

# Screening Aid for Citrus Black Spot (CBS) Disease Symptoms

By Hilda Gomez, Plant Pathologist, USDA, APHIS, PPQ-CHRP Program

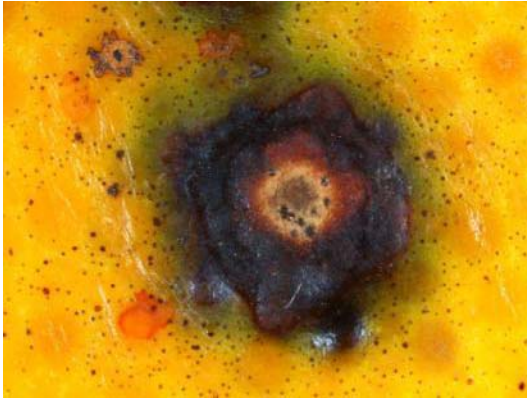


Citrus black spot (CBS) is an important fungal disease with significant economic impact on the citrus industry throughout the world. Among the commercial citrus varieties, late maturing oranges, lemons, mandarins and grapefruit are the most susceptible. The causal pathogen of the disease is the fungus named *Guignardia citricarpa* or *Phyllosticta citricarpa*, according to its sexual and asexual stages respectively. Ascospores from *Guignardia citricarpa* that occur on leaf litter and dead twigs on the grove are the most important source of inoculum.

The disease affects fruit, leaves and twigs of citrus; however, only fruit symptoms are readily noted and are the ones that best allow field identification. Fruit symptoms are variable, depending mainly on the temperature and fruit maturity. Five different symptoms have been observed in Florida since the detection of the disease in 2010.



*Citrus Black Spot symptoms are frequently numerous and irregularly distributed on the fruit peel.*



**Symptom type #1: "Hard spot" is the most typical symptom of CBS. Usually appears between the beginning of yellow coloration and maturity. Pycnidia are not always present. The photos on this page show different ways the hard spot symptom can appear.**



**Early stages of hard spot symptoms. Note green tissue surrounding the lesions**

**Advanced stage of a hard spot lesion showing a tan center and the brick-red raised border**



**Longitudinal section of a hard spot lesion on fruit**



**Symptom type # 2- "Freckle spot" or "early virulent spot".** Reddish or colorless spots lacking a halo which are a sign of heavy infection.

**Symptom type # 3- "Virulent spot"**  
Fusion and expansion of many lesions covering part of the surface of heavy infected fruits giving a leathery appearance. May cause premature fruit drop and serious post-harvest losses.



**Symptom type # 4- "False melanose" or "speckled blotch".** Usually appears on green fruit.



**Symptom type # 5- "Cracked spot".** Lesions with cracked surface and irregular margins.



**Symptoms on green fruit that can become hard spots later in the season.**