Pacific Pests, Pathogens & Weeds - Fact Sheets

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Acacia rust (235)

Photo 1. Light-brown galls on the phyllodes (modified leaf stalks) and stems of *Acacia*, caused by the gall rust, *Uromycladium tepperianum.*

Photo 2. Large gall of the Acacia gall rust, *Uromycladium tepperianum.*

Common Name

Acacia rust

Scientific Name

Uromycladium tepperianum. There are eight species in this genus.

Distribution

Narrow. Recorded from Australia, Indonesia, New Caledonia, New Zealand, Papua New Guinea, and South Africa. It is not recorded in Fiji, Samoa, Solomon Islands, and Tonga.

Hosts

Species of *Acacia*, and other genera in the Fabaceae.

Symptoms & Life Cycle

Uromycladium tepperianum is a rust fungus that infects more than 100 species of *Acacia* and several other genera in the plant family Fabaceae. The rust produces chemicals that cause trees to produce large conspicuous galls (Photos 1&2). The shape and size of the galls, as well as the part attacked varies depending on the host species. The galls are hard, irregular, up to 150 mm across, and weigh up to 1.5 kg. On some species, the chemicals also cause masses of shoots, termed witches' brooms, to grow from the stems.

The galls are formed on the 'leaves' (they are leaf-like petioles), and the seedpods. They are light brown when young and spore producing, becoming dull-brown with age.

Rusts often have several spore stages, and sometimes two hosts. This rust is different. It has only two types of spores: pycniospores and teliospores, and they are formed on the same host. The pycniospores are a form of mating spore, and are produced in structures called pycnia. Mating occurs when spores of one pycnia fuse with the fungal threads (called hyphae) of another.

The teliospores form a brown layer over the galls, especially during the rainy season. They are the spores that spread the fungus. Their thick walls allow them to withstand the drying sun and wind as they disperse in the air.

Impact

In severe attacks, the trees may be full of galls, and weakened by the reduced leaf canopy. Seed production may be affected. The fungus does not kill its tree host directly, but causes it to become more susceptible to drought stress.

Acacia pycnantha, cultivated in Australia for its bark, is severely affected by *Uromycladium tepperianum*, which causes significant yield losses and eventually death. However, this rust has potential as a biocontrol agent for acacias that have become weeds outside of Australia. For example, *Uromycladium tepperianum* is highly effective against *Acacia saligna* in South Africa, and it is also being

considered against *Paraserianthes lophantha* subsp. *lophantha* (Cape Wattle) which is another weedy species in that country.

Detection & inspection

Look for the characteristic hard brown galls, up to 150 mm across.

Management

There is no treatment for this disease.

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Photos 1&2 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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