



## Pacific Pests and Pathogens - Fact Sheets

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### Cucurbit anthracnose (200)



Photo 1. Angular brown spots on the leaf of watermelon, caused by the anthracnose fungus, *Colletotrichum orbiculare*.



Photo 2. Round and oval light brown spots showing "shot-hole" symptom on cucumber, caused by the anthracnose fungus, *Colletotrichum orbiculare*.

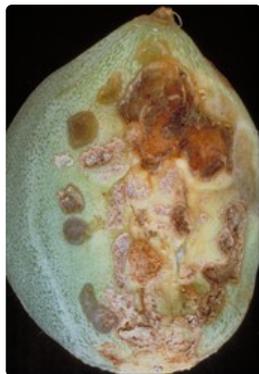


Photo 3. Large spots of cucurbit anthracnose, *Colletotrichum orbiculare*, on melon, showing the greyish water-soaked spots (lower left), and the brown older spots (top right) that are joining together and developing into an extensive rot.



Photo 4. Sunken spots on cucumber caused by anthracnose, *Colletotrichum orbiculare*.

#### Common Name

Cucurbit anthracnose

#### Scientific Name

*Colletotrichum orbiculare*; sometime known as *Colletotrichum lagenarium*. Three races are known.

#### Distribution

Widespread. In tropical and sub-tropical countries. Asia, Africa, North, South and Central America, the Caribbean, Oceania. It is recorded on cucurbits from American Samoa Australia, Federated States of Micronesia, Fiji, Marshall Islands, New Caledonia, New Zealand, Palau, Papua New Guinea, Samoa, and Tonga.

#### Hosts

Common on cucurbits, i.e., members of the cucumber family, especially, cucumber, melon and watermelon.

#### Symptoms & Life Cycle

All aboveground parts of cucumber, melon and watermelon are susceptible to infection. However, symptoms vary depending on the host.

On watermelon leaves, the spots are irregular, angular, and turn dark brown or black (Photo 1); on cucumber and melon, the spots are small, brown with haloes, later enlarging as round, reddish-brown spots. The centers of the spots fall out, giving the leaf a 'shot-hole' appearance (Photo 2). On the stems, the spots may cause the plants to wilt, especially melons.

On the fruit, round, pale brown, sunken spots (up to 6 mm deep) with raised margins, up to 30 mm diameter, often more common on the lower half (Photo 3). The fruit become infected as they start to mature. The lesions are water-soaked, greyish, lacking a clear margin at first, and then turn dark green to brown. Pink to orange spore masses occur on the spots during wet weather.

Other rot-causing fungi and bacteria enter the spots and completely destroy the fruit.

Spread over relatively short distances occurs as spores in wind-blown rain. Spread over longer distances occurs on seed; the fungus spreads from the seed to leaves and vines. Survival is on seed and also on the diseased remains of previous crops. High humidity, rain and temperatures of at least 25°C are ideal for development and spread of the disease.

## Impact

Anthrachnose means "coal disease"; it is a term used for diseases caused by fungi that produce dark spots on leaves, leaf stalks, stems and fruit. Anthracnose fungi are invariably associated with wet-weather. *Colletotrichum orbiculare* is a destructive disease that occurs in wet and warm weather. It is especially serious on cucumber, melon and watermelon. Infections that start in the field can continue in storage and transit. Losses are not well documented.

## Detection & inspection

Look for large sunken spots on fruits, and spots on the leaves, the centres of which fall out. Look for pinkish spore masses in the centre of the spots on the fruit, and use a hand lens to see black, bristle-like fungal structures.

## Management

### CULTURAL CONTROL

Before planting:

- Use disease-free seed. It is essential that commercially produced seed is used if outbreaks of the disease occur.
- Check each seedling for freedom from leaf spots before taking them from the nursery to the field. Destroy seedlings that have leaf spots.
- Do not plant near to older crops of cucumber, melon or watermelon, especially if they have signs of anthracnose.

During growth:

- Avoid overhead irrigation as water splash spreads this fungus, or if overhead irrigation is used, apply early in the day so that the plants dry quickly.
- Avoid working in the crops when the leaves and vines are wet, as people and equipment can spread the spores.
- Control weeds, especially wild or volunteer cucurbits.

After harvest:

- Do not plant cucurbits in the same land as the previous crop, especially if it was diseased; leave a gap of 2-3 years and during that period avoid other crops in the cucumber family.
- Plough in or remove crop residues in infected fields.

### RESISTANT VARIETIES

There are resistant varieties of cucumber and watermelon, but not melon.

### CHEMICAL CONTROL

If a fungicide is needed, use mancozeb, chlorothalonil or a copper product.

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Photos 1 Clemson University - USDA Cooperative Extension Slide Series, Bagwood.org. Photo 2 Gerald Holmes, California Polytechnic State University at San Luis Obispo, Bagwood.org. Photo 3 Kohler F, Pellegri F, Jackson G, McKenzie E (1997) *Diseases of cultivated crops in Pacific Island countries*. South Pacific Commission. Pirie Printers Pty Limited, Canberra, Australia. Photo 4 Charles Averre, North Carolina State University, Bagwood.org.

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The mobile application is available from the Google Play Store and Apple iTunes.

