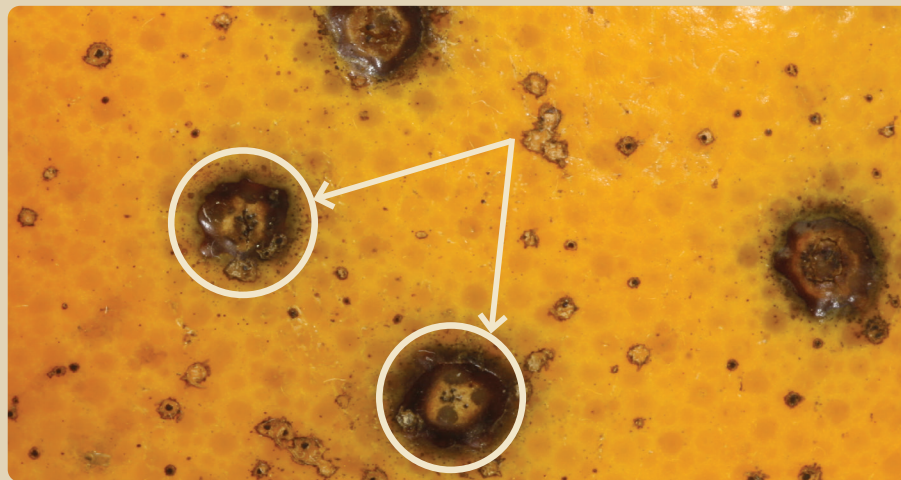


# Citrus Black Spot

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Hard spot symptoms on 'Valencia'



Fungal structures (pycnidia) found in hard spot lesions



Severe hard spot symptoms on 'Valencia'

**FUNGAL DISEASE:** Caused by *Phyllosticta citricarpa*

**INOCULUM SOURCE:** Conidia (asexual spores) from pycnidia that form on fruit, dead twigs, and leaf litter. The conidia are rain-splash dispersed. The conidia are a particular problem on cultivars that have young and mature fruit on the tree simultaneously but can be present and infect any cultivar. The airborne ascospores are not present in Florida. This spore type may become a problem in the future and lead to greater spread of the disease.

**CULTIVAR SUSCEPTIBILITY:** All commercial cultivars are susceptible, but late-maturing cultivars and lemons are most vulnerable.

**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 have reddish brown margins with light centers and a diffuse yellow halo.

**FRUIT SYMPTOMS:** Variable. Four main types:

**Hard spot** (most common and diagnostic)—Small, round, sunken lesions with gray centers with brick red to black margins. Fungal structures appear as slightly elevated black dots. Appears as fruit begins to color where light exposure is highest.

**False melanose**—Numerous small, slightly raised lesions that can be tan to brown. Occurs on green and mature fruit and does not have pycnidia. May

become hard spot later in the season.

**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 (freckle spot)**—Small, reddish, irregularly shaped lesions. Occurs 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.

**SEVERELY AFFECTED FRUIT CAN DROP BEFORE HARVEST, CAUSING SIGNIFICANT YIELD LOSS.**

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## OTHER BLACK SPOT SYMPTOMS



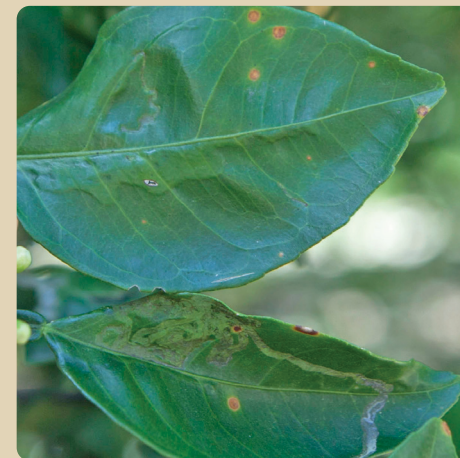
Cracked spot symptoms on 'Valencia'



Close view of cracked spot with hard spots forming



Small lesions that will likely develop into hard spot



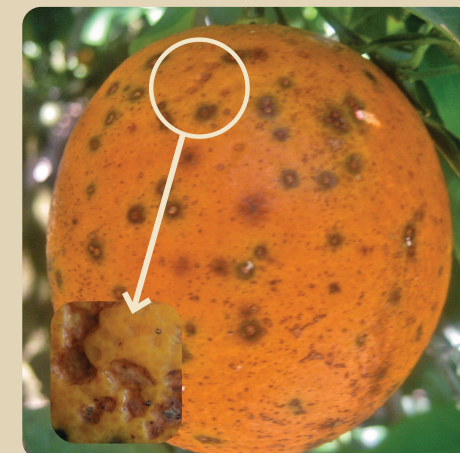
Young lesions on 'Valencia' leaves



False melanose



Leaf symptoms on 'Valencia'



Early virulent (circled) and hard spot lesions with a close-up of virulent spots