



# Anthracnose of Cucurbits

Guide H-247

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## Diagnosis at a Glance:

Causal agent:	<ul style="list-style-type: none"> <li>• <i>Colletotrichum orbiculare</i></li> </ul>
Hosts:	<ul style="list-style-type: none"> <li>• Cucurbits, including melons, squash, pumpkin and watermelon.</li> </ul>
Symptoms:	<ul style="list-style-type: none"> <li>• Roughly circular lesions near leaf veins.</li> <li>• Leaf lesions are light brown to reddish in color.</li> <li>• Leaves become distorted.</li> <li>• "Shot hole" appearance.</li> <li>• Lesions on fruit are circular, sunken, water-soaked areas.</li> <li>• Early fruit infections may result in abortion or malformation of the affected fruit.</li> </ul>
Signs:	<ul style="list-style-type: none"> <li>• Pink spore masses develop on fruit.</li> </ul>
Conditions for disease:	<ul style="list-style-type: none"> <li>• Humid, rainy weather.</li> <li>• Warm temperatures (70-80°F).</li> </ul>
Management:	<ul style="list-style-type: none"> <li>• Cultivar resistance.</li> <li>• Plant disease-free seed.</li> <li>• Deep plow crop residue.</li> <li>• Crop rotation.</li> <li>• Fungicides.</li> </ul>

Anthracnose, caused by the fungus *Colletotrichum orbiculare*, is a relatively common fungal disease in humid areas, but it appears sporadically in New Mexico's dry environment. When conditions are favorable, the fungus can cause significant losses in New Mexico-grown cucurbits, especially in watermelons.

The fungus can affect all aboveground portions of cucurbits and is especially common on watermelons, melons and cucumbers. Squash and pumpkin are less susceptible, although they can be infected when conditions are ideal for disease development. Leaf lesions first appear near veins, are roughly circular (often restricted by veins) and range from light brown to reddish. These lesions increase in size as the disease progresses and may eventually be greater than 1 cm in diameter. The leaves become distorted, and the lesion's center may crack or drop out, creating a "shot hole" appearance.

Fruit lesions are circular, sunken, water-soaked areas, which first develop as the fruit approaches maturity. In moist conditions, the lesions turn black and are covered with pink spore masses. Early fruit infections may result in abortion or malformation of the affected fruit.

The fungus survives between crops on infected plant residue or infected volunteer plants and can be carried on seed harvested from infected fruit. The spores are spread by wind, rain, equipment and field workers. Humid, rainy weather is essential for infection. The optimum conditions for the initial infection are warm temperatures (70-80°F) and 100 percent relative humidity for 24 hours. Visible symptoms of infection can occur within 96 hours after the initial infection.

As is common with many fungal pathogens, pathogenic specialization has been identified in *Colletotrichum*. There appear to be at least two distinct races (and perhaps as many as seven), which vary in their ability to infect a range of cucurbit genera, species and cultivars.

Race specialization presents challenges for breeding cultivars for resistance to the fungus. In many cases, resistance is obtained for one but not all pathogenic races. However, resistance is still an important way to manage this disease. Some success has been obtained with developing cucumber and watermelon cultivars that possess at least some resistance. Information about resistant cultivars can be obtained from seed sources.

A diligent fungicide program also can be effective in reducing the disease. In locations where anthracnose is common year to year, growers may want to begin a fungicide program prior to disease development or immediately after the first evidence of infection. Several fungicides are registered to help control this disease. As with all fungicide programs, fungicide resistance can develop within the pathogen population. Therefore, materials should be used in rotation and only as often as absolutely necessary to obtain adequate control.

Additional control recommendations include using disease-free seed, deep plowing the crop residue immediately upon completing harvest and crop rotation (no cucurbits of any kind grown in the field for at least one year).