

International journal highlights resistance research

Grant Smith, Plant and Food Principal Scientist/Program Leader has had an article published in American Phytopathological Society (APS) journal (Jan 2020) based on his MPI-funded research, which set out to identify resistance to myrtle rust in selected New Zealand native myrtle species. Grant is now leading a Beyond Myrtle Rust research project, investigating natural plant and community resistance to myrtle rust.



APS is the premier international journal for publication of articles on fundamental research that advances understanding of the nature of plant diseases, the agents that cause them, their spread, the losses they cause, and measures that can be used to control them.

See a summary of the article below, or [read the full article](#) (APS Journal subscribers only).

Article summary:

This research set out to identify resistance to myrtle rust, **a plant disease caused by the fungus *Austropuccinia psidii*** in selected New Zealand native myrtle species.

Following agreements with local iwi and landowners on the purpose of the research as well as treatment and disposal of plant material, seed families from several different species of New Zealand provenance myrtles were collected and sent to a specialist laboratory in Queensland for testing.

The resulting seedlings were artificially inoculated with the pandemic strain of myrtle rust and kept under optimal conditions to induce infection. The extent of resulting infections was assessed using the modified Junghans scale.

Plants from each family were assayed for resistance to myrtle rust and the results indicate that resistance is present in some mānuka (*Leptospermum scoparium*), kānuka (*Kunzea robusta*), and rawiri mānuka (*K. linearis*). The results also indicate that resistance in pōhutukawa (*Metrosideros excelsa*) is likely to be considerably less.

Of the 570 pōhutukawa plants tested, only one resistant plant was found. No resistant plants of ramarama (*Lophomyrtus bullata*) or rōhutu (*Lophomyrtus obcordata*) were found in this study.

The distribution of the disease symptoms on plants from the same seed family, and between plants from different seed families, suggests that the leaf, stem and branch tip dieback resistances result from independent disease resistance mechanisms.