



Manaaki Whenua
Landcare Research

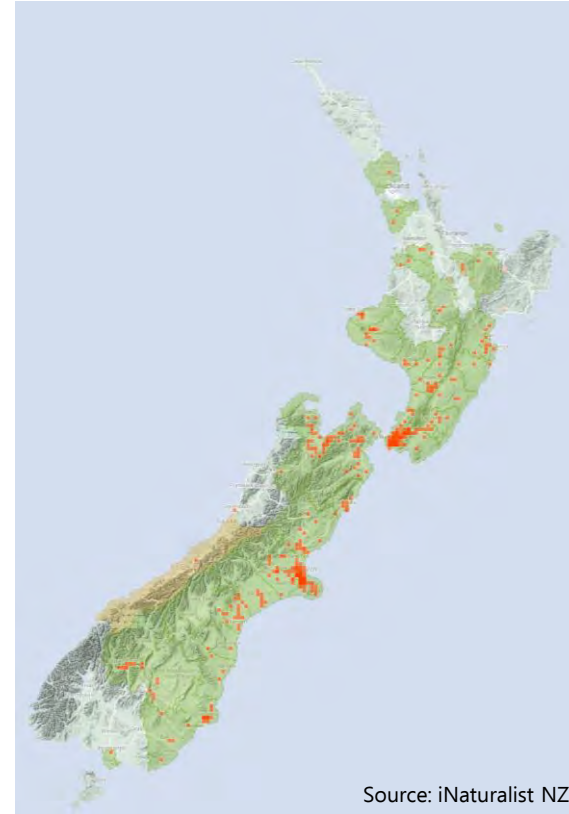
Establishment of two biocontrol agents on old man's beard in the Canterbury Region

Arnaud Cartier, Angela Bownes, Lindsay Smith, Hugh Gourlay

One of the worst terrestrial weed



- Sold as an ornamental in 1920s and quickly jumped the fence
- Dominate & smother other vegetation
- Now listed as Unwanted Organism
- Costly to keep under control
(Horizons Regional Council spends \$700k /year)



What has been done so far?

Biological control options investigated in the 90s

- Leaf mining fly introduced in 1996/97
→ established & widespread but parasitism happens
- Leaf fungus introduced
→ died out
- Sawfly introduced in late 90s
→ remained unnoticed until 2015
- Bark beetle found to be non-specific
→ rejected
- Eriophyid mite
→ approved for release in 2018



Leaf mining fly impact



Sawfly re-introduction

- New population from Serbia imported in 2018
- Mass-rearing efforts
 - ➔ more diverse genetic pool and sex-ratio
- Better selection of release site, close to us
- All our eggs in one basket
- 2500 larvae released in summer 2018/19



Monitoring new release site

- Site visited many times every summer
- Consistently found males nearby
➔ Population has established
- Larvae became much more common sight
- Feeding damage becoming obvious
- Confident to relocate to new sites



