

Extension Fact Sheet 4: Butt & Root Rots



Common name: Butt and root rots

Scientific name: *Ganoderma* (phot, left & right) and *Trametes* (photo, centre)

Hosts: Oranges and other types of citrus are attacked. These fungi have a wide host range and infect many forest and plantation trees. *Ganoderma* is a major problem in oil palm.

Damage

Damage to the roots and trunks of oranges and other citrus by butt/root rot fungi prevents the movement of food and water. Leaves turn yellow and fall, fruit production ceases, and there is a slow dieback of the branches. Inside the trunk a white rot occurs. Later, either when the tree is still alive or when it is dead, the brackets appear at the base of the trunk (the butt).

It is not known how many months or years pass between infection of an orange and development of the bracket. The first sign of damage is usually dieback of a branch. Slowly other branches die, until the whole tree is dead; this can take several years.

Biology and Life Cycle

Ganoderma and *Trametes* are often called bracket or shelf fungi, because of the shape of the structure that grows out from the tree. This is the only part of the fungus that can easily be

seen: the rest is in the soil or inside the tree causing white rots. The bracket or shelf is the part of the fungus where the spores or seeds are produced; the spores are very small, too small to be seen by the eye.

The fungi are spread by spores produced by the brackets. Many millions of spores are produced and these travel long distances in the wind. There are two ways that infection occurs: either the spores fall to the soil, germinate and grow or they enter through wounds in the tree. Wounds are the more likely. Fungal threads develop and these grow through the trunk.

Spread of the fungi in the soil is probably through root-to-root contact.

Once inside the tree, the fungi follow the central areas where water and food flow between the roots and the leaves. Brackets develop only when rots are extensive. They may last only a few months (*Trametes*) or a long time (*Ganoderma*).

Signs and Symptoms

If branches start to dieback, then it is possible that the roots have been infected with *Ganoderma* or *Trametes*. There is no way to be sure until the brackets form. However, it is worthwhile checking the base of any old dead or dying trees nearby in case these have brackets growing from them.

Management

Cultural control:

A) Dig out infected trees

There is no effective treatment for *Ganoderma* or *Trametes* once the bracket appears. It's a sign that the fungi have been feeding on the tree for some time, and large rots are already present. The tree should be removed. Dig it out along with all the main roots.

B) Do not damage the tree

Spores of the fungus can enter the butt through wounds. Do not damage the bark. Stop people cutting the bark with bush knives!

Chemical control:

Chemical control is not an option for these diseases.

