

Myrtle Rust in Australia[©]

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In April 2010 myrtle rust initially described as *Uredo rangelii*, a member of the eucalyptus/guava rust complex called *Puccinia psidii*, was detected on a myrtaceous host *Agonis flexuosa* 'After Dark' by a cut flower grower on the central NSW coast. For many years *P. psidii* has been a high priority quarantine fungus. Myrtle rust spread rapidly and was detected in south east Queensland in late December 2010 and in Victoria in late December 2011. The incursion into Victoria was human assisted. Myrtle rust has only been detected in nurseries, private gardens and amenity plantings in Victoria but is widely distributed in native forests along the east coast from Batemans Bay in southern NSW to the Daintree in far north Queensland. The host range has expanded rapidly to over 240 species from 34 genera of *Myrtaceae*. Several species are highly susceptible with severe consequences for native fauna.

The fungus was first described on guava in Brazil in 1884 where it rarely caused damage, but by 1912 was seen on *Eucalyptus citriodora*. Epidemics have occurred on *Eucalyptus* planted in Brazil, on allspice in Jamaica (1934), on *Melaleuca quinquenervia* in Florida (1997) and on *Metrosideros polymorpha* in Hawaii (2005). It was reported from Japan in 2009 and China in 2011.

Symptoms vary between hosts and may consist of round lesions up to 1 cm in diameter, purple to brown in colour, which show on both leaf surfaces. The fungus produces bright yellow asexual spores and dark red-brown sexual spores often found together in pustules. Lesions turn dark brown to grey with age. The disease affects only young shoots, flowers, fruits and leaves; causing curling, buckling and distortion of tissues. Heavy infection causes shoot defoliation, repeated infection reduce vigour and can kill plants.

Spores are dispersed by wind, rain-splash, animals and humans. Infection requires conditions of high relative humidity greater than 70%, or a 6-8-h period of leaf wetness, during low light or darkness. The optimum temperature for infection is 15-25°C, but the range may be wider. Lesions appear after 5-7 days and spores are produced up to 14 days or more after infection. Spores probably survive for a week under field conditions. Studies conducted in Brazil on *Eucalyptus* showed infection was favoured by a microclimate found from ground level up to a height of 4 m.

Control of myrtle rust will depend on hygiene, fungicides and plant resistance and breeding. Glasshouse studies in Australia have identified susceptible, tolerant and only a few resistant native plants. Currently (27 Feb. 2014) only two fungicides are registered and a number are currently available for use under permit for disease control.

It is illegal to sell infected plant material into Victoria, New South Wales and Queensland and to on-sell that material. Movement of *Myrtaceae* material into Western Australia and Tasmania is prohibited; movement into South Australia and the Northern Territory requires certification.

