

Copper against bacterial black spot in mango

Recognize the problem

Many small black water-soaked spots on mango fruits and leaves can be caused by bacteria. This is the so-called bacterial black spot disease. Spots appear on the leaves, stems and fruits. On the leaves the spots are black and water-soaked. They tend to be angular because they are restrained by the veins. Note, that larger flat and black patches on leaves are usually non-problematic leaf surface fungi and not bacteria. Bacteria-infected branches look black and cracked. The infected fruits develop black dirty spots mostly with star shaped cracks within them.

Background

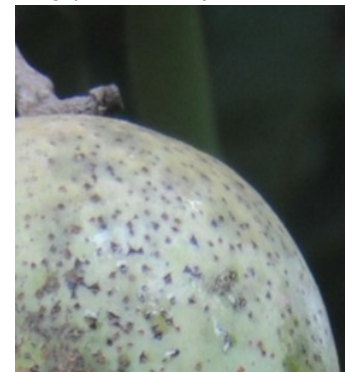
The bacteria hide in stem wounds, on seedlings and on the shoot which acts as a store tank from which the disease can move to leaves and fruits. The bacterium is not easily spread. Therefore, it is important to use clean healthy planting material. However, the bacteria might be spread by rain or pruning tools.

There are no curative chemicals available to control this disease. Copper-based products of different types can partly protect uninfected trees from infection. There are copper-oxochlorides, copper-hydroxides or copper-sulphates. Such chemicals are toxic to you (WHO toxicity class II, moderately hazardous), and are very toxic to aquatic organisms, so don't spray near water sources. When used too much in orchards, copper can accumulate in soil and water. It can burn leaves. Therefore, never spray more than 6 kg copper per hectare per season!

Management

- Prune off diseased twigs and destroy. But sterilize harvesting and pruning tools regularly during use. Otherwise, you spread the disease.
- Spray copper oxochloride –based products when the disease is first observed in your area, and has not yet infected your trees. Such products can partly prevent disease spread, but cannot cure it.
- Do not spray during fruit set.
- Do not enter the orchard until 1 day after spray. The pre-harvest interval is at least 7 days.
- Also consider preventively spraying copper products after harvest flush and after the end of the rainy season to reduce disease attack in the next season.

Black spots on unripe mango due to bacterial disease. (Photo by Kengap Horticulture)



Raised black spots on mango leaves due to bacterial spot disease. (Photo by J. Kranz)



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.

Scientific name(s) > *Xanthomonas axonopodis* pv. *mangiferaeindicae*

The recommendations in this factsheet are relevant to: Zambia



Authors: Ackim Nyirenda
District Office, Ministry of Agriculture and Livestock
tel: + 260 966 843 976 email: ackimnyirenda@gmail.com

Edited by Plantwise.