



Figs 1-2. *P. lophantha* subsp. *lophantha* (Cape Wattle, Crested Wattle, Albizia). Infestation in cape region South Africa (1). Flowers and fruit (2).

Figs 3-4. (b). *U. tepperianum* galls on stem (3) and inflorescence (4) of *P. lophantha* subsp. *lophantha* in WA. Photo credits: 1-2 Lesley Henderson, (SA plant invader atlas project; <http://www.agis.agric.za/wip/>) ; 3-4 Alan Wood, ARC-PPRI South Africa.

Disease: Galls and witches' brooms of wattles

Classification: K: Fungi, D: Basidiomycota, C: Urediniomycetes, O: Uredinales, F: Pileolariaceae.

Uromycladium tepperianum is the most widespread of the eight species within this genus of rust fungi. It is recorded on numerous species of wattles in Australia, being highly destructive on at least a number of species. This rust fungus is a successful biological control agent of *Acacia saligna* in South Africa, where it was introduced after it was demonstrated that the species consists of host species specific races.

The pathogen:

U. tepperianum induces galls on phyllodes, stems, flowers and seed pods. On some host species it may also induce the development of witches' brooms. The shape and size of the galls, as well as the plant part most frequently attacked, depend on the host plant species, and individual galls may be as much as 1.5 kg in mass. This rust species is microcyclic producing only pycnia and telia. The teliospores are produced in mass, forming a brown powdery layer covering the galls during the rain season. The teliospores are the dispersive stage, and on germination, directly penetrate the host epidermis. No basidiospores are produced.

Host Range:

U. tepperianum is recorded from approximately 120 species of Australian *Acacia*, and *Paraserianthes lophantha* subsp. *lophantha*. In addition, it has been recorded on *P. lophantha* subsp. *montana* in Indonesia (Java) and *P. falcataria* in Indonesia (East Timor) and the Philippines.

Impact:

Growth and seed production is greatly reduced on plant species heavily parasitized, and these species suffer high mortality rates. However, not all recorded host species are heavily parasitized.

Distribution on *Paraserianthes lophantha*:

P. lophantha subsp. *lophantha* (Cape Wattle, Crested Wattle, Albizia) is an emerging environmental weed in South Africa. Biological control of this plant using *U. tepperianum* is currently being considered, based on the safe and effective use of this pathogen against *A. saligna* in South Africa. However, during recent surveys for potential biocontrol agents in WA, this rust fungus was only found at a single locality (southern end of Boranup Drive, near Karridale).

Further localities are being sought. It would be greatly appreciated if anybody who knows of, or who finds, infestations of *U. tepperianum* on *P. lophantha* would contact Alan Wood (see contact details below) with the locality details.

Further Reading: McAlpine (1906) The rusts of Australia Dept. Agric. Vic.; Melbourne.

Morris (1987) Plant Pathology 36, 100-106.

Wood, Morris (2007) Biological Control 41, 68-77.

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