Citrus Leafminer Distorts Foliage

Doug Caldwell, Commercial Landscape Horticulture

Damaged foliage is distorted and the winding mines turn gray with age. Citrus leafminer attacks distort new growth as it is emerging. Younger trees should be protected more than older, established trees. Leafminer “trails” are silvery tunnels, 2 to 4 inches long with scattered frass deposits.

Anyone with citrus is familiar with these symptoms: the younger leaves become curled and distorted? Are there thin, silvery trails in the leaf tissue? Sometimes aphids will cause curling and cupping of foliage. But more often than not, it is damage caused by the citrus leafminer (*Phyllocnistis citrella*), the larva of a really small moth (4 mm wingspan!). As with many of our pests, CLM is originally from southeast Asia. It was found in the Homestead area in 1993. The key diagnostic to look for are the silvery “trails” just under the leaf surface. These turn gray with age and the crumbled leaves look pretty unsightly. CLM is most commonly found attacking leaves of grapefruit and pummelo, orange-jasmine (*Murraya paniculata*), various *Citrus* spp., kumquat and calamondin. Here it is February 8, and I’ve already seen the new set of leaves attacked on the grapefruit trees!

This leafminer seems to be present year round, especially when there is a flush of new growth. Depending on weather and temperate conditions, the development time from egg to adult (a “generation”) is about 13 to 52 days. Adults live for only a few days. In Florida, a new generation is produced about every three weeks. Females produce 20 to 100 eggs during their brief lifetime.

People from northern areas may be familiar with other landscape leafminer pests such as birch and holly leafminers. The lifestyle of a leafminer larva may be somewhat claustrophobic, but they live the easy life. They don’t have to go far to search for their next meal. In fact they live and sleep inside their food, like living in the midst of a buffet table! They are protected from wind and rain inside the leaf and hidden from many predators and parasites (to a certain degree) that may not readily see them.

People usually want to control the citrus leafminer to minimize the aesthetic damage caused by the distortion and graying of the infested foliage. Even I hate to look at those ugly, damaged leaves amongst the dark green, shiny foliage! But consider the age of the plant. Older citrus trees (more than 4 years old) generally tolerate leaf damage without any ill
affect on tree growth or fruit yield. CLM is more likely to cause damage in nurseries and young plants in the landscape because the new growth is stunted. Trees are unlikely to die even though they may be under constant attack. Another insidious aspect of this damage is that the wounds made by the entry and exit of the CLM may be “portals of entry” for the citrus canker bacterium.

**What To Do:** Be alert to new growth on young trees that are less than 4 years old. Treatment timing is tricky as it has to be early, before the tender leaves are half grown. Citrus trees' branches don't seem to break into new growth at the same time. Sporadic and not simultaneous bud expansion seems to be the citrus way of growth. This makes effective control up to the homeowner rather than a landscape maintenance company. The homeowner can check the trees on a weekly basis and spray the newly expanding foliage as it appears on each branch.

There are reports from California of a pheromone trap which can trick unsuspecting males into a sticky trap (see picture at right) thinking that there is a female moth waiting there. If you are familiar with gypsy moth traps, you know what I mean! A pheromone trap approach will greatly aid monitoring moth flight periods and maybe reduce damage. The pheromone is available from ISCA Tech in Riverside, California and other companies may have it by now as well, such as Suterra. ISCA Tech's list of lures is at http://www.iscatech.com/exec/lures.htm.

A parasitic wasp, *Ageniaspis citricola*, from Australia was released in 1994-1995 by the USDA and appears to be doing a pretty good job.

Foliar sprays of 2% horticultural mineral oil or a product labeled for fruit trees that contains spinosad is in a ferti-lome® product called 'Borer, Bagworm, Leafminer & Tent Caterpillar Spray ' (0.5% spinosad). Be sure that any product you spray is labeled for fruit trees. Also avoid spraying the flowers as the oil may make them drop prematurely and other pesticides may kill bees. The oil will also help suppress the asian citrus psyllid which vectors the citrus greening disease. These psyllids also swarm the new growth like ticks on a dog. The mineral oil spray is a good approach for the all to common green scale (*Coccus viridis*) and the sooty mold that it produces. For more information on these pests, google UF Featured Creatures and search for the specific insects.

Doug Caldwell, Ph.D., is the Commercial Landscape Horticulture Extension Educator with the University of Florida Collier County Extension. The Extension Service is an off-campus branch of the University of Florida, Institute of the Food and Agricultural Sciences and a department of the Public Services Division of Collier County government. E-Mail dougbug@ufl.edu; call (239) 353-4244 ext. 203. Extension programs are open to all persons without regard to race, color, creed, sex handicap or national origin.