

Managing native plants susceptible to myrtle rust

Guide for large-scale planting and restoration programmes

July 2018

Myrtle rust is now widely spread across New Zealand and poses a threat to many iconic native myrtle species.

This guide provides information to consider when planning, planting, and maintaining myrtle plants as part of municipal gardens, large-scale landscaping and habitat restoration planting, riparian planting, and shelter belts.

Areas and species most at risk from myrtle rust

Most of the North Island is at high risk: almost all northern and central areas as far south as Taranaki and Hawke's Bay (excluding the central plateau), and western parts of Manawatu and Wellington regions.

In the South Island, north-western areas of Nelson and West Coast regions are at high risk of myrtle rust infections.

These areas typically have the climate and environments most suited to the growth and spread of myrtle rust fungal spores. Other regions are at lower risk, but could also become infected if myrtle rust continues to spread, or during spring and summer seasons that are especially warm, wet, and windy.

To date, the most susceptible native myrtle species in New Zealand is ramarama, also known as bubble leaf. This species is used widely in large-scale plantings as well as in residential and commercial hedging, where the dense young growth that results from repeated pruning may help to create an ideal environment for the fungus to rapidly grow and spread.

Relatively high levels of infection have also been found in *Metrosideros* species (pōhutukawa and rātā). The northern rātā and southern rātā are sometimes used as part of habitat restoration programmes.

Mānuka and kānuka are commonly used in large-scale plantings, but, to date, have shown very low levels of myrtle rust infection.

General advice about planting native myrtle species in areas where myrtle rust is present

It is generally considered that prohibiting or avoiding the planting of all native myrtle species to try and avoid myrtle rust infection is not the best approach.

Myrtle plants are an important part of New Zealand ecosystem's and our cultural identity. Some species may have high levels of natural resistance or tolerance to myrtle rust. And while there are currently few effective tools or management options available, a significant research programme is under way, to investigate and develop potential solutions and new approaches to help control or lessen the impacts of myrtle rust in the future.

However, it is accepted that there may be some sites where it makes sense to adjust planting decisions, at least in the short term. For example, it may be prudent to avoid planting large numbers of ramarama in Taranaki – the most affected species and the most affected region.

Another thing to bear in mind is that new growth is more susceptible to myrtle rust infection, so young plants are more likely to be severely impacted than mature plants. Young seedlings may be particularly vulnerable in spring and summer when the conditions are most suitable for spore release and plantings dominated by susceptible myrtle species could result in a heavy infestation.

We hope to learn more about the potential impact of myrtle rust in New Zealand by monitoring natural ecosystems and from research under way on the tolerance and resistance of myrtle species. As our knowledge increases, we will share information with New Zealand communities and update our advice contained in this guide.

SELECTING MYRTLE PLANTS

Exotic myrtles should be planted only where they are known to be resilient, and especially as infections have become widespread.

Important restoration species, such as mānuka and kānuka, have so far not been badly affected by myrtle rust. The benefits of their continued planting is likely to outweigh any potential risk.

SOURCING MYRTLE PLANTS

For large scale planting programmes, it's best to use plants/seedlings raised from seed collected from a range of parents to help maintain local genetic diversity.

It is strongly recommended that you source all myrtle plants/seedlings from nurseries that follow the hygiene protocols of the New Zealand Plant Producers Incorporated (NZPPI). This is particularly important for sites in regions where there is no known myrtle rust infection.

Nursery plants can be kept free from symptoms of myrtle rust by using regular fungicide treatments, however there is no evidence to suggest that fungicide treatment is curative. Maintaining fungicide treatment after planting may also be impractical.

PLANTING MYRTLE PLANTS

Additional effort at this stage of a planting project is unlikely to produce any significant benefit to protect native species from possible myrtle rust infection. Measures typically used to improve growing conditions in gardens and parks are usually impractical or not recommended for natural forest or large-scale planting programmes. For instance, naturally grown trees or stands of vegetation are unlikely to benefit from irrigation or applications of fertiliser or mulch.

Planting a mix of species, including myrtles, as part of a restoration programme will provide a diverse forest ecosystem with better long term resilience to the challenges presented by a range of pests and diseases.

