

## HISTORY

- Citrus black spot was first found in South 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 2010-11 harvest season 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.



## CITRUS BLACK SPOT

- Caused by *Guignardia citricarpa* (sexual stage) and *Phyllosticta citricarpa* (asexual stage)
- All commercial cultivars are susceptible, but late-maturing cultivars (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



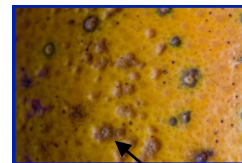
## CRACKED SPOT

- 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



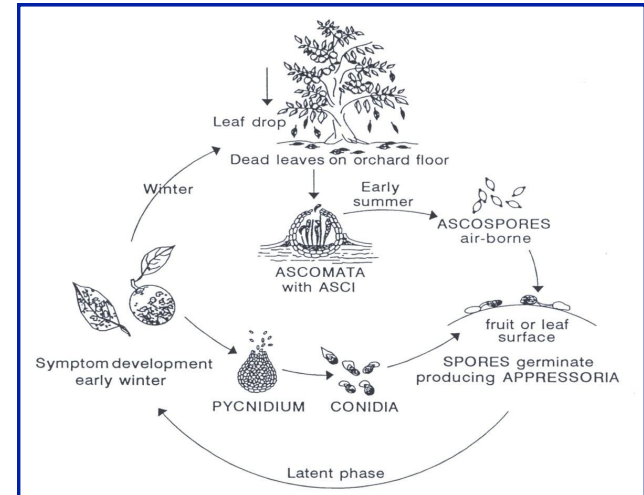
## EARLY VIRULENT SPOT

- 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.



## 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.



## 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](http://www.crec.ifas.ufl.edu)
- Citrus Black Spot laminated sheet
- Citrus Black Spot Management Timing Schedule laminated sheet
- Packinghouse Citrus Black Spot ID

## REPORT HIGH 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

## LOCAL CONTACTS

Ryan A. Atwood  
Marion, Lake, Volusia, Orange, Seminole, Brevard, & Osceola Counties  
352-343-4101

Gary K. England  
Citrus, Hernando, Sumter, & Pasco Counties  
352-793-2728

Steve Futch, Ph.D.  
DeSoto, Hardee, Manatee, & Sarasota Counties  
863-956-1151

Tim Gaver  
St. Lucie County  
772-462-1660

Tim Hurner  
Highlands County  
863-402-6540

Chris Oswalt  
Polk & Hillsborough Counties  
863-519-8677

Mongi Zekri, Ph.D.  
Hendry, Glades, Lee, Charlotte, & Collier Counties  
863-674-4092

## CONTACTS

Megan M. Dewdney<sup>2</sup>  
Plant Pathologist  
863-956-1151 ext. 1267

Natalia Peres  
Plant Pathologist  
813-633-4133

Mark Ritenour  
Postharvest Physiology  
772-468-3922

Pamela Roberts  
Plant Pathologist  
239-658-3400

Jamie Yates<sup>2</sup>  
Coordinator, Canker & Greening Extension Education  
863-956-1151

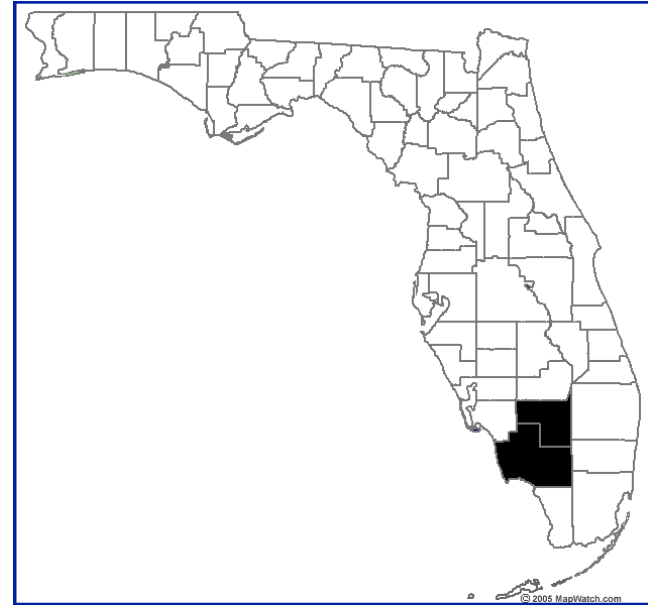
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2. Megan Dewdney, assistant professor, Department of Plant Pathology, and Jamie Yates, coordinator, Canker, HLB and Exotic Disease Extension Education, Citrus REC, Lake Alfred, Florida; Cooperative Extension Service, Institute of Food and Agricultural Sciences; University of Florida; Gainesville, FL 32611.

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## CITRUS BLACK SPOT: No longer an exotic disease



## A manageable disease in the Florida Citrus Industry

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