**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

**CONTACTS**

**Citrus Research and Education Center**
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863-956-8651

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**Southwest Florida Research and Education Center**
Pamela Roberts, Ph.D. - Plant Pathologist
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**Indian River Research and Education Center**
Mark Ritenour, Ph.D. - Postharvest Physiology
772-468-3922

**Gulf Coast Research and Education Center**
Natalia Peres, Ph.D. - Plant Pathologist
813-633-4133

**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
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.

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.

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.

FALSE MELANOSE

- 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.

For more information, please contact the University of Florida, IFAS, Citrus Research and Education Center, Lake Alfred 863-956-1151