#### New app to identify plants at risk

#### from myrtle rust Quarantine 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.