

Plenodomus tracheiphilus, but not *Dothiorella ulmi*, causes wilt disease on elm trees in Alberta

The Alberta Plant Health Lab (APHL), Alberta Agriculture and Irrigation Society To Prevent Dutch Elm Disease (STOPDED)

Over the past eight years (2016-2023), 200 elm trees across Alberta were tested by APHL for DED and other diseases. We found that *Plenodomus tracheiphilus*, but not *Dothiorella ulmi*, is the major pathogen causing the wilt symptoms (Fig. 1).



- ❑ On morphologies, the isolated fungus is different to *D. ulmi*, but same as *P. Tracheiphilus* (Fig. 2).
- ❑ DNA barcoding and phylogenetic analysis confirmed the ID of the fungus (Fig. 3).
- ❑ The fungus was inoculated on elm.
 - Wilt symptoms were reproduced.
 - The same fungus was retrieved.



Fig 1. Google Map photos of an elm tree showing wilt symptoms

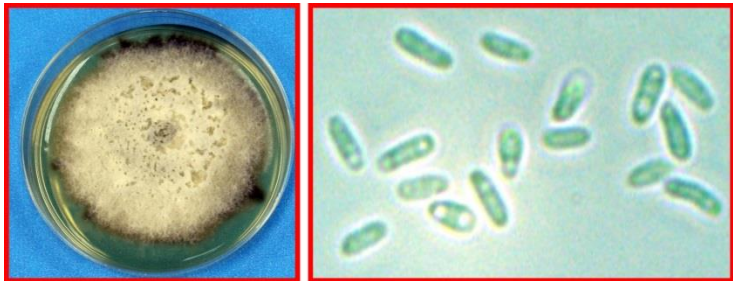


Fig 2. The colony (left) and spores (right) of the isolated fungus

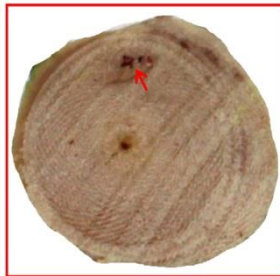


Fig 4. The identified *P. tracheiphilus* is pathogenic on elm

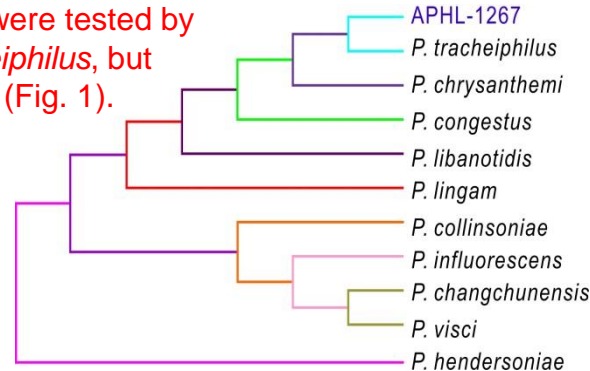


Fig 3. Phylogenetic analysis identified the isolated fungus as *P. tracheiphilus*

Plenodomus tracheiphilus

- ❖ Is the causal agent of Mal secco of citrus trees, which is a disastrous disease in Europe.
- ❖ Has never been reported in Canada.
- ❖ Has never been reported as a pathogen of elm in the world.

From 200 elm trees across Alberta

- *Plenodomus tracheiphilus* was isolated from 116 trees (Fig 5).
- *Plenodomus tracheiphilus* is prevalent in Edmonton area.
- *Dothiorella ulmi* has never been isolated.

➡ Based on this study, we propose changing the disease name from *Dothiorella wilt* to *Plenodomus wilt*.

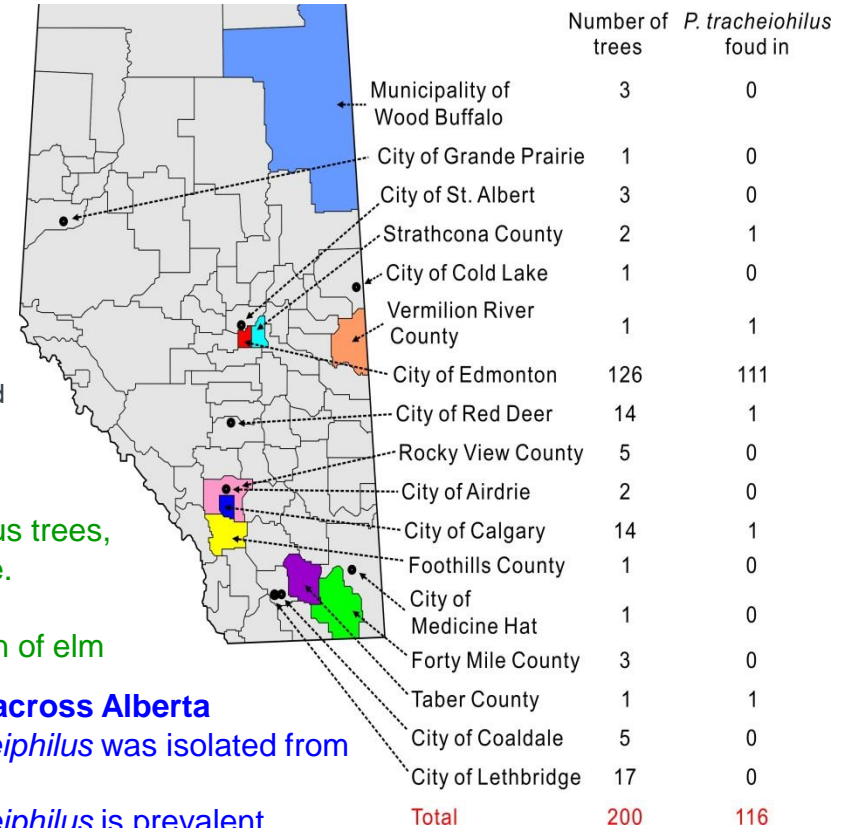


Fig 5. Prevalence of *P. tracheiphilus* in Alberta

