

Cocoa pink disease (012)

Common Name

Pink disease of cocoa

Scientific Name

Erythricum salmonicolor; also known by older names, *Phanerochaete salmonicolor*, and *Corticium salmonicolor*.

Distribution

It is recorded from all countries growing cocoa: Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga, and Vanuatu, but also present elsewhere on other trees, e.g., Cook Islands.

Hosts

Cocoa is a major host, but it occurs on *Agathis* (kauri), citrus, coffee, *Cordia*, *Hibiscus*, mango, and many other trees.

Symptoms & Life Cycle

The fungus causes dieback on woody trees and shrubs. Often the disease starts from near where a branch originates.

The first sign of the disease is white threads of the fungus over the bark; they look like cobwebs. White pustules appear through cracks and through natural openings in the bark. Later, the fungus forms a pink crust which produces spores (Photos 1&2). Later still, but only occasionally, the colour fades and orange-red pustules, which contain another type of spore, are seen.

Cankers often form; the fungus penetrates and kills the bark, cracks appear, the crust becomes grey and sunken, and gum may be present (Photo 3). The leaves die on the infected branches, but remain attached.

When it is too dry and unfavourable for growth, the fungus remains alive in the branch and trunk cankers.

Spores of the fungus are spread by wind and rain. They need water to germinate, and then they can infect through healthy bark.

Impact

The disease causes a branch dieback, and occasionally death of the tree when infections occur at the main fork or 'jorquette'. Often, within a plantation, patches of infected trees occur as the disease spreads. If management is poor, and weather conditions encourage the disease, losses can be high, but usually the disease is of minor importance. Trees between 2 and 6 years old are said to be most severely affected.

Detection & inspection

Look for the pink crust on branches and trunk. The fungus is often seen at the jorquette.

Regular surveys to detect infections are very important. Often, the first sign of the disease is the sudden death of a branch, with the brown leaves hanging down, but still attached.



Photo 1. Pink disease, *Phanerochaete salmonicolor*, at the jorquette of a young cocoa tree.



Photo 2. Pink disease of cocoa, *Phanerochaete salmonicolor*, has killed the branches, but the leaves still remain attached. (Pink disease is present on the central branch where it shows as a lighter colour.)



Photo 3. Pink disease, *Phanerochaete salmonicolor*, on coffee; as the fungus kills the branch, the surface layers dry out and crack. Similar symptoms occur on cocoa.

Management

CULTURAL CONTROL

The health of the trees is important in preventing outbreaks of this disease. If trees are stressed, because they are too close or growing in soils with poor nutrition, then they may be more susceptible to infection.

Before planting:

- Choose fertile soils for planting.
- Do not plant too closely; plant trees at least 3 m apart.

During growth:

- Prune out the infected branches as soon as the fungus is seen. If the fungus has infected the jorquette, consider a chemical treatment, otherwise the tree will have to be cut down and allowed to regrow from the stump. It is important to prune during dry weather. Always prune at least 30 cm below any sign of the fungus.
- Check soil nutrient levels, and maintain adequate levels of fertility.
- Make sure that shade is properly controlled. Shade is an important factor in the occurrence of pink disease. If the shade is heavy it creates conditions of high humidity, which is ideal for infection and spore production.

After pruning:

- Do not leave the pruned branches with pink disease in the plantation, otherwise spores will continue to develop and infect the remaining trees.

CHEMICAL CONTROL

Copper fungicides are useful if applied as a paste. Prune the branches and apply the paste to the cut ends and along the remaining parts. Apply to infections at the jorquette.

*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 pesticides to use should always be sought from local agricultural authorities.***

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Information from CABI (2019) *Erythricium salmonicolor* (pink disease). Crop Protection Compendium. (<https://www.cabi.org/cpc/datasheet/15454>). Photo 3 Kohler F, et al. (1997) *Diseases of cultivated crops in Pacific Island countries*. South Pacific Commission. Pirie Printers Pty Limited, Canberra, Australia.

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