

A survey of *Cytospora* species in Peach, Cherry, and Apple Orchards

By Grace Ganter

COLORADO STATE UNIVERSITY

TRI-RIVER AREA **EXTENSION**



AGRICULTURAL SCIENCES

Picture: City of Palisade

Extension Intern

- 10-week summer internship
- The Stewart Lab and Tri-River Area extension
- Two projects:
 1. A survey of peach, cherry and apple blocks to investigate the diversity of *Cytospora* and other fungal organisms present
 2. Sample collections for field trial conducted by master's student Sean Wright



Orchard Surveys

Our goals were to:

- Investigate *Cytospora* species present
- Determine potential species overlap across hosts
- Determine other fungal species associated with canker symptoms

Why?

- By investigating the diversity of *Cytospora*, we are able to gain better understanding of *Cytospora* pathogens



What is *Cytospora*?

- A canker fungus currently causing high mortality in orchards on the western slopes
- Many species of *Cytospora* found on a variety of hosts
- Host specificity varies across *Cytospora* species
- Not all *Cytospora* species are pathogenic to the host they are found on



The Different Lifestyles of Fungi

Saprophyte: Lives only on dead tissue

Endophyte: Lives in host without causing damage

Pathogen: Causes tree disease



Methods

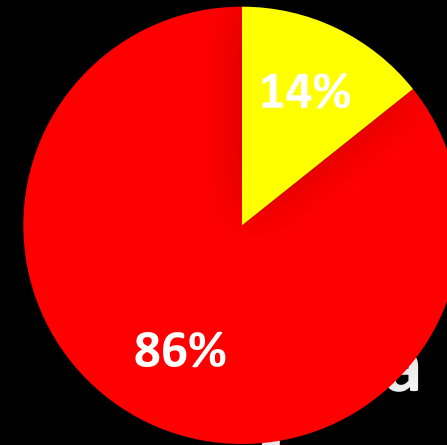
- Five Blocks
 - Three peach
 - One cherry
 - One apple
- Two symptomatic trees were identified
- Samples were collected
- Cultured on $\frac{1}{2}$ PDA media.
- Extracted DNA and sequenced at ITS to determine the identity



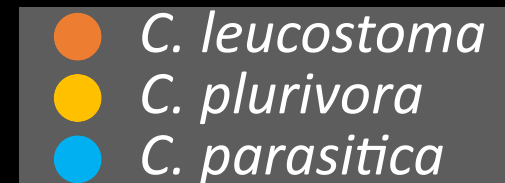
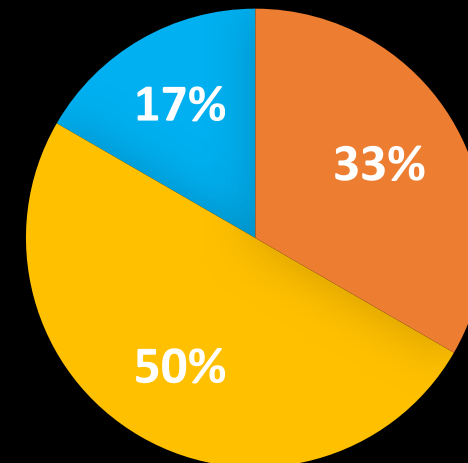
Diversity of Fungi Found in Symptomatic tissue on Peach

- Two fungal genera were found on Peach:
 - *Cytospora* and *Alternaria*
- *Cytospora*:
 - *C. leucostoma*, *C. plurivora*, and *C. parasitica*

