

HEALTHY

*B. EUROAMERICANA**B. FABIOPSIS**B. CINEREA*DISEASE SPOTLIGHT: *BOTRYTIS* SPP.

## UNITED EFFORTS TO FIGHT BLUEBERRY FRUIT ROTS

### HARVESTING PROGRESS: ON THE RIGHT PATH

The nationwide efforts of the BLUEDYNAMO team have been focused on assessing resistance in *Colletotrichum* and *Botrytis* populations, confirming the presence of fruit rot pathogens, identifying new fungal species causing disease in blueberries, building better isolate collections, and tracking fungicide use in blueberries across the United States.

#### THE LATEST



#### BLUEDYNAMO STAKEHOLDER MEETING

Hosted by Rutgers at the Philip E. Marucci Center, this meeting brings researchers and stakeholders together to review new findings, discuss impacts, and identify gaps. An open feedback session will guide future work and collaborations.

# Semmiannual Newsletter



Research Updates



Researcher Spotlight



Research Communication Efforts

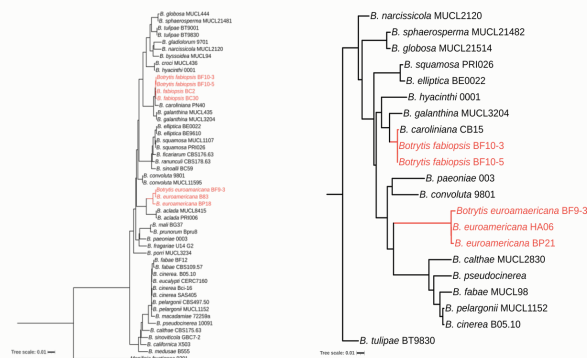


Coming Next

## DEEP BLUE INSIGHTS: KNOWLEDGE AND TOOLS

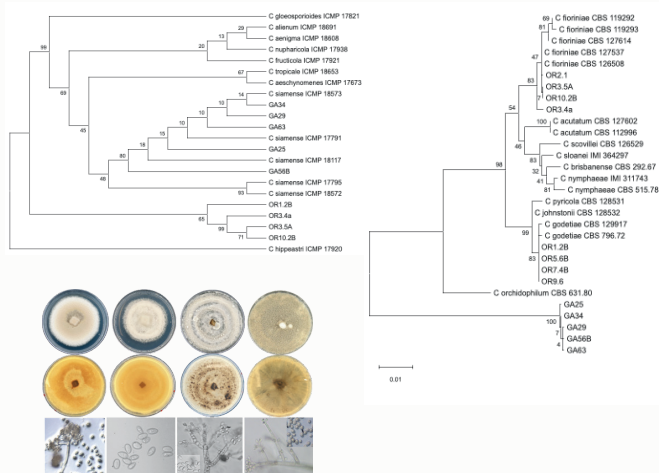
### From the Miles Lab:

- **Adam** is finalizing a field study on FRAC 11-resistant *C. fioriniae* and phenotyping historical isolates to evaluate fungicide responses. He's also conducting Koch's postulates to confirm *Botryosphaeria dothidea* as a stem blight pathogen in Michigan blueberries.
- **Suhkdeep** has put together a robust collection of over 500 *Botrytis* isolates from Michigan, Oregon, Washington, Georgia, and New Jersey.
- **Joel** has named a new species, *B. michiganensis*, and confirmed *B. fabiopsis* and *B. euroamericana* in the state.



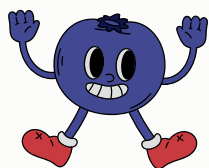
### From the Hu Lab:

- Confirmed CRISPR/Cas9-based transformations of *B. cinerea* carrying FRAC 7 resistance mutations in the SDHB gene—specifically H272R (Phenotype B) in three parental isolates and N230I (Phenotype A) in one. Mutants were validated using selective media, Sanger sequencing, and off-target analysis.
- Identified fungicide resistance mutations (G143A and F129L) in *C. fioriniae* isolates from Michigan and used DNA sequencing to confirm *Colletotrichum* species collected from New Jersey, Georgia, and Oregon. A phylogenetic tree was built using key gene markers to better understand species relationships and distribution across regions.



BUILDING PHYLOGENETIC TREES TO IDENTIFY FUNGAL PATHOGENS

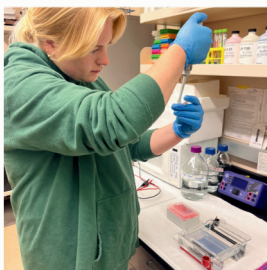
# Semmiannual Newsletter



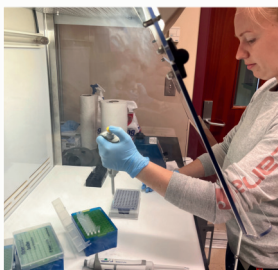
## DEEP BLUE INSIGHTS: KNOWLEDGE AND TOOLS

### From the Mattupalli Lab:

- **Mary** has been continuing work on validating a real-time quantitative polymerase chain reaction (qPCR) assay, and developing an additional assay, to efficiently detect mutations in *B. cinerea* that confer resistance to key FRAC group 7 fungicides.
- **Maggie** is working on determining species identity (*B. cinerea* or *B. pseudocinerea*) of the 100 *Botrytis* spp. isolates collected from flower samples in Washington blueberry fields in 2025.

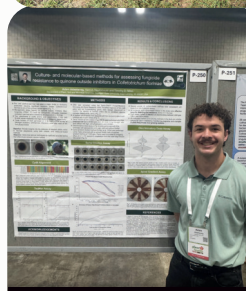
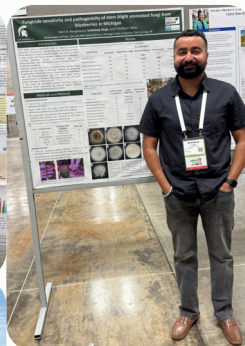


MAGGIE



MARY

## THE TEAM: PRESENTATIONS AND TRIALS



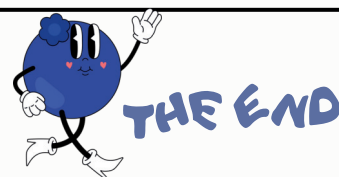
THE MILES LAB

## ON THE RECORD: RESISTANCE, SPECIES ID, TRENDS

### From MSU's Small Fruit & Hop Pathology Lab

Adam published a report on FRAC 11-resistant *C. fioriniae* and is preparing one on *B. dothidea* stem blight in Michigan. Joel and Sukhdeep published a short communication on a new *Botrytis* species, and Luisa's blueberry fungicide-use analysis is ready for review.

## NEXT PHASE



Future efforts will be focused on the phenotyping of isolates against key fungicides to assess EC50 shifts and resistance frequencies, paired with resistant isolates evaluation of growth, sporulation, and virulence to quantify fitness penalties.