



Plant Pathology & Microbiology
PEPM
TEXAS A&M UNIVERSITY



**AGRICULTURE
& LIFE SCIENCES**
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**AGRILIFE
EXTENSION**

Agenda

What we know

Identification

Management



Background of PLDB

- First observed in Georgia in 2011
- Seen in Louisiana, Alabama, and Texas
- In Texas we found it in Williamson, Wharton, Lavaca, and Burleson counties
- In 2021, caused by fungus *Neofusicoccum caryigenum*

What we know

- Causes leaves to die on pecan trees
- A key symptom is blackening of the leaflet
- Symptoms are usually seen from June through October
- May cause decreased yield and tree health
- Has been isolated from cankers on pecan trees
- Wounds increase risk of infection

Identification

Dead leaves on terminal branches are a common symptom of PLDB. May resemble other diseases, insect damage or abiotic stress.



Identification

PECAN LEAF DIEBACK



PECAN BACTERIAL LEAF SCORCH



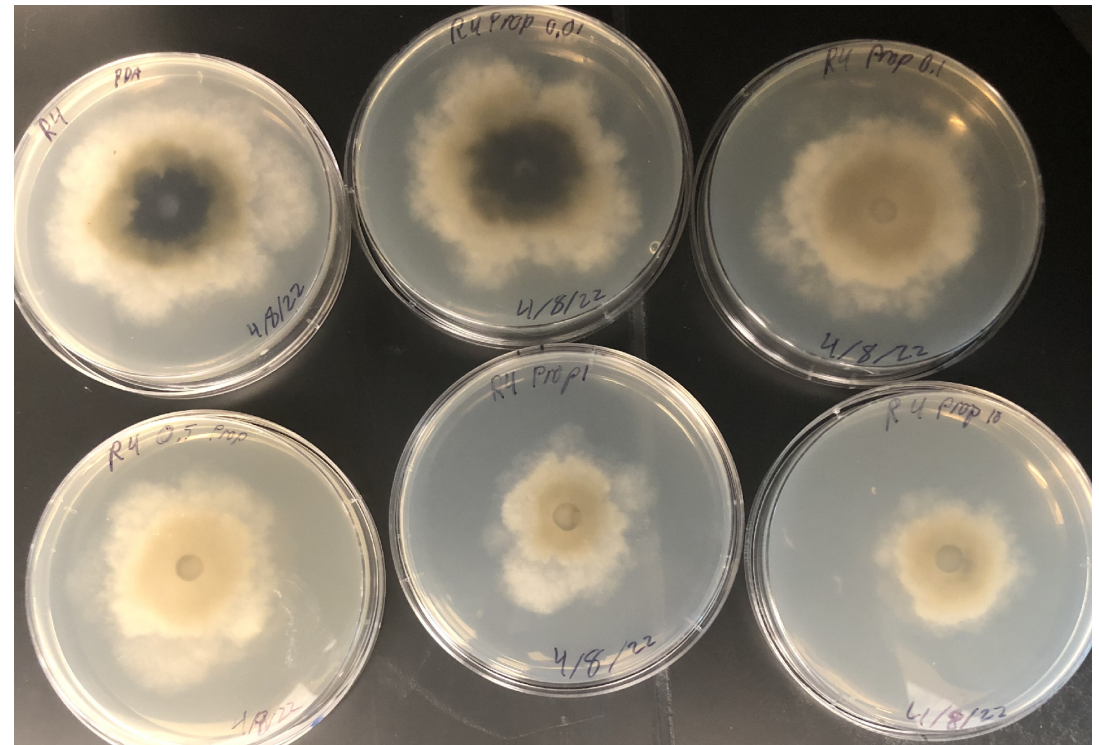
Fungicides

- Still seeing PLDB symptoms despite fungicides being used
- Either the fungicides or timing of the application is not effective
- We are testing fungicides used on pecan scab



Fungicide Assays

- Tebuzole (Tebuconazole), Elast (Dodine), Supertin (Fentin Hydroxide), and Aframe (Azoxystrobin)
- Six concentrations for each fungicide
- Grew the fungus on petri dishes with fungicide
- Samples from Wharton, Williamson, Burleson, and Lavaca counties



Discriminatory Concentrations

Fungicide	PLDB (ppm)	Scab (ppm)
Tebuzole (Tebuconazole)	0.25	1
Elast (Dodine)	50	3
Supertin (Fentin Hydroxide)	1	30
Aframe (Azoxystrobin)	1	N/A

What should we do?

- Diseases similar to PLDB only spreads through spores once per year, scab spreads spores multiple times per year
- Might be better to use a systemic fungicide (like tebuconazole) in late season.



Field Study

In Texas A&M Horticulture
Research Orchard

Ten-year-old Nacono trees

4 treatments

Aframe (azoxystrobin)

Supertin (fentin hydroxide)

Elast (dodine)

Tebuzole (tebuconazole)

Control not sprayed with fungicides

Monthly fungicide application and
rating of symptoms

PLDB Research

LIFE CYCLE

- When are spores present in orchards?
- Will help determine when fungicide applications will be most effective.
- Placing spore traps in orchard and monitor throughout the spring and summer.

POPULATION STUDY

- Using genetic research to find relationships between *N. caryigenum* in different orchards.
- Will help determine management strategies by location
- Collecting samples across Southeastern U.S. and looking at genetic markers by population.



Conclusions

- Start looking for Pecan Leaf Dieback now
- Send samples to the Jo lab
- Dodine products may not be effective
- Tebuconazole products seem to work well.
- **No Fungicides are currently labeled for PLDB**

A photograph of a grassy field with trees and a dark overlay containing the text 'Thank you'. The scene is a wide, open field with a path of tall grass leading towards a line of trees in the distance. The sky is blue with scattered white clouds. A dark, semi-transparent horizontal band is overlaid across the middle of the image, containing the text 'Thank you' in a white, serif font.

Thank you

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