



THESE RECOMMENDATIONS ARE FOR GROWERS OF MYRTACEAE NURSERY STOCK AND NOT FOR HOME GARDENERS, OPEN AREAS OR CROPS.



nzppi
NEW ZEALAND PLANT PRODUCERS INCORPORATED

Myrtle Rust (*Austropuccinia psidii*)

Plant Production Management Protocol

Symptoms on pōhutukawa. Credit: Department of Conservation, Te Papa Atawhai.

Plant producers play a crucial role in helping to manage myrtle rust incursions through early detection and reducing the risk of spread. There are practical steps you can take to ensure you are following best practice to avoid or manage myrtle rust in your operations.

The following strategies should be applied across nurseries propagating and distributing susceptible Myrtaceae species. This advice is for nurseries only and not for home gardeners or open areas or crops.

Staff awareness

Share this document, the Myrtle Rust website, myrtlerust.org.nz and resources on the NZPPI website with all staff to raise awareness of the disease. Talk about what to look for and to do if they find anything suspicious.

Treat Growing Area

Ensure the ground area is clear of myrtle residues before planting, especially propagating beds under misting. Clean and remove any myrtle plant debris from standing areas. It is good practice to remove *Syzygium australe* (lilly-pilly) hedges and replace with non-susceptible species.

Crop aggregation

Aggregate myrtaceae plant species within defined areas of the nursery to make it easier to inspect and treat plants, ensuring adequate gaps between plants to reduce spread of disease. Keep nursery plants away from **any** myrtaceae plant species in **neighbouring properties**.

Arrival inspection

Inspect plant stock upon arrival and before transferring them into the nursery area.

- i. Inspect the tops and bottoms of leaves/stems/ buds/fruit looking for any direct evidence of the disease (refer to myrtlerust.org for symptoms on different plant species).
- ii. Inspect the entire above-ground area of the plants.
- iii. With larger plants, select leaves from all parts of the plant (upper, middle, lower) and examine them individually.

Plant Survey Protocol

During the high-risk period, routinely inspect Myrtaceae species on-site, and along property boundaries, roads etc. Pay attention to plants located upwind based on the most common prevailing wind direction of the season. Follow the **Myrtle Rust Survey Protocol** for more detail.

Differences in host vulnerability to myrtle rust attack

Myrtle rust only infects plants in the myrtle family (Myrtaceae). The **NZPPI Myrtle Rust Climate Model** risk predictions apply to the most vulnerable myrtle hosts.

Vulnerability depends on:

- **Genetic susceptibility.** Varies between species and sometimes within species.
- **Active shoot flush.** Only emerging/expanding leaves, stems, flowers and fruit can be infected. Myrtle rust is often seen on older leaves and stems, but these will have been infected while they were young.

Susceptible Myrtaceae species are:

- **Taonga species:** *Lophomyrtus bullata*, *Metrosideros excelsa* (pohutukawa), *Metrosideros robusta* (rata), *Syzygium maire* (swamp maire)
- **Exotic species:** *Syzygium australe* (lilly pilly). Note that feijoa is excluded.

Vulnerability of New Zealand myrtles to myrtle rust

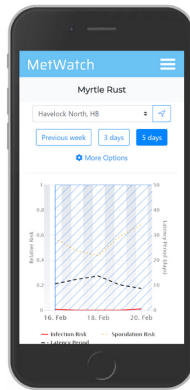
Plant name (Botanical name)	Severe infection commonly seen	May be severe on young plants or basal growth of older trees	When growing near more susceptible species	Infection seldom seen in the natural environment	Infection not confirmed in the natural environment
Native species					
Maire tawake/swamp maire (<i>Syzygium maire</i>)	●				
Ramarama (<i>Lophomyrtus bullata</i>)	●				
Röhutu (<i>Lophomyrtus obcordata</i>)	●				
Pōhutukawa (<i>Metrosideros excelsa</i>)		●			
Carmine rātā (<i>Metrosideros carminea</i>)		●			
Colenso's rātā (<i>Metrosideros colensoi</i>)		●			
Bartlett's rātā (<i>Metrosideros bartlettii</i>)		●			
Other climbing rātā (<i>Metrosideros</i> spp.)					●
Mānuka (<i>Leptospermum scoparium</i>)	(Young seedlings may become infected)			●	
Northern rātā (<i>Metrosideros robusta</i>)				●	
Southern rātā (<i>Metrosideros umbellata</i>)				●	
Kānuka (<i>Kunzea robusta</i>)					●
Exotic species					
Lilly pilly, Eugenia (<i>Syzygium australe</i>)	●				
Guava (<i>Psidium guajava</i>)	●				
Feijoa (<i>Acca sellowiana</i>)				●	
Brush cherry (<i>Syzygium paniculatum</i>)					●
Monkey apple (<i>Syzygium smithii</i>)					●



