

MANAGEMENT

- Apply fungicides (e.g., copper)
- Eliminate leaf litter
- Increase airflow in trees

GROWER RESOURCES

- University of Florida, IFAS, Citrus Research and Education Center website, www.crec.ifas.ufl.edu
- Annual Florida Citrus Pest Management Guide
- Citrus Black Spot laminated sheet
- Citrus Black Spot Management Timing Schedule laminated sheet
- Packinghouse Citrus Black Spot ID
- Identification of Early Citrus Black Spot Symptoms
- Citrus Black Spot Field Identification Pocket Guide

REPORT LIKELY SUSPECTS

If you suspect your citrus tree may have this disease, please contact your local county extension office or the Florida Division of Plant Industry at 1-800-282-5153

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U.S. Department of Agriculture, Cooperative Extension Service, University of Florida, IFAS, Florida A. & M. University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Nick Place, Dean.

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Gulf Coast Research and Education Center
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County Extension Offices with Citrus Agents
Hardee, Hendry, Highlands, Lake, Polk,
St. Lucie, Sumter

Websites

Citrus Extension Agents
<http://citrusagents.ifas.ufl.edu>

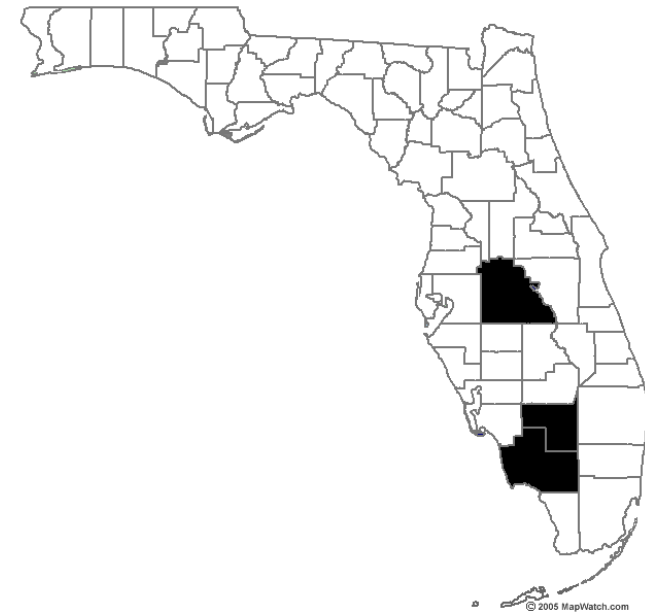
University of Florida, IFAS, Citrus REC
www.crec.ifas.ufl.edu

University of Florida, IFAS, South Florida REC
<http://www.imok.ufl.edu/>

Local County Extension Office
<http://solutionsforyourlife.ufl.edu/map/index.html>

*REC-Research and Education Center

CITRUS BLACK SPOT: No longer an exotic disease



A manageable disease in the
Florida Citrus Industry

UF UNIVERSITY of
FLORIDA
IFAS Extension

January 2014

HISTORY

- Citrus black spot was first found in Southwest Florida in March 2010.
- The initial find was contained to a small area centered in South Florida near Immokalee. By the first week of May, the disease had been found in another location about 14 miles from the original find.
- It is expected to be found in additional areas when the new harvest seasons begins in the fall
- Around the world, black spot can be found in Argentina, Australia, Brazil, China, Ghana, Mozambique, Philippines, South Africa, Sub-Saharan Africa, Taiwan, and Uruguay among other subtropical countries.



CITRUS BLACK SPOT

- Caused by *Guignardia citricarpa* (sexual stage) and *Phyllosticta citricarpa* (asexual stage)
- All commercial cultivars are susceptible, but late-maturing oranges (e.g. 'Valencia') and lemons are most vulnerable.
- Affects fruit rind and leaves
- Four main fruit symptom types: hard spot, false melanose, cracked spot, and early virulent spot
- Most common symptom is hard spot
- Causes fruit drop
- Severely affected fruit can drop before harvest, causing significant yield loss.

HARD SPOT

- Small, round, sunken lesions with tan centers and brick-red to chocolate-brown margins
- Fungal structures appear as slightly elevated black dots.
- First appears on sunny side of fruit



FALSE MELANOSE

- Numerous small, slightly raised lesions that can be tan to brown
- Occurs on green fruit and does not have pycnidia
- May become hard spot later in season
- First appears on sunny side of fruit



CRACKED SPOT

- Large, flat, dark-brown lesions with raised cracks in their surface
- Thought to be caused by an interaction with rust mite
- Can become hard spot later in the season
- Occurs on green and mature fruit



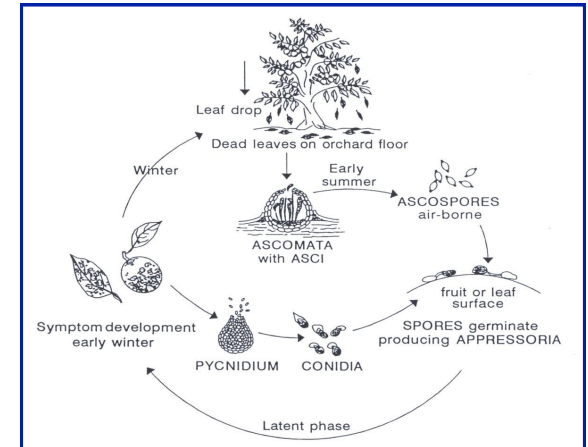
EARLY VIRULENT SPOT

- Also known as freckle spot
- Small, reddish, irregularly shaped lesions
- Occurs mostly on mature fruit as well as postharvest in storage
- Can develop into either virulent spot or hard spot
- Virulent spot is caused by the expansion and/or fusion of other lesions, covering most of the fruit surface toward the end of the season or in storage.



SPREAD

- Wind-borne spores (ascospores and conidia), rain splash, or movement of infected plant material
- Major source of inoculum is airborne ascospores (sexual spores) from the leaf litter.
- Minor source of inoculum is conidia (asexual spores) from pycnidia that form on fruit, dead twigs, and leaf litter. The conidia are rain-splash dispersed. Potential problems on cultivars that have young and mature fruit on the tree simultaneously.



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LEAF SYMPTOMS

- Rare in well-managed groves; most common on lemons
- Older lesions are small, round, and sunken with a gray center, dark-brown margin, and yellow halo.
- Younger lesions are reddish brown with light centers and a diffuse yellow halo.

