

CITRUS DISEASE SPOTLIGHT

Figure 1 (right). Young canker lesions with yellow halos surrounding each raised lesion



Figure 2 (below). Canker lesions following leafminer (*Phyllocnistis citrella*) tunnels on partially expanded leaves



Asian citrus canker

By Megan Dewdney

Canker lesions start to become particularly noticeable in early summer. Fruit are most susceptible from late April to mid-July, although grapefruit are susceptible through mid-October. It is nearly impossible to control canker on expanding leaves because the rapid growth rate causes the leaves to outgrow the protective copper layer.

Scientific name: *Xanthomonas citri* subsp. *citri*

Leaf symptoms: Leaf symptoms begin as tiny, blister-like lesions that are slightly raised. Yellow halos and water-soaked margins surround the lesions and are especially prominent when lesions are young (Figure 1). With age, lesions change from light tan to dark brown, and the center becomes raised and corky. The lesions are visible on both sides of the leaf. Leaf lesions can be more severe with leafminer damage (Figure 2).

Stem and twig lesions: The appearance of the raised lesions on



Figure 3. Canker stem lesions on a young twig



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Figure 4. Canker lesions on a mature fruit (left) and on an immature fruit (right)

twigs and fruit are similar (Figure 3). They are dark brown to black with water-soaked margins and become corky with age. On woody tissues, the raised lesions are the same color as the branches with a wart-like texture. Infections on woody stems are indications that the disease has been present for at least one season, and these lesions can produce inoculum for up to four years.

Fruit symptoms: Canker does not affect the internal quality of fruit. Very young lesions are blister-like, tan and raised. They can be surrounded by yellow halos and water-soaked margins. The lesions become dark brown to black with age (Figure 4). The centers will eventually become sunken with a corky appearance. Old lesions often are gray with dark brown margins. Fruit lesions can lead to early fruit drop, especially on the more susceptible species like grapefruit or Hamlin sweet orange.

Good canker management has three main aspects:

- 1) Windbreaks to slow wind speeds below the damaging 18 mph level;
- 2) good leafminer control to reduce bacteria populations in field; and
- 3) copper applications approximately every three weeks from early April. Valencia oranges, tangerines and tangerine hybrids generally do not need copper applications after the end of June. Early oranges like Hamlin need copper applications until mid-July. The very susceptible grapefruit destined for fresh fruit will need copper applications until mid-October. A copper residue model is available to improve the timing of copper applications at <http://www.agroclimate.org/tools/cudecay/>

More details can be found in the

Florida Citrus Pest Management Guide (<http://www.crec.ifas.ufl.edu/extension/pest/>).

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