Symptoms on *Syzygium australe* leaves and stem. Credit: Department of Conservation, Te Papa Atawhai.

IDENTIFY THE HIGH-RISK PERIODS

Use the **NZPPI Myrtle Rust Climate Model** (accessed through the **NZPPI Plant Disease Management Platform**) to identify the high-risk periods for myrtle rust infection. During high-risk periods for infection, you can reduce the risk of infection through non-chemical controls and chemical control (preventative fungicides) in the nursery.



PREVENTATIVE FUNGICIDE PROGRAMME

Refer to the Prevention with Fungicides Protocol for detailed advice on how to carry out an effective fungicide programme.

The high-risk period is October to May where it may be necessary to apply myrtle rust fungicide treatments to protect new growth of susceptible species. From June to September there is a lower risk of myrtle rust spores in the environment and you may not need to spray.

Use the **NZPPI Myrtle Rust Climate Model** through these months to check the accumulated risk index for your local area.

Ensure chemical control is undertaken only by staff who have completed training in the use of agrichemicals through the Growsafe certification. Refer to growsafe.co.nz for resources on fungicide good practice.



Symptoms on pōhutukawa. Credit: Department of Conservation, Te Papa Atawhai

NON-CHEMICAL CONTROL

Myrtle rust spores need six hours of leaf wetness to germinate. Place susceptible myrtle rust species in windier areas of the nursery and irrigate in the morning to give foliage a chance to dry out. Replace overhead irrigation with drip irrigation where possible.

Trimming and pruning operations should be done in winter where possible, so that new growth flushes do not coincide with high-risk periods for infection.

Symptoms on *Syzygium*.
Credit: Department of Conservation, Te Papa Atawhai.



NURSERY DISPATCH INSPECTIONS

Inspect and ensure all Myrtaceae species are free from infection prior to dispatch. For fungicide treatment management, ensure all susceptible myrtaceae species are covered by a current fungicide treatment program prior to dispatch.

REMOVE WASTE MATERIAL

Dispose of all extraneous vegetative plant material from nursery via bulk waste, composting or deep burial. Refer to the Myrtle Rust Survey Protocol for more information.

CLOTHING HYGIENE

If staff come into contact with myrtle rust spores, ensure that clothing is thoroughly washed in hot water to kill any rust spores.

REPORTING MYRTLE RUST

If the symptoms are **unusual** and the plant is in a known myrtle rust area, then watch and wait. If there are other symptoms on an unusual species, or in a non-myrtle rust area, then report it to the lab, consider taking a sample and report in on the MPI Pest App and [iNaturalist.nz](https://www.inaturalist.org).

IF YOU FIND ANYTHING UNUSUAL



If there is doubt as to whether symptoms are myrtle rust, in a myrtle rust prone area, then monitor frequently to see if characteristic symptoms develop.



If you see myrtle rust symptoms on an unusual myrtle species, or it is in a non-myrtle rust area (see myrtlerust.org.nz) then report it to MPI and consider taking a sample.



Take clear, well focused photos of the suspected myrtle rust and the whole plants and report the find on [iNaturalist.nz](https://www.inaturalist.org).



Don't leave infected myrtaceae plants on the site. Remove infected plant material and bag for disposal.

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