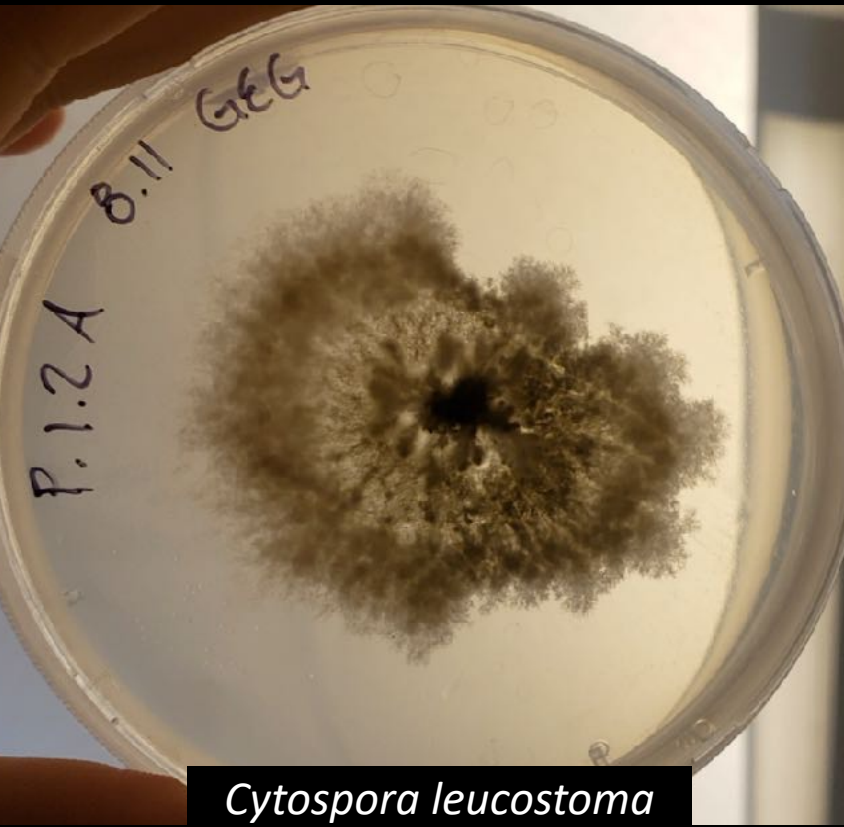
Fungal Genera on peach



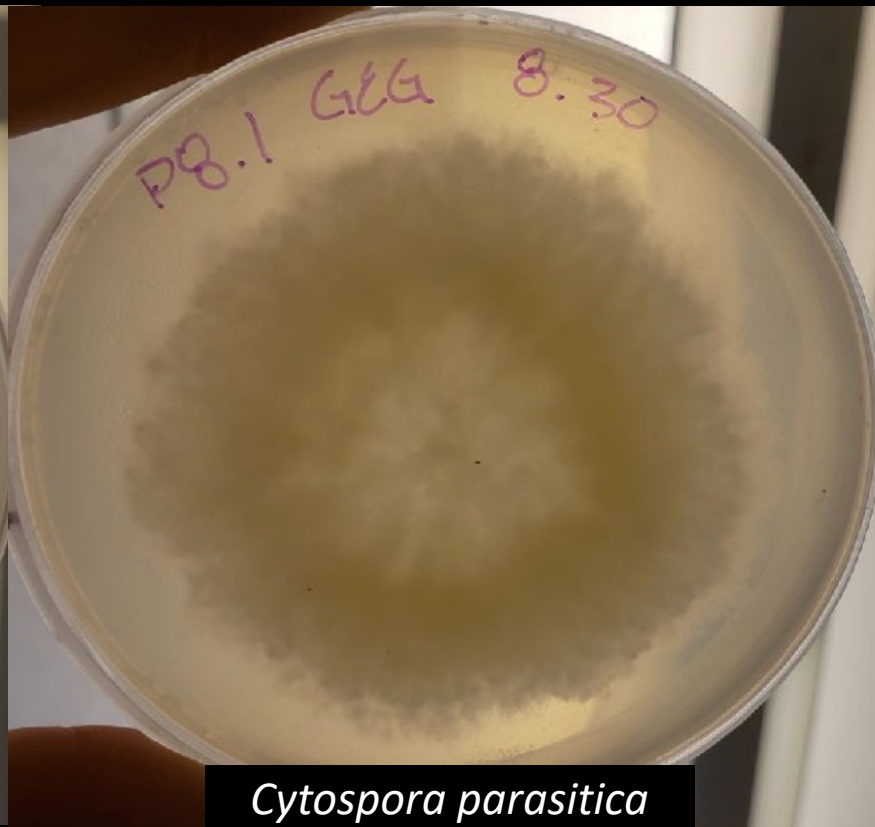
spp. from peach



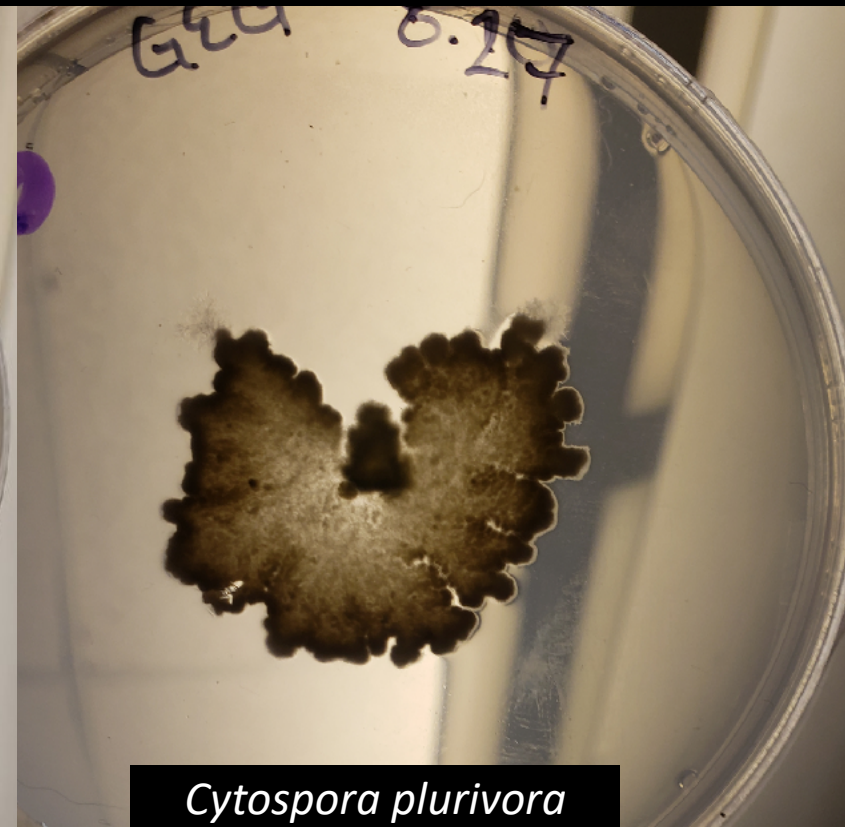
Cytospora Isolates from Symptomatic tissue on Peach



Cytospora leucostoma



Cytospora parasitica



Cytospora plurivora