

Mango anthracnose (009)

Common Name

Mango anthracnose, mango blossom blight

Scientific Name

Glomerella cingulata (it also has the name of *Colletotrichum gloeosporioides*). *Glomerella* is the sexual stage of the fungus, and *Colletotrichum* the asexual stage. The disease is often referred to as 'anthracnose' of mango. The word anthracnose means 'coal', so fungi that produce dark spots are often given this name. Another fungus also causes leaf spots: *Scolecotigmina mangiferae* (**see Fact Sheet no. 325**).

Distribution

Asia, Africa, North, South and Central America, the Caribbean, Europe, Oceania. Anthracnose of mango has been recorded from Australia, American Samoa, Cook Islands, Federated States of Micronesia, Fiji, Guam, Marshall Islands, New Caledonia, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, and Vanuatu.

Hosts

Mango. Many other crops are hosts of this fungus, including avocado, capsicum, coffee, eggplant, papaya, tomato and yam. There are different strains, infecting different crops and weeds.

Symptoms & Life Cycle

Large numbers of spores are formed in the spots; the spores are splashed by rain onto other leaves, flowers and shoots. They germinate, infect and produce more spots and blights. Young leaves are most susceptible to infection (Photo 1). At first, the spots are small, black and irregular, often expanding to form large dead areas that dry and fall out.

On mature fruits, the fungus remains as pinpoint infections until the fruit ripens; then the infections form dark brown to black spots with orange-pink spore masses (Photo 2).

Impact

The fungus causes severe damage during wet weather. It causes a blight of flowers and young shoots, leaf spots, and fruit rots. In wet weather, flower blight results in low yield and shoot dieback. Young infected fruits develop black spots, shrivel and fall off. Infection of mature fruit leads to losses in storage.

Stigmina causes black spots on the leaves, which may merge to form large black areas. During wet weather the fungus may cause early leaf fall.

Detection & inspection

Look for flower blights, and spots on young leaves and fruits in wet weather. However, it is not always easy to distinguish between diseases caused by *Glomerella* and *Stigmina*. Spots of *Glomerella* are usually larger on the leaves, whereas those of *Stigmina* are about 6 mm diameter, surrounded by a wide light greenish zone (Photos 3-5).



Photo 1. Shoot blight of mango, caused by *Colletotrichum gloeosporioides*. Some of the spots have joined together destroying large areas of the leaves, typical for a 'blight' disease.



Photo 2. Dark spots, many enlarging and joining together, of mango anthracnose, *Glomerella cingulata*. The fungus infects the skins and later develops in storage. Orange-pink spore masses develop in the centres of these areas.



Photo 3. Mangoes for sale at a market showing dark spots of anthracnose, *Colletotrichum gloeosporioides*.



Photo 4. *Scolecotigmina mangiferae* leaf spots on underside of a mango leaf; they are small, dark, irregular spots.

Management

These diseases are serious in high rainfall areas and difficult to control. Management requires pruning of the trees and applications of fungicides.

CULTURAL CONTROL

It is important to prune trees to allow air to flow freely through the tree canopy to reduce humidity. Trees should be less than 4 m tall for easy management and harvesting. Diseased twigs should be removed and burnt along with fallen leaves.

RESISTANT VARIETIES

Indo-Chinese/Philippine varieties are said to have some resistance to the fungus and need to be tested in Pacific island countries. They have good flavour, and flesh with low-fibre.

CHEMICAL CONTROL

Frequent and timely application of chemicals is necessary to control *Glomerella* leaf and flower blight. Applications need to begin when the flowers first appear and continue at recommended intervals (e.g., 3 to 4-week) until the pre-harvest waiting period. In Australia, several fungicides are registered from the control of anthracnose, including mancozeb, copper (copper hydroxide, copper oxide, copper oxychloride or copper sulphate), prochloraz, or azoxystrobin. See guide to their use: https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0011/125876/mango-anthracnose-pf19.pdf.

Post-harvest dips in fungicide (e.g., carbendazim) and hot water (both treatments are for 5 minutes at 52°C) control fruit infections, preventing storage rots. If using carbendazim, allow 3 litres of dip per kilogram of fruit.

When using a pesticide, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, and pre-harvest interval. Recommendations will vary with the crop and system of cultivation. Expert advice on the most appropriate pesticide to use should always be sought from local agricultural authorities.



Photo 5. *Scolecotigmina* leaf spots on the top side of a mango leaf, small, dark, irregular spots with light green margins. Compare with anthracnose.



Photo 6. Close-up of *Scolecotigmina* leaf spots.

AUTHORS Helen Tsatsia & Grahame Jackson

Information from Chin D et al. (2010) Field guide to pests, beneficials, diseases and disorders of mangoes. Northern Territory Government, Department of Resources, Australia. (https://dpiir.nt.gov.au/_data/assets/pdf_file/0006/227832/mango_field_guide.pdf); and Stovold GE, Dirou JF (2004). Blight diseases in mangoes. agnote. NSW Department of Primary Industries. (https://www.dpi.nsw.gov.au/_data/assets/pdf_file/0009/120114/blight-disease-mango.pdf), and from Nelson SC (2008) Mango anthracnose (*Colletotrichum gloeosporioides*). (Cooperative Extension Service, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa. (<https://www.ctahr.hawaii.edu/oc/freepubs/pdf/pd-48.pdf>), and Photos 1-3,5 Kohler F, et al. (1997) Diseases of cultivated crops in Pacific island countries. South Pacific Commission. Pirie Printers Pty Limited, Canberra, Australia. Photo 4 McKenzie E (2013) *Scolecotigmina mangiferae* PaDIL - (<http://www.padil.gov.au>).

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