MYRTLE RUST INFORMATION

HOW TO IDENTIFY MYRTLE RUST AND WHAT ACTIONS TO TAKE

1. About myrtle rust

Myrtle rust or *Austropuccina psidii* arrived in Australia in 2010. It then spread by wind to Raoul Island (NZ) in 2017 affecting the Kermadec pohutukawa. From there it travelled to mainland Aotearoa NZ. It was found in a Kerikeri plant nursery and soon after in Taranaki.

Myrtle rust is now widespread within Te Ika-a-Maui North Island and the upper area of Waipounamu South Island. If it is found on a new myrtaceae species or in a new region, report to **MPI Biosecurity Hotline (0800 80 99 66)**.

Species at risk that may be in a Trees for Survival plant growing unit (PGU) are manuka, kanuka and possibly pohutukawa in the regions.

Manuka is vulnerable at the seedling or young stage as actively growing shoots are more at risk.

Manuka with myrtle rust has been found in nurseries and on manuka seed capsules and seed in the wild.

Refer to:

www.myrtlerust.org.nz Biosecurity NZ and Dept of Conservation
'Guide to the removal and fungicide treatment of myrtle rust' Robert Beresford Plant and Food Research. www.tfsnz.org.nz - Schools

Myrtle rust is spread by wind, insects, birds, people and vehicles but wind is the main way spores are distributed in the environment.

Myrtle rust does not spread internally through the plant. It affects young, actively growing shoots and can affect flowers, buds and fruit. It is localised around the infection point. Activity is greatest in summer so rust management is most needed at this stage. Rust infection requires a wet period of 6 – 10 hours @ 15 deg C to 25 deg C.

It likes humid conditions. Infection is slower at lower temperatures and will not happen below 10 deg C. Dew, light rain and overhead irrigation provide suitable conditions. Rust spores are short lived. If they do not infect a plant, they die within a few days on non-host plants and in the soil.

The rust cannot be seen when in the latent stage and the latent stage can vary between 7 days in summer to 30 or more days in winter. It grows inside the plant. First symptoms appear towards the end of the latent period before the pustules erupt. The new pustules erupt and produce spores.

Why take preventative or control measures?

It is important to reduce the spread as much as possible.

Trees for Survival plants are mostly low risk but can still be infected and it is vital that infected plants are not sent to planting sites where myrtle rust may not be present. Plants, children and adults coming into contact with spores can transfer these to farms, orchards, lifestyle blocks and home gardens where myrtaceous species may be growing.

Regional or localized extinction is not only possible but is happening for high risk species such as ramarama and rohutu (Lophomyrtus spp.). Mature trees are dying as are seedlings, so no seed is being produced. Lophomyrtus is a valued food for our pekapeka -NZ bats.

Research is ongoing and it is too early to determine the economic and social effects.

Seed collection is in progress for all native myrtaceae species. A small fly larvae has been seen to eat the rust spores but it has a huge job to do.

Community surveillance is of great benefit to understanding myrtle rust.

In the classroom, a study of myrtle rust can be integrated into science classes.
Visit www.myrtlerust.org.nz – Resources for schools

2. Management of PGUs (plant growing units) to minimize risk

We must do our best to ensure we grow and supply good healthy plants to our landowners.

If you have infected plants or there is a high risk of infection due to proximity to infected species near the PGU, please consider the following procedures:

- Monitoring of plants when visiting a PGU (shadehouse)
- Clean pruning tools between PGU visits – methylated spirits or bleach
- Pruning or trimming when it is dry – in fine weather
- Pruning to reduce growth rate during high risk times
- Pruning in autumn is preferable but pruning in summer months can reduce new growth
- Do not run irrigation immediately after pruning plants – allow pruning cuts to seal, a few minutes is adequate
- Run irrigation in the early morning before humidity increases and the sun or wind can dry plants reducing the 'wet' period
- Increase air movement around plants in PGUs – mix up plants, don't clump crates together of one species
- Planting sites that may be high risk may require greater spacing i.e. 1.2m – 1.5m as increased airflow may be of benefit
- Control growth flushes through fertilizer timing

3. Identifying myrtle rust

What to look for:

- Bright yellow spores on the top and undersides of new leaves, shoot tips or young stems
- Red, purple, or brown lesions on stems
- Brown spore masses
- It can infect leaves, flower buds, flowers and fruit in some species
- If spores are found on non-myrtaceous species, they will not infect the plant and will die within a few days
- Look for the source – this is likely an infected plant close by
- If myrtle rust is suspected, download **iNaturalist** app and send a photo to confirm ID.
- iNaturalist records the information and this assists with understanding MR
- Refer to Plant and Food flyer – Rob Beresford, for photos
- Identify disease/fungus
- Do not touch affected plants
- Isolate – PGU
- Identify source
- Notify school/landowner/community groups

