

THE ACACIA GALL RUST

(*Uromycladium tepperianum*)

A fungal pathogen of

PORT JACKSON (*Acacia saligna*)

in South Africa

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DOSSIERS ON BIOLOGICAL CONTROL AGENTS AVAILABLE TO AID ALIEN PLANT CONTROL

DESCRIPTION

U. tepperianum (Sacc.) McAlp. is a microcyclic rust producing only a single spore type. The vegetative mycelium of this gall-forming rust gives rise to pycnia (flask-shaped fruit-bodies), in which teliospores (winter or resting spores) are produced, three in a head. This Australian fungus can occur on a range of wattle species but this specific genotype will only damage Port Jackson.

LIFE CYCLE

Spores are spread by wind, and will infect the tree by entering natural openings. Hormones released by the fungus cause the tree to rapidly produce galls, and by April or May they are about 3-4cm long and 1-2cm in diameter. Pycnia are produced when galls emerge through cracks on infected stems, caused by swelling gall tissue and produce spores at the end of March. Spores are produced throughout winter until, in August, the galls begin to die and spore production ceases. Galls produced on thick branches may survive over-summer, and will produce warty outgrowths bearing pycnia in the following year.

DISEASE SYMPTOMS

Infected Port Jackson trees are covered in conspicuous, red-brown galls occurring on young branches, inflorescences and leaves. In some instances "witches' brooms" and juvenile foliage are produced. New infections are usually visible in February or March. A severe infection by *U. tepperianum* will kill the host.

IMPACT ON PORT JACKSON

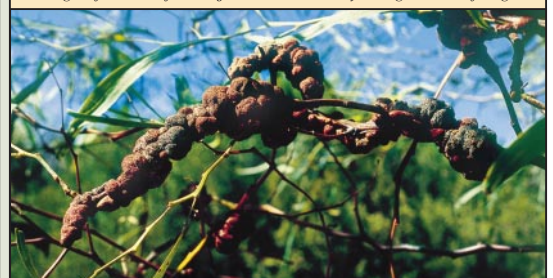
Rust fungi do not kill the cells of their host as the fungus actually stimulates plant growth. Rather, it predisposes the tree to succumb to other stress factors that kill the plants within a few years. For example, severely affected plants appear to be more susceptible to drought stress. Heavily infected plants bearing several hundred galls and "witches' brooms" produce fewer phyllodes (leaf-like stems), flowers and pods. Branches, weakened by galls, often break. After the decline of Port Jackson, native plant regeneration varies from site to site. Fynbos generally recovers rapidly in recently invaded areas but more slowly in areas affected by older infestations of Port Jackson.



Section through gall showing young teliospores



Young infection of Port Jackson leaves by the gall rust fungus



Red-brown galls of the Acacia gall rust



Port Jackson trees killed by the gall rust fungus



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ADDITIONAL INFORMATION IS AVAILABLE. PHONE: Weedbuster Toll-free Helpline: 0800 005 376
WEBSITE: PPRI website is located via links from the Agricultural Research Council website: www.arc.agric.za

