

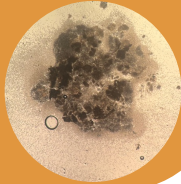
PLANT DIAGNOSTIC CLINIC INTERNSHIP

DENVER AND LARIMER COUNTY

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INTRODUCTION

- The PDC provides monitoring and early detection of emerging and invasive pests, pathogens, and weeds that pose a threat to Colorado natural resources, agriculture and the U.S. food supply.
- My internship was based around learning more about common Colorado diseases and pests and creating educational factsheets of plant diseases.



GOALS

- Help with usual workflow at the clinic.
- Learn diagnostic methods and how to detect and identify different pathogens.
- Learn sterile lab techniques.
- Participate in outreach and educational events held at the CSU Spur campus.



Pseudomonas Bacterial Leaf Spots and Blight – Diseases of Interest

Quick Facts

- Pseudomonas is a genus of Gram-negative bacteria.
- The bacteria are usually associated with the aquatic environment.

Hosts

- Pseudomonas is a very diverse genus. There are several species that can be found in the aquatic environment.

Pathogen

- Pseudomonas is a very diverse genus. There are several species that can be found in the aquatic environment.

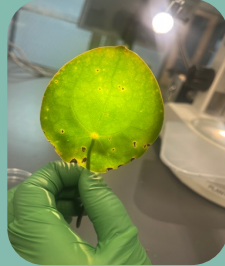
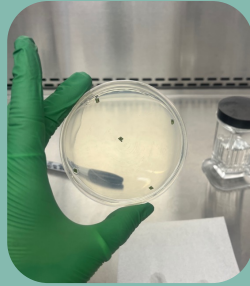
Diagnosis

- Pseudomonas is a very diverse genus. There are several species that can be found in the aquatic environment.

Management

- Pseudomonas is a very diverse genus. There are several species that can be found in the aquatic environment.

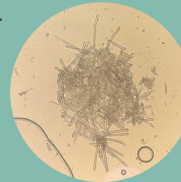
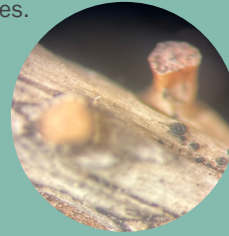
LEARNED SKILLS



- Learned how to extract nematodes from soil and from roots.



- I learned how to extract DNA from different samples (soil and plants), how to visualize it, and how to analyze results from sequencing data.

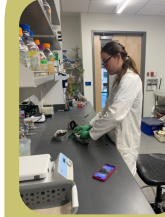


- I learned how to make media, plate bacteria and fungi, and how to isolate cultures from plates.
- Identified signs and symptoms of common diseases affecting plants.
- Identified pathogens by spore shape and structure.



- Learned sterile lab protocol.

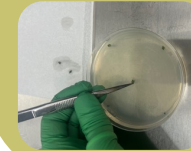
PROJECTS



Project 1: I helped complete data collection for a project regarding *Spongospora subterranea* (powdery scab).



Project 2: Working in the clinic and learning lab practices and protocols.



OUTREACH

- I participated in 2nd Saturdays at Spur, helped with tours and other educational activities throughout the day.
- I created factsheets for *Pseudomonas syringae* and needle cast diseases in Colorado. I made these to be accessible and helpful to the general public.



Needle Casts – Diseases of Interest

Quick Facts

- Needle cast is caused by a variety of fungi that can produce needle cast symptoms.
- Needle cast symptoms include brown, necrotic, and distorted needles.
- Needle cast symptoms can be caused by several different fungi, including *Pseudomonas syringae*.
- Needle cast symptoms can be caused by several different fungi, including *Pseudomonas syringae*.

Hosts

- Pines, spruce, fir, larch, and other conifers.

Diagnosis

- Needle cast symptoms include brown, necrotic, and distorted needles.

Management

- Needle cast symptoms include brown, necrotic, and distorted needles.



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