Pacific Pests, Pathogens & Weeds - Fact Sheets

https://apps.lucidcentral.org/ppp/

Banana black cross (071)

Photo 1. A single banana black cross spot, *Phyllachora musicola,* parallel to the veins of the leaf.

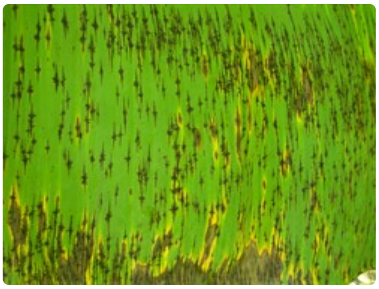

Photo 2. Dense infection of banana black cross, *Phyllachora musicola.*

Photo 3. Spots of banana black cross, *Phyllachora musicola*, are entry points for *Cordana musae.*

Common Name

Banana black cross, back cross disease, tar spot

Scientific Name

Phyllachora musicola

Distribution

Widespread, in Asia, Africa and Oceania. It is recorded from American Samoa, Australia, Fiji, New Caledonia, Niue, Papua New Guinea, Samoa, Solomon lslands, Tonga, and Vanuatu.

Hosts

Banana and plantain varieties.

Symptoms & Life Cycle

The spots are black, four-pointed stars, up to 60 mm long, most clearly seen on the lower surface of older leaves. The long axis of the star is parallel to the leaf veins, that is, at right angles to the length of the leaf (Photo 1). The spots are scattered, but sometimes occur in large groups (Photo 2).

A velvet-like mass of spores is produced on the lower surface of the spots. The spores are spread by rain and wind. This is the asexual

state of the fungus. Sexual spores are also formed in the spots, and they spread the fungus too.

Impact

Usually, the disease is of minor importance. On susceptible varieties, it is worse when they are planted under shade. In this case, the spots are dense, covering most of the leaf surface (Photo 2). Further damage to the leaf occurs when the spots become infected by diamond leaf spot, caused by another fungus, *Cordana musae* (Photo 3). (**See Fact Sheet no. 72** for symptoms of *Cordana*.)

Detection & inspection

Look for the characteristic black, four-pointed stars, on the lower surface of older leaves, with their longer axis parallel to the leaf veins. Use a microscope to see the spores on the underside of the spots. Look to see if the stars are associated with large diamond spots of *Cordana*.

Management

CULTURAL CONTROL

Control measures are unlikely to be needed against this disease. If they are, priority should be given to reducing shade levels or planting the bananas in open ground.

RESISTANT VARIETIES

Cavendish varieties are resistant. The fungus usually attacks cooking and ladyfinger bananas. Some of the FHIA varieties bred in Honduras, Central America, and held by the Secretariat of the Pacific Community, are susceptible. In the lowlands of Papua New Guinea, varieties FHIA 02, FHAI 17, FHIA 18 and FHIA 23 were susceptible, with FHIA 02 moderately susceptible (class 3 on a scale of 1-5), and other FHIA varieties less so.

CHEMICAL CONTROL

The disease is of minor importance in commercial varieties and, even in those that are susceptible, it is unlikely to need control by fungicides; cultural controls and resistant varieties should be sufficient.

AUTHORS Helen Tsatsia & Grahame Jackson
Photo 1 Brian Thistleton, DPIF, Northern Territory Government, Australia.

Produced with support from the Australian Centre for International Agricultural Research under project PC/2010/090: *Strengthening integrated crop management research in the Pacific Islands in support of sustainable intensification of high-value crop production,* implemented by the University of Queensland and the Secretariat of the Pacific Community.