#### New app to identify plants at risk

#### from myrtle rustQuarantine Regulators Meeting

#### May 2021

#### Presenters:

Murray Dawson, Manaaki Whenua Landcare Research, New Zealand

**Background**

* Mar-May 2017: Myrtle rust arrived in NZ
* Need for rapid and accurate identification of host spp. to monitor and manage MR
	+ Interactive, intuitive, easy-to-use tool
	+ Web-based and mobile apps
* Oct 2018: MPI Request for Proposal
	+ MWLR, Scion, Unitec collaboration
	+ LucidTM identification key platform
* Work began Feb 2019; completed July 2020
	+ Here I’ll outline the NZ Myrtaceae key
	+ Live demonstration

#### Contributors

* Murray Dawson (MWLR)
* Matt Buys, Elizabeth Miller (Scion)
* Peter de Lange (Unitec)
* Chris Ecroyd
* Colin Ogle
* MPI a major contributor
	+ Funded by Operational Research Programme
	+ Planning, design, scope and feedback (PHEL)
* Jeremy Rolfe (DOC)
* Trevor James (AgResearch)
* iNaturalist NZ community

#### Plant identification: Limitations of printed Floras

* Not user friendly
	+ Technical language
	+ Complex descriptions
	+ Lack of illustrations
* Traditional printed keys
	+ Only one start point
	+ Only two choices
	+ Often rely on floral characters
	+ “Written by those who don’t need them, for those who can’t use them”

#### Interactive identification keys

* Multi-access
* Powerful and efficient
* Easy and fun to use
* More reliable than image recognition
* Allow for character misinterpretation
* Numerous taxa, characters, images
* >10 NZ keys hosted by MWLR
	+ Flowering plant genera
	+ NZ Weeds Key
	+ Grasses etc.
* Free and online
* LucidTM platform
* Smartphone derivatives

#### NZ Myrtaceae Key

* 97 taxa (species, subspecies, varieties, cultivars, hybrids)
	+ NZ natives
	+ Cultivated
	+ Naturalised
* Species profiles
	+ Written specifically for key
	+ Extensive glossary
* 30 characters / 106 character states
* >1600 images
	+ Taxa & diagnostic characters
	+ Fully captioned
* New tool works very well
	+ Could be reworked for Australian Myrtaceae
* Challenging to produce
	+ Useful model for other biosecurity and border management issues?
	+ Rapid, user friendly ID
	+ Integration of resources
* Identification of host species
* Not for reporting MR locations
	+ iNaturalist platform
	+ <https://inaturalist.nz/>

#### Live demonstration of the app.