



Update on DNA trial May 2008

Anna Hopkins
Tod Ramsfield
Matt Power

Comparing pruned and unpruned trees



- Hypothesis: *Nectria* enters trees through pruning wounds
- Methods:
 - ▶ Cores from 90 pruned and 90 unpruned trees (no flute cankers)
 - ▶ 4 sites, 3 forests
 - ▶ DNA extracted & PCR: 2006, 2007, 2008
 - ▶ Cultured: 2007, 2008



- 2006: No significant difference between pruned and unpruned trees
- 2007: results (DNA and culturing) similar to 2006
- 2008: awaiting results

| Pruning Status | Nectria present | Nectria absent | % present |
|----------------|-----------------|----------------|-----------|
| Pruned | 17 | 73 | 18.9 |
| Un-Pruned | 22 | 68 | 24.4 |

Destructive Sampling



- Destructively sampled 5 trees (positive for DNA in 2007)
- Cut discs at coring points and at points along stem
- Isolations from each disc



Results of Destructive Sampling



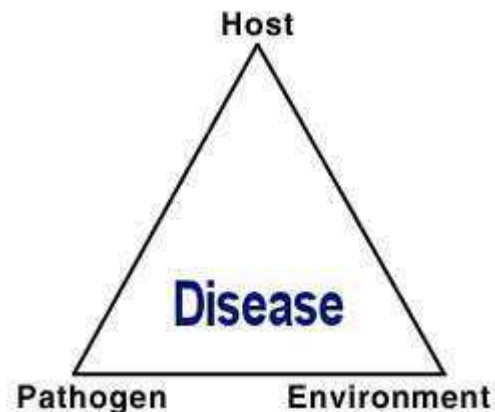
- No whitewood or *Nectria*-like staining
- Coring points obvious and resinous
- *Nectria* isolated from 17/63 discs
- Most successful isolations from discs near coring points
- More analysis required





- *Nectria* can enter trees another way
- 2008 – destructive sampling of positive trial trees to find entry point
- **New trial:**
Entry through bark cracks and branch crotches

Nectria flute canker* vs *N. fuckeliana



from apsnet.org

- Role of pruning?
- Disease triangle
- Fluting much more common on pruned trees
- Pruning trials show more fluting in winter
- No record of an unpruned tree with fluting and perithecia
- Pruning changes tree conditions?
 - ▶ Stress
 - ▶ Drying out – whitewood



- Peter Oliver & Ross Chambers, City Forests
- James McEwan, Paul Greaves & Aaron Gunn, Wenita
- David Orlovich, Mary Anne Miller & staff Otago University
- FBRC