Anthracnose on pepper
Colletotrichum (C. gloeosporiodes, C. capsici. C coccodes)

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Anthracnose can be caused by at least three species of Colletotrichum, viz. C. gloeosporiodes, C. capsici and C. coccodes). The pathogen occurs worldwide. In South East Asia, C. gloeosporiodes has been frequently found associated with anthracnose.

Symptoms and damage

Colletotrichum is able to cause disease on all parts of the pepper plant and during all growth stages.

On leaves

On pepper fruits

- Initially water-soaked lesions appear tat become soft, slightly sunken and tan
- Salmon-colored fruiting bodies in concentric rings are formed that contain microscopically visible, cylindrical septated conidia and black spines (setae). Lesions can be up to 30 mm in diameter
- Occassionally, lesions are brown and then black from the formation of sclerotia

Symptom expression is favored by warm, wet weather. The optimum temperature is 27 oC, but infection can occur between 10 and 30 oC. Severe losses of 30% or more can be expected during rainy weather,. Mature fruit is more susceptible than immuature fruit.

Survival and dissemination

- Spores survive in acervuli and sclerotia in and on seeds and also on infected plant debris, including solanaceous hosts
- The fungus is often introduced into the field via infected transplants.
- Spores are spread via splash dispersal during rainy weather
- Infection depends predominantly on free water.

Prevention and cure

Cultural practices

- Produce seed in arid or semi-arid areas or in the dry season and isolated from other solanaceous crops

- Use certified pathogen-free seed and plant bulbs, and disease-free transplants
- Grow in well-drained soil, in places were air circulation is good
- Avoid the use of overhead irrigation; drip irrigation is preferred. If used, allow crops to dry quickly
- Lower the density of transplanted crops
- Control damaging insects
- Treat seed with hot water or a fungicide before planting
- Avoid working around plants when the foliage is wet
- Eradicate weeds, in particular members of the Solanaceae
- Strive to maintain a balanced fertility. A high nitrogen rate will increase the prevalence, whereas high rates of calcium and potassium seems to reduce the infection rate.
- Eliminate pepper cull piles and burn or deeply plow plant debris. Practice crop rotation (solanaceous species only every 3 years)
- Use tolerant or resistant cultivars if possible. Choose cultivars with a shorter ripening period.

Chemical and physical control

- hot water treatment (30 min, 52 oC)
- Anthracnose can be controlled by Captan, copper sulfate and Maneb

Pictures

Fig. 1. Irregular shaped gray brown leaf spots with dark brown edges

Fig. 2. Mature pepper fruit with multiple lesions

Fig. 3. Salmon coloured spore masses are formed on fruits in concentric rings

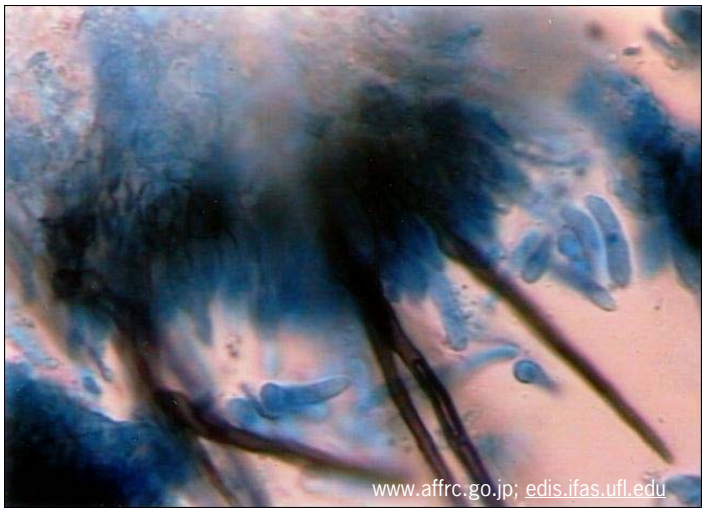

Fig. 4. Microscopical image of spores (conidia) and black spines observed on fruiting bodies

Fig. 5. Cylindrical septated conidia bodies