Uredo rangelii **System:** Terrestrial

Kingdom	Phylum	Class	Order	Family
Fungi	Basidiomycota	Pucciniomycetes	Uredinales	Pucciniaceae

Common name Myrtle rust (English)

Synonym

Similar species

Summary *Uredo rangelii* the cause of myrtle rust, is morphologically distinct from *Puccinea psidii* the cause of guava rust, although DNA sequence data place it within the *P. psidii* species complex. It is known from Jamaica and Argentina and was recently discovered in Australia where it has been detected at four locations. While it has not been discovered in native forest and containment operations are underway, there is potential for spread in eastern Australia.

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Species Description
Uredo rangelii (myrtle rust) can be regarded as a member of the *Puccinea psidii* sensu lato (s.l., in the broad sense) complex. *U. rangelii* was only recently separated from *P. psidii* s.l. in a study of *P. psidii* collections (Simpson *et al*., 2006). Two collections on *Myrtus communis* from Argentina and *Syzgium jambos* from Jamaica had morphologically distinct urediniospores, which were newly described as *U. rangelii*. The urediniospores of *P. psidii* are completely echinulate and ellipsoidal to obovoid, compared to those of *U. rangelii* which are obovoid to pyriform with a smooth patch (tonsure) free of echinulations; an important taxonomic feature warranting the designation of a new species. Additionally the wall of the spore is slightly thicker and the size slightly larger in *U. rangelii* (Simpson *et al*., 2006). The teliospores are indistinguishable from *P. psidii* (Carnegie pers. comm., in New South Wales, Environment, Climate Change and Water, 2011). No telemorph stage is known for *U. rangelii*.\r\n
The DNA sequence of the rDNA ITS, tef-1a and ß-tubulin regions of *U. rangelii* are indistinguishable from those of *P. psidii*, and this species gives a positive result in the nested PCR developed to detect *P. psidii* (Langrell *et al*., 2008 in Carnegie *et al*., 2010; New South Wales, Environment, Climate Change and Water, 2011).

Notes
As *U. rangelii* was only recently separated from *P. psidii* s.l. (Simpson *et al*., 2006), it is likely that literature pertaining to guava rust, including host range and impact, includes reference to disease caused by *U. rangelii* (Carnegie *et al*., 2010).

Habitat Description
The known hosts of *Uredo rangelii* are in the tribes Myrteae and Syzgieae (Simpson). Known susceptible taxa include *Myrtus communis*, *Syzgium jambos*, *Agonis*, *Callistemon* and *Syncarpia*. Given the wide phylogenetic separation of these taxa, other new host records can be expected (Simpson *et al*., 2006; Carnegie *et al*., 2010).

General Impacts
Uredo rangelii is pathogenic to plants belonging to the Myrtaceae family; a family to which many Australian native species like the Callistemons and Eucalyptus belong, the range of plants infected include *Agonis flexuosa* (willow myrtle), *Callistemon viminalis* (bottlebrush) and *Syncarpia glomulifera* (turpentine). Initial symptoms of *U. rangelii* may appear as small (1-5mm) purple flecks on young leaves, often with a faint chlorotic halo. These later develop into masses of characteristic bright yellow to orange powdery spores which may occur on both leaf surfaces. In severe infection these pustules may enlarge and coalesce. Pustules may turn grey with age (Carnegie *et al*., 2010). The rust affects young shoots and the growing tip of plants. The leaves become curled and distorted and new growth is killed.

Management Info
Based on the current distribution and spread of the disease, the Myrtle Rust National Management Group (NMG) in December 2010 concluded that it was not technically feasible to eradicate the rust in Australia. A series of response plans which focus on community education and reducing the impact of myrtle rust on the natural environment and commercial plantations has been developed. Quarantine restrictions have been put in place to prevent the sale of plants that have been infected with myrtle rust and the movement of infected plants interstate.
Containment operations were carried out at the initial infection site and the three other infected sites. Measures included weekly fungicide applications and diseased material was removed and destroyed (Carnegie *et al*., 2010).

Principal source:

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[1] AUSTRALIA

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General information

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