

at a glance

- Bullet shape with tented wings over the body
- Normally smaller than ½ inch
- Many possible colors; however, most appear as a green or yellow
- Rapid movement both in flight and walking on plants
- Usually do not cause death to plants

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Leafhoppers in the Landscape

Description

There are over 2,500 species of leafhopper. In fact, there are more leafhopper species worldwide than all species of birds, mammals, reptiles and amphibians combined. Each species has different host preferences and life cycles. This publication will focus on those species that cause landscape damage or are a nuisance for homeowners. In Idaho, we primarily see the potato leafhopper, rose leafhopper, aster leafhopper and mint leafhopper.

The Potato Leafhopper (*Empoasca fabae*) can be distinguished by its yellow-green, wedge-shaped body, which is about 3 mm long as an adult. Nymphs tend to look very similar to adults without wings. This species feeds on well over 100 plants with the most significant being vegetable and fruit crops. However, they have been seen in cottonwood, willow, honey locust, hawthorn, birch, cherry and apple. Other species may transmit xylem-fastidious bacteria capable of causing scorch-like symptoms on elm, oak, boxelder maple and red maple. Excessive damage caused by potato leafhoppers is known as hopper-burn and often resembles fertilizer burns or leaf scorch.

Rose Leafhoppers (*Edwardsiana rosae*) are common pests on roses and other members of the family, including apples and blackberries. They are light green with distinctive red eyes at maturity. They are 6 to 8 mm long as adults, which increases the likelihood of finding them in your landscape plants. These insects often lay their eggs under the bark of rose canes, leaving a raised purplish spot behind. Rose leafhoppers also excrete honeydew, a sticky substance attracting ants and sooty mold. While sooty mold will not damage plants directly, it can grow so thick that it interrupts photosynthesis. Although rose leafhoppers can cause hopper-burn on plants, they are not commonly known as a vector of diseases as other leafhoppers are.

Aster Leafhoppers (*Macrostelus fascifrons*) are a smoky-green leafhopper between 2 and 5 mm. This species can be identified by six black spots on its head. Nymphs have these same markings but are missing the tented wings present on adults and are also much smaller. This species' host ranges around 170 plants, which include aster, cockscomb, carrot, onion and many flowering plants in the garden. Aster Leafhoppers transmit diseases to the plants like the aster yellows. They do this by first feeding on infected plants for an extended period and then proceeding to a non-infected plant.

Mint Leafhoppers (*Eupteryx melissae*), also known as Sage Leafhoppers, are spotted with brown and black markings and have a body between 3 and 4 mm. This leafhopper feeds on herbs primarily from the mint family. Mint, catnip, sage and rosemary are all possible hosts of this species. Mint leafhoppers cause damage similar to that of potato leafhoppers, with minimal damage presented as stippling of foliage, stunted growth and severe damage causing hopper-burn in the plant.

Other species worth mentioning are the colorful, red-striped Grape Leafhopper (*Erythroneura elegantula*) and the red and yellow-mottled, Variegated Leafhopper (*Erasmoneura variabilis*). These species usually limit their feeding to grape species, including Virginia creeper.

All leafhoppers are insects that feed by sucking nutrients out of plants using their sucking mouthparts. The loss of these nutrients is what causes plants to develop stippling in areas where the insects have removed nutrients from the plant. Damage can be easily mistaken for mite damage or herbicide drift.

Adults' wings form a tent over the main body of the insect giving the insect a wedge-like appearance or bullet shape. These small slender insects are capable of moving quickly, darting sideways or flying when disturbed.

Leafhoppers overwinter through a couple of different methods. The main method is for adults to lay eggs in crop debris that will hatch the following year in mid-April. Leafhoppers lay eggs by inserting them into leaves of the plant in late spring, depositing one to six eggs daily. These eggs hatch in approximately six to nine days as wingless nymphs. Proceeding through various molting stages, nymphs feed on plant material using their sucking mouthparts, causing stippled leaves or possibly transferring dangerous plant viruses. Most species will have at least two generations each year.

Control

Leafhoppers have many natural enemies and are not usually a significant problem for landscape plants. Watch for lacewings, minute pirate bugs, damsel bugs and assassin bugs, as these insects actively feed on leafhoppers. Leafhoppers are far more dangerous if a plant disease is present in your landscape, as they can sometimes transfer diseases. Promptly destroying diseased vectors will help protect other plants.

In high populations, leafhoppers can be a nuisance along walkways or cause hopper-burn damage to leaf surfaces. In these cases, human interaction may be needed. Insecticidal soaps and horticultural oils are the first line of defense because they interfere the least with predators. Target nymph stages whenever possible, spraying the undersides of leaves when leafhoppers are present. Do not spray oil-based chemicals when temperatures are above 80 F. Systemic insecticidal controls on non-edible plants have shown very good efficacy against leafhoppers when used as

a foliar spray. Pyrethroid-based chemicals are also effective against leafhoppers but detrimental to predatory insects.

Recommendation: Use the least toxic option *first* to protect your predatory insects, and then move onto other options until you see desirable results. The goal is not eradication of leafhoppers, but a manageable population as a food source for beneficial insects.



Figure 1. Potato Leafhopper. Photo credit: Photo by John Obermeyer, Purdue University

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Trade Names—To simplify information, trade names have been used. No endorsement of named products is intended nor is criticism implied of similar products not mentioned.

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