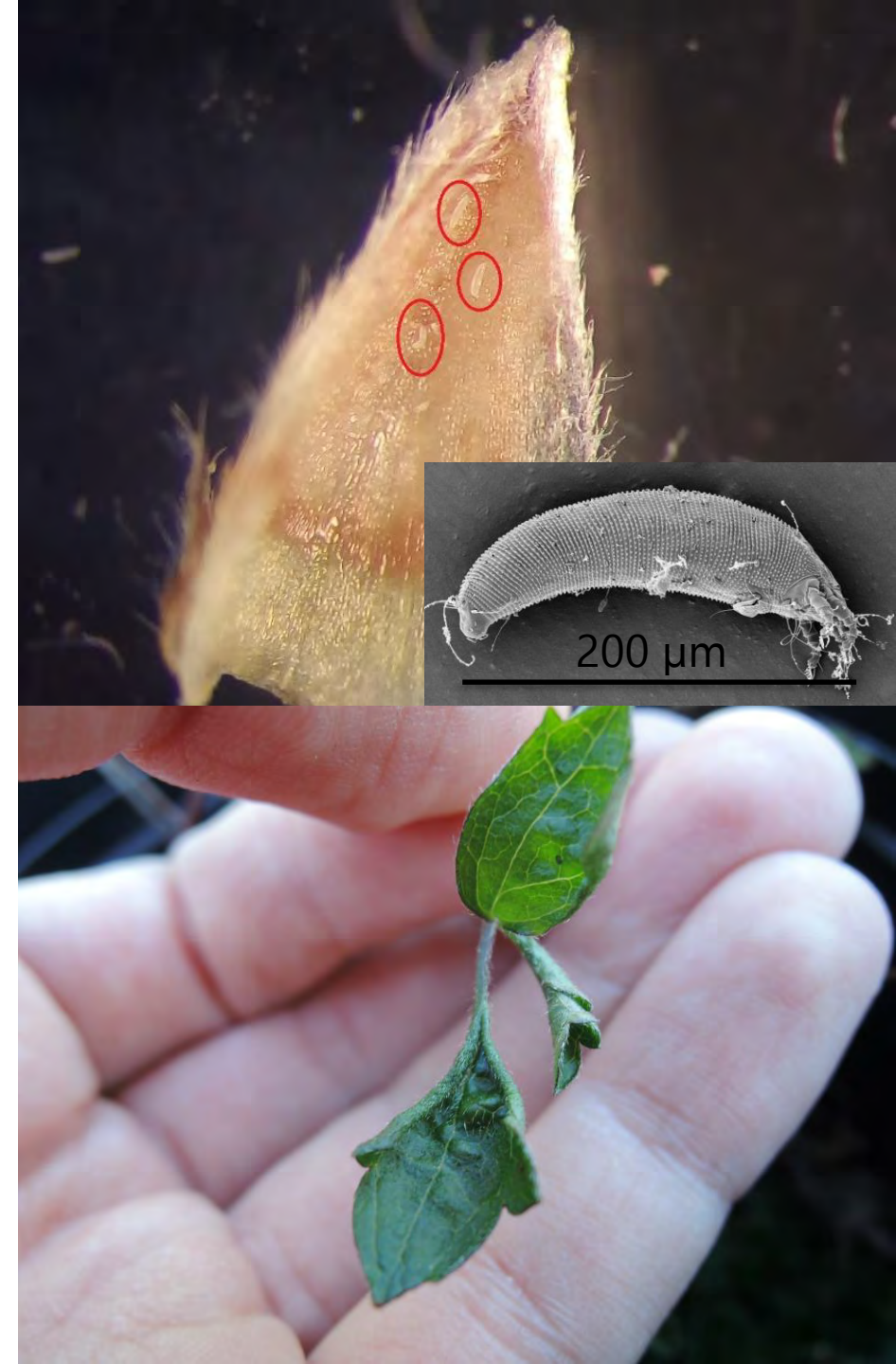
Potential of Eriophyid mites

- Minute size (<0.2mm)
- Highly host specific
- E.g. Broom gall mite released in 2008
- Multiple generations / year
- Expected to easily spread



Latest agent for OMB

- OMB mites first imported in 2011
- Host testing done in Serbia
- No obvious galls but produce curled leaves and reduce the growth of the plant
- Authorisation to release it in 2018
- First viable colony in containment in 2019



Mites finally ready to go

- Even the mites can't dodge a sharp lockdown
- Released over 14 locations in both Islands
- 2 sites in Canterbury Region

New Zealand announces it's locking down the entire country ... over one Covid case



By Julia Hollingsworth and Chandler Thornton, CNN

Updated 2340 GMT (0740 HKT) August 17, 2021



Establishment confirmed



- Mites found at release sites in Canterbury
- Extended search over Canterbury Region found new established populations
- Farthest dispersal over 65km from closest population
- Establishment is expected in other regions following releases
- Mites confirmed in Manawatū-Whanganui



What's next?

- Collecting & Relocating sawfly population
- More mite releases next spring
- Monitoring impact of mites in the field
- Looking for new pathogens in Europe

