Progress Report

Enhancing Resistance to Fungal Pathogens in Commercial Tree Seedlings

CAFS 23.XX

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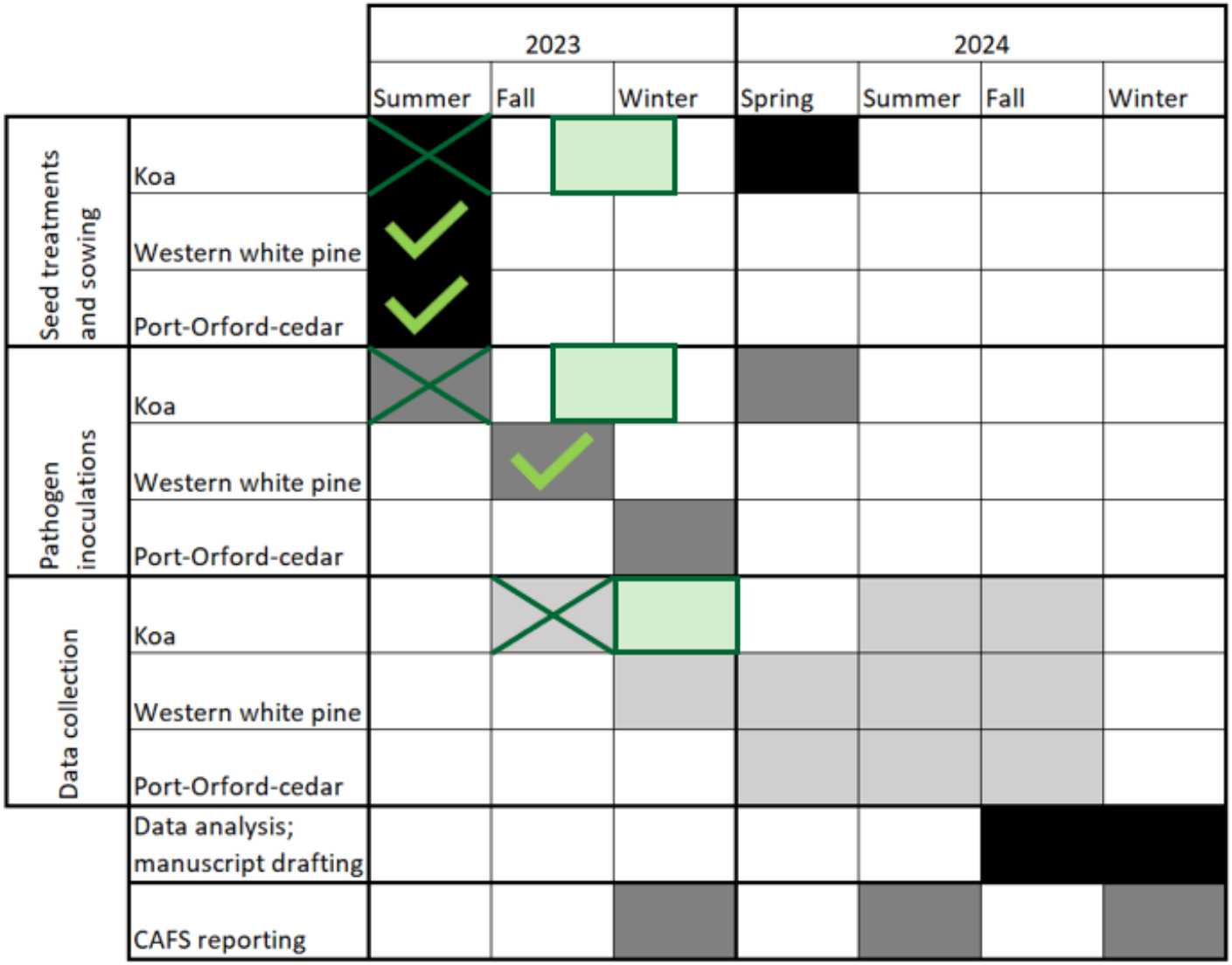
Project Overview

- Endophytes are nonpathogenic microsymbionts within plant tissues
- *Bacillus* is known to produce strong antimicrobial compounds and is commonly isolated from foliage and seeds

Objective:

- To enhance survival of commercial 'resistant' varieties of seedlings against virulent strains of devastating pathogens:
  1. *Acacia koa* against *Fusarium oxysporum f. sp. koae*.
  2. *Pinus monticola* against *Cronartium ribicola*.
  3. *Chamaecyparis lawsoniana* against *Phytophthora lateralis*.

Current Progress



Future Plans

Koa

- Inoculate koa seedlings with bacterial endophytes
- Sow germinated seedlings into FOXY inoculated soil
- Begin collecting daily mortality data

Western white pine

- Begin disease severity scoring in December 2023
  - Testing three factors:
    - Bacterial treatment vs. water control
    - Susceptible seed vs. resistant seed sources
    - High spore density (4000 spores/cm^2) vs. low spore density (2000 spores/cm^2)

Port-Orford-cedar

- Inoculate with pathogen in January 2023
  - Testing three factors:
    - Bacterial treatment vs. water control
    - Susceptible seed vs. resistant seed sources
    - Homogenization risk with inoculation method