (*Corythucha confraterna*), and the recently introduced avocado lace bug (*Pseudacysta perseae*) are some of the species that can be pests.

Adult lace bugs are about 1/8 inch long with an elaborately sculptured thorax and forewings that form an expanded cover over their [body](#). The adult thorax and forewings have tiny clear cells that form a lacelike covering, hence the name "lace bugs." Many lace bugs are multicolored with a distinctive, species-specific pattern of a dark, pale, and clear lacelike areas. The wingless [nymphs](#) are smaller, oval, and commonly have body spines. Adults and nymphs occur together in groups on the underside of leaves.

LIFE CYCLE

Females insert tiny, oblong [eggs](#) in leaf tissue, often hidden under dark excrement. After several molts over a period of about 6 weeks, the adult stage appears. All life stages can be present throughout the year on evergreen hosts in areas with mild winters. In cold locations, most species overwinter as adults under bark plates or under fallen leaves, or as eggs in leaves on evergreen hosts. Lace bugs have several generations a year.

DAMAGE

Lace bugs suck leaf sap. Leaf stippling and bleaching from feeding on infested leaves can become very obvious by late summer. Adults and nymphs also foul leaves with specks of dark, varnishlike excrement. Thrips and certain plant bugs also produce both leaf stippling and dark excrement. Examine the lower leaf surface to determine what type of insect is causing the leaf damage. Mites also stipple leaves, but mite feeding can be distinguished by the absence of dark excrement, and sometimes by the presence of mite cast skins and fine silken webbing. Also use a magnifying lens to inspect leaves for tiny mites.

MANAGEMENT

Tolerate lace bug damage where possible; in most cases, it does not seriously harm plants. Provide proper cultural care so plants are vigorous. No treatment will restore stippled foliage, which remains until pruned off or replaced by new growth. If damage has previously been intolerable, monitor plants early during subsequent seasons. Take action when populations begin to increase and before damage becomes extensive.

Biological Control

Natural enemies of lace bugs include assassin bugs, lacewing larvae, lady beetles, jumping spiders, pirate bugs, and predaceous mites. These predators may not appear in sufficient numbers until after lace bugs become abundant; their preservation, however, is an essential part of a long-term integrated pest management program. Growing a variety of species, mulching soil with organic material, and shading plants from afternoon sun can reduce lace bug damage to shrubs and increase natural enemy abundance. If applying pesticides, using only short-persistence materials such as oils and insecticidal soaps will minimize the number of beneficial predators and parasites that are killed.

Cultural Control

Grow plants well adapted to conditions at that site. Plants in hot, sunny locations are more likely to be damaged by lace bugs. For example, azaleas grown under partial shade experience less damage by the azalea lace bug in comparison to azaleas that are drought stressed and exposed to bright sun. Provide adequate irrigation and other care to improve plant vigor. Prune out damaged foliage if the discoloring is intolerable and relatively localized. Do not remove more than a small percent of a plant's branches during one season and use good techniques so that pruning does not injure plants, such as by exposing inner branches to sunburn.

Consider replacing especially susceptible plants with resistant varieties. In comparison with other cotoneaster and pyracantha species, *Cotoneaster lacteus* and *Pyracantha atalantioides* 'Variegata' are resistant to the hawthorn lace bug, *Corythucha cydoniae*. *Cotoneaster buxifolius* cultivars resistant to lace bugs may also be available, but ask for some documentation before purchasing because some *C. buxifolius* cultivars are relatively susceptible to the hawthorn lace bug.

Chemical Control

Contact Insecticides. Insecticides will not restore an undamaged appearance, but can reduce or prevent further damage. Almost any insecticide will control lace bugs if it is sprayed directly onto the insects. Azadirachtin (Safer BioNeem), insecticidal soap (Safer), narrow-range oil (Green Light, Volck), neem oil (Green Light Garden Safe), or spinosad (Conserve, Monterey Garden Insect Spray, Spinosad Home and Garden) sprays temporarily control lace bugs if insecticide thoroughly covers the underside of leaves where adults and nymphs occur. These IPM-compatible insecticides have very low toxicity to humans and a less adverse impact on natural enemies than more persistent, broad-spectrum insecticides.

Other insecticides such as carbamates (carbaryl or Sevin), organophosphates (malathion), and pyrethroids (e.g., cyfluthrin, the active ingredient in Bayer Lawn and Garden Multi-Insect Killer) also can be applied for lace bug control in certain situations but generally are not recommended. While these insecticides provide more residual (longer-lasting) control than the IPM-compatible materials listed above, the systemic imidacloprid is generally a better, long-lasting alternative as discussed below. Spraying these broad-spectrum, persistent insecticides kills many natural enemies, which help control lace bugs, and sometimes causes dramatic increases in damaging spider mite populations. Also, spraying broad-spectrum, persistent insecticides should be avoided in landscapes and gardens because of problems from their runoff in urban surface water, contamination of municipal wastewater, and impacts on non-target organisms.

Lace bug eggs are protected within plant tissue and it is difficult to achieve complete insecticide coverage of leaf undersides. To achieve season-long control, it may be necessary to spray more than once. If lace bugs have previously been a problem and spraying is planned, thoroughly wet

the underside of leaves when lace bug adults or nymphs are observed on foliage in the spring. When applying insecticides with little or no persistence, such as oil or soap, application may need to be repeated at about 2-week intervals to maintain good control.

Systemic Insecticides. Insecticides that are absorbed and move within plants can provide longer-lasting control than contact sprays. The systemic insecticide imidacloprid (Bayer Advanced Garden Tree & Shrub Insect Control, Merit) is available to both homeowners and professional applicators. In situations where IPM-compatible insecticides are inadequate, imidacloprid is usually the preferred choice. It may provide season-long control if applied in spring before populations dramatically increase.

Imidacloprid can be applied as a foliar spray or soil drench. It can be injected directly into trunks if their diameter is relatively large. Drenching soil or injecting trunks may be more effective than spraying foliage. Drenching soil beneath infested plants is probably the best method when treating hedges, shrubs, or clumped groups of plants. As directed on the label, the home-use product (Bayer Advanced Garden Tree & Shrub Insect Control) is measured into a bucket, diluted with water, and poured onto soil near trunks. See [Calculating the Amount of Pesticide to Use When Drenching Soil](#). Be aware that imidacloprid application has sometimes contributed to outbreaks of spider mites and certain other pests. Do not apply imidacloprid to plants with cottony cushion scale because the insecticide is highly toxic to beneficial predatory vedalia lady beetles and its use can cause dramatic increases in cottony cushion scale populations.

Professional Applicators. In situations where IPM compatible insecticides are inadequate, or imidacloprid may not be preferred, certain other insecticides are available only to professional applicators. Abamectin (Abacide, Avid) controls lace bugs on leaves that are sprayed. If trunks are large enough for insecticide to be injected into vascular tissue, abamectin can move to protect the entire plant. Acephate (Orthene T, T&O Spray) is absorbed by leaves and moved within the plant. One foliar spray sometimes provides season-long control.

Injecting Trunks. When using systemics, consider making a soil application whenever possible instead of spraying foliage or injecting trunks. It is difficult to repeatedly place insecticide at the proper depth. Unsterilized injection tools contacting internal parts of multiple plants may mechanically spread certain plant pathogens. The physical act of penetrating trunks during injections injures plants. Especially avoid methods that cause large wounds, which may lead to wood decay. Do not inject trunks more than once a year.