4. Actions to take if myrtle rust is found in TfS Plant Growing Units

- **Do not touch**
- Submit a photo to iNaturalist nz
- Place a tape around the PGU to stop people from touching the infected plants until plants are removed from the unit or close and secure the curtains
- Run the irrigation to wash spores off other plant species and reduce spread by wind or movement of plants. Do not use hair spray
- When removing plants avoid sending a cloud of spores into the environment and all over you
- If plants are badly infected, destroying them may be the only option
- If destroying plants is required, remove infected plants and place in a plastic bag

- Secure plastic bag
- Dispose of infected plants and bag at a refuse station in general rubbish
- Or bury plants under at least 50cm of soil
- Alternatively, plants could be moved to an isolated place on school grounds or landowner property for further treatment providing all precautions are taken to reduce spore clouds – plants must be sprayed asap – follow recommendations below
- If infestation is minimal, prune affected branches and follow disposal recommendations
- Wash hands and gloves in soapy water to remove any spores
- Locate the source – do not touch
- Advise the school, community group, landowner of source and suggest they research options for control
- Sprays are an effective control – see below 'Spray treatment' but are only an option.

If you are travelling to another school, be mindful that you will be transporting spores.
Take precautions to avoid spore transference by washing any tools used and removing gloves. If clothing is heavily saturated with spores, removal of top clothing may be advisable.

If the source of infection is located on school grounds or private property, it is not the TfS facilitators responsibility to dispose of the plant or spray with a fungicide. If infection occurs within a TfS plant growing unit, the facilitator is required to assess, report and take action as recommended.

5. Plant dispatch: TfS facilitators, teachers, landowners

Prior to planting day ask teachers to check for myrtle rust. The myrtle rust poster is now available and can be attached to the PGU with cable ties. Checking plants is a good learning opportunity for teachers and students.

Ask landowners to check for myrtle rust before loading into vehicles. Infected plants must not be transferred to a planting site.

Once plants have been collected and the TfS facilitator has arrived at the property, a check for any signs of rust is highly recommended. If infected plants are found, isolate and discuss management options with the landowner – spray or destroy.

6. Schools, landowners

Schools: If myrtle rust is found on plants in school grounds, they may be unsure of the correct process for control or removal. Provide information for advice, control or treatment.

Landowner: There is no requirement for landowners to remove an infected myrtle rust plant on their property. But they can remove them if they choose. If only a branch or two has myrtle rust, this can safely be removed without removing the tree. Follow all safety precautions to reduce the spread of spores and recommended disposal methods.

Provide information to school/landowner/community groups:
https://myrtlerust.org.nz
www.tfsnz.org.nz – Schools ;

7. Learning opportunities

For students and teachers looking to understand myrtle rust and its implications try the Scion app 'Ehekeaheka' – an interactive learning app.

Scion describes this as 'A new interactive learning app designed to empower rangitahi (young people) and communities with knowledge about mrytle rust'.

8. Fungicide treatment

The correct fungicide spray applied to myrtle rust can be very effective.

This is an option not a requirement. Read label before use.

Fungicide sprays are most effective when applied to new growth. Apply when the risk is high but before the disease appears or the rust rate is low. If infection has been removed, spray after removal. Repeat sprays may be needed.

Fungicides delay rust development so repeat sprays are needed. Target new shoots and avoid too much wind. The following sprays can be purchased at any garden centre:

- Yates Fungus Gun
- Yates Fungus Fighter
- Kiwicare Fungus Control

Use a mask and gloves if using the above and follow all recommended precautions on the label.

Copper oxychloride is not an effective control.

For shrubs and trees on school grounds, not in a PGU (shadehouse)

An arborist is recommended to deal with larger plants. If infection is extensive a more effective spray may be required.

A Growsafe Handler Certificate is recommended.

- Vandia 250EC Group 3 Fungicide
- Comet Group 11 Fungicide

Growsafe information – www.growsafe.co.nz

Plant and Food – 'Advice for myrtle rust removal & fungicides' - Rob Beresford5

9. Reporting

Add a note to plant counts regarding any concerns about myrtle rust in or close to a PGU. This helps TfS understand the disease and vulnerability of our myrtaceae species.

Report all cases of myrtle rust to:

iNaturalist – this enables tracking of infections, locations, species and a better understanding of the disease.

Auckland facilitators: Kate de Groot Auckland Council
The Regions: Gail Allende Propagation Coordinator TfS

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Information has been obtained with permission from Rob Beresford, Plant and Food Research and from the Myrtle Rust NZ website. Thanks to Peter Buchanan for suggestions.
Information is to the best of my knowledge accurate. It is a guide for Trees for Survival facilitators, teachers and landowners.

For more information refer: https://myrtlerust.org.nz