Martin-Gatton College of Agriculture, Food and Environment
Cooperative Extension Service

Plant Pathology Fast Facts

Cucurbit Anthracnose

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Cucurbit anthracnose, commonly known as watermelon anthracnose, can affect all cucurbit species. Cucumbers, muskmelons (cantaloupe, honeydew), and watermelons are highly susceptible, while gourds, squash, and pumpkins are less susceptible.

Cucurbit anthracnose is most severe in late summer, particularly during warm periods of frequent or heavy rain. This is usually in July and August in Kentucky.

All above ground plants parts are affected by cucurbit anthracnose: leaves, stems, and fruit. Losses include sunburn of fruit as a result of leaf blight, vine death from girdled stems, and fruit rot.

SYMPTOMS

Leaf symptoms on cucumber, muskmelons, and squash begin as water-soaked, yellowish spots that expand to brown or tan. Circular spots become irregular, reaching ½ inch diameter. Holes in the centers of leaves fall out giving a shothole appearance. As disease advances, spots coalesce, and entire leaves may blight. Leaf symptoms on watermelon are smaller than those on other cucurbits, and spots turn from dark brown to black. Spots coalesce, become necrotic, and leaves may blight.

Anthracnose symptoms on watermelon leaves.
(Photo: Kenny Seebold, UKY)

Stem and petiole lesions are most common on cucumber, muskmelon, and watermelon. Spindle-shaped lesions become sunken, expanding to girdle stems. Vines beyond girdled sites wither and die.

Fruit infections begin as circular, raised, yellow to tan blisters that crack. Lesions expand into circular to oval, ¼ to ½ inch diameter, sunken spots. During wet conditions, pink to salmon-colored spores are visible; when these spores are washed away by rain or irrigation, black stroma remain in centers of lesions. If fruit are infected when young, they typically abort.

DISEASE CYCLE

Cucurbit anthracnose is caused by *Colletotrichum orbiculare* (formerly *C. lagenarium*). The fungus can infect cucumber, gourd, luffa, muskmelon (cantaloupe, honeydew), pumpkin, squash, and watermelon, as well as weeds in the Cucurbitaceae family. *Colletotrichum orbiculare* also infects tobacco.

Colletotrichum orbiculare overwinters in plant debris or soil, surviving 2 or more years without a host.

The fungus favors warm (68° to 78°F), wet weather (100% RH for 24 hours). Under optimal conditions, spores are water-splashed from overwintering debris or infected tissue. The pathogen can also move short distances by wind, cucumber beetles, workers, tools, or equipment. Long distance spread occurs by moving infested seed and infected fruit.

MANAGEMENT

Cultural Practices

Cultural practices should be considered whether the production system is conventional or organic, spray or non-spray.

- Plant resistant cultivars
- Rotate fields, 2 to 3 years of a non-cucurbit crop
- Space rows and plants for increased air circulation
- Avoid working in fields when plants are wet
- Deep till after crop termination to encourage decomposition of debris
- Manage weeds
- Clean pick; remove infected fruit from fields as soon as symptoms develop

Fungicides

Use products that are effective against anthracnose when crops are most susceptible, especially if weather is rainy during July and August. Always rotate FRAC groups and follow label instructions. Most effective fungicides include:

- Excellent to Good
    - FRAC 1: thiophanate methyl
    - FRAC 11: azoxystrobin, fluoxastrobin
    - M class: chlorothalonil, mancozeb
- Good to Fair
    - FRAC 3: pyraclostrobin
    - FRAC 3+7: difenconazole+benzovindiflupyr
    - FRAC 7+11: fluopyram+trifloxystrobin
- Biological or Biorational
    - *Bacillus amyloliquefaciens*
    - *Bacillus mycoides*
    - *Clonostachys rosea*
    - Copper
    - Lime sulfur
    - Polyoxin D zinc salt

Note: QoI (FRAC 11) resistance has been identified in adjacent states, but not in Kentucky. Use caution when applying QoI products, follow label instructions, avoid sequential applications, observe application limits, select a pre-mix material, and/or tank mix with other products like an SAR.

ADDITIONAL RESOURCES

The Department of Plant Pathology's website includes resources including cultural calendars, spray schedules, and disease-focused fact sheets.

https://plantpathology.ca.uky.edu/extension/publications#VegetableCrops

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