MAINTAINING MYRTLE PLANTS

Keeping your plants in the best condition and health possible is likely to improve their resilience and ability to cope with pests and diseases including myrtle rust.

Activities including providing healthy soil, reducing soil compaction and injury to tree roots, and using mulch will all enhance the health of myrtle species.

Prune only in cool seasons

We recommend pruning myrtles only in late autumn and early winter, if possible, to avoid encouraging new growth during warm weather when myrtle rust spores are more likely to form.

When pruning, use good hygiene practice, sterilise and disinfect tools and equipment with pure alcohol or methylated spirits.

Use fertiliser sparingly

Use fertiliser only on garden or plantation trees. A light application (50g/m²) of general purpose fertiliser in spring could be useful for a sickly tree.

Fungicide is not recommended

There are currently no fungicides that specifically target myrtle rust, and no recommended protocols for landscape use of fungicide in New Zealand.

Fungicides need to be applied regularly to keep infection at bay, so they are likely to be too costly and impractical for large scale plantings, particularly those with very large trees. However, they may be an option that communities may wish to consider to try and protect taonga and significant trees identified to have high cultural or heritage value.

Many plant nurseries follow preventative spray regimes to reduce the likelihood of plants becoming infected by fungi. Information on the regimes used by nurseries registered with the New Zealand Plant Producers Incorporated (NZPPI) can be found on the website: [here](http://www.nzppi.co.nz/biosecurity/biosecurity.html)
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Monitor plants regularly

We recommend regular monitoring of myrtle plants for any sign of myrtle rust, particularly new, young growth, shoots and seedlings. During warmer weather, spores are typically released every two to three weeks. Look out for bright yellow powdery eruptions on either side of the leaves. The spores are microscopic, but heavily infested young growth may be covered in bright yellow pustules.

If you find a myrtle plant showing signs of infection, notify the biosecurity hotline (0800 80 99 66) and take care to avoid disturbing or spreading the spores – do not touch or move the plant or cuttings, and clean personal effects and equipment before leaving the site.

MANAGING A MYRTLE RUST INFECTION

We can provide advice to help you make decisions about the plants on your property if your plants are affected by myrtle rust.

Because myrtle rust continues to be an unwanted organism in New Zealand, owners of properties infected with myrtle rust have specific responsibilities under the Biosecurity Act. This includes not knowingly moving or spreading the myrtle rust spores, and securely disposing of any myrtle rust infected plant material.

If infected myrtles are simply left alone, the disease is likely to progress over time and they may show signs of dieback. Any large branches posing a safety risk should be removed, but any other pruning is discouraged until cooler weather to reduce the chance of infection on vulnerable new growth.

If you decide to remove an infected plant, especially if it is very large or heavily infected, we recommend engaging an arborist or contractor.

To minimise the risk of spreading myrtle rust, equipment or clothing that has come into contact with the fungus should be thoroughly decontaminated or washed before being moved to a different location.

Follow recommended hygiene procedures

Like many other pests and disease, myrtle rust spores can be transmitted by people and equipment.

Keeping garden tools, equipment, and machinery clean will help to limit the spread of fungus spores. To surface sterilise equipment, use a sterilant such as; 5% Sterigene solution, 70% ethanol or 70% methylated spirits.

Personal effects, including clothing and footwear, that may have been exposed to myrtle rust should also be decontaminated. The advice below should be provided to anyone before they work on an infected site.

- Surface dip or wipe with sterilant any gardening equipment, or other items with a hard surface.
- Separate and wipe sensitive equipment, such as power tools, battery packs and chargers, with a sterilant.
- Put clothing and other washable items through an extended hot wash in a washing machine or dishwasher. Don't forget any containers used to carry these items too – wipe them with a sterilant.
- Spray footwear with a sterilant and dry thoroughly.

Disposal of infected material

Please follow our advice on the secure disposal of infected plant material on your property.

It is safe to bury infected plant material on your property to a suggested minimum depth of 50 cm.

Sealing infected plant material in black plastic bags and solarising for at least six weeks is also an effective way to kill the spores.

Infected material should not be burned as the microscopic spores can survive and spread long distances in smoke.