

Pacific Pests, Pathogens & Weeds - Fact Sheets

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Sugarcane pineapple disease (218)



Photo 1. Infection of sugarcane sett with black rot, Ceratocystis paradoxa, red at first and later turning black.

Common Name

Black rot, pineapple disease

Scientific Name

Ceratocystis paradoxa

Distribution

Worldwide. Wherever sugarcane is grown. Asia, Africa, North, South and Central America, Europe, Oceania. Black rot, or pineapple disease, is recorded on sugarcane from Australia, Fiji and Papua New Guinea.

Hosts

Sugarcane (black rot or pineapple disease), cocoa (pod rot), coconut (stem bleeding), banana and plantain (black end or fruit rot), maize, mango, pineapple (see Fact Sheet no. 190) (black rot or water blister), potato, sweetpotato (see Fact Sheet no. 232) and taro.

Symptoms & Life Cycle

The fungus enters the setts through the cut ends. The internal tissues turn red, and then brownish-black with a characteristic pineapple smell (Photo 1). Cavities develop, and here the fungus produces spores; roots fail to form, buds fail to grow, and those that do, die back or remain stunted.

Spread of the fungus is by spores in the wind, or run-off rainwater (or irrigation water). Insects, especially beetles, are said to spread the spores as they bore into the setts. Survival is in the soil for at least a year, and for several months in infected plant remains. High temperatures (28°C) favour sporulation and growth of the fungus.

Impact

A wound fungus, causing a number of diseases on crops of economic importance in the tropics - banana, cocoa, coconuts, pineapple, and sugarcane. On sugarcane, it is a disease of the planting material, the setts, although there are reports of damage to the standing crop

When conditions are unfavourable for growth of sugarcane setts after planting, such as water stagnation, rots occur and result in gaps in the stand, and the need for repeated replanting. Also, the sugar content from infected canes is lower than healthy ones, and it does not crystalize properly.

There are reports that borer injury to the standing crop, or drought, increase black rot infection and damage, with cane turning yellow, drying and dying, but this is unusual. More often, infection of standing cane occurs after attack by red rot, *Glomerella tucumanensis* (see Fact Sheet no. 221).

Detection & inspection

Look for setts that have not sprouted in the field and split them to see the internal colour. Note that the pineapple smell is only present in

early rots and is not useful for detection.

Management

CULTURAL CONTROL

Cultural control is most important.

Before planting:

- Use healthy planting setts; they should be of the right age, with at least three nodes
- Make sure that the fields have good drainage; places where water remains after rain can increase susceptibility to the disease. Drought, too, can increase sett susceptibility, so aim to plant at the accepted time.
- Select varieties that sprout rapidly after planting.
- Treat setts in hot water at 51°C for 30 minutes, if planting is delayed.

After planting:

• Collect and burn or bury as much of the crop as possible after harvest.

CHEMICAL CONTROL

It is unlikely that fungicides would be an economic option against this disease; however, if they were needed, use carbendazim.

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Information from CABI (2014) Ceratocystis paradoxa (black rot of pineapples) Crop Protection Compendium. (http://www.cabi.org.cpc/). Photo 1 Bareau of Sugarcane Experiment Station, Queensland, Australia. In Kohler F, Pellegrin F, Jackson G, McKenzie E (1997) Diseases of cultivated crops in Pacific Island countries. South Pacific Commission. Pirie Printers Pty Limited, Canberra, Australia.

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