Leaf blotch (*Zythia fragariae*) an emerging problem to California strawberry industry

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Zoom Meeting

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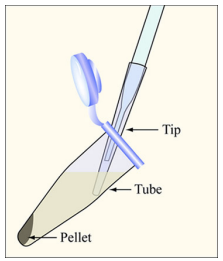
Outline

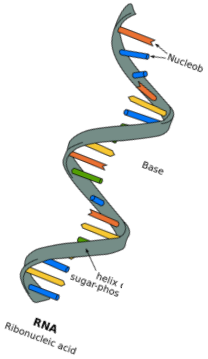
- Extension service for plant disease identification
- Current projects
- Leaf blotch disease of strawberry

Identification of Plant Pathogens

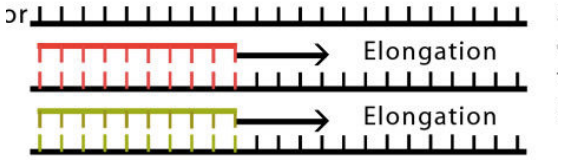
Symptomatic plant tissue

Culture Media



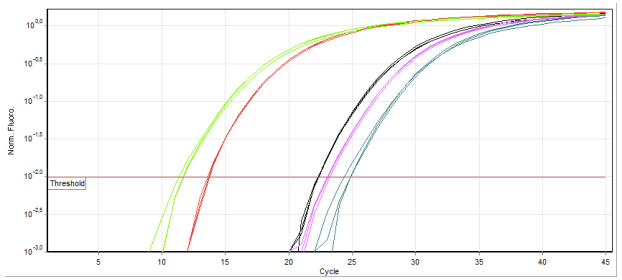


DNA Extraction

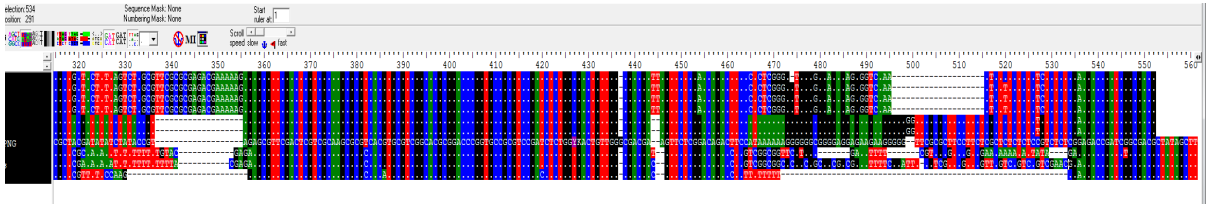


Species Specific Primers

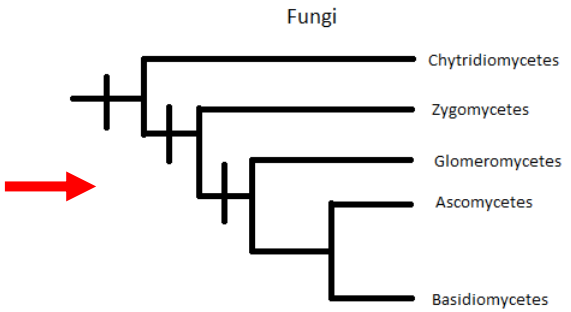
Quantitative Real Time PCR



Identification based on melting curve



Sequencing the DNA Region



Phylogenetic Tree

Current Projects on Strawberry

Effect of Soil Inoculum Density of *Fusarium oxysporum* f. sp. *fragariae* and *Macrophomina phaseolina* on Development of Fusarium wilt and Charcoal rot.

- **Cooperators(s):**
- Ana M. Pastrana Leon, University of California, Davis.
- Thomas R. Gordon, University of California, Davis
- Karina D. Elfar Aedo, University of California, Davis
- Mark Bolda, UC Cooperative Extension
- Oleg Daugovish, UC Cooperative Extension
- Frank Martin, USDA-ARS, Salinas

Leaf blotch

- It has been considered a minor problem.
- It has been an emerging problem especially in **wet years** like 2019

Bolda, M

Symptoms

- Leaf spots that vary from purplish to brownish blotches to light brown necrotic spots.

- The blotches are irregular in shape.

Eskalen, A

Symptoms

- The blotches can cover pretty well the whole leaf.

- Petiole blight

Eskalen, A

Symptoms

- Lesions on the sepals to completely infected calyx that turned to necrotic and brittle
- As the calyx infections appear those fruits become unmarketable causing economic loss to growers and shippers.

Symptoms

- Fruit in all stages of maturation may be affected causing a dry necrosis in the first stages and a fairly firm water-soaked brown rot on nearly ripe fruits, very like the early non-sporulating stage *Botrytis cinerea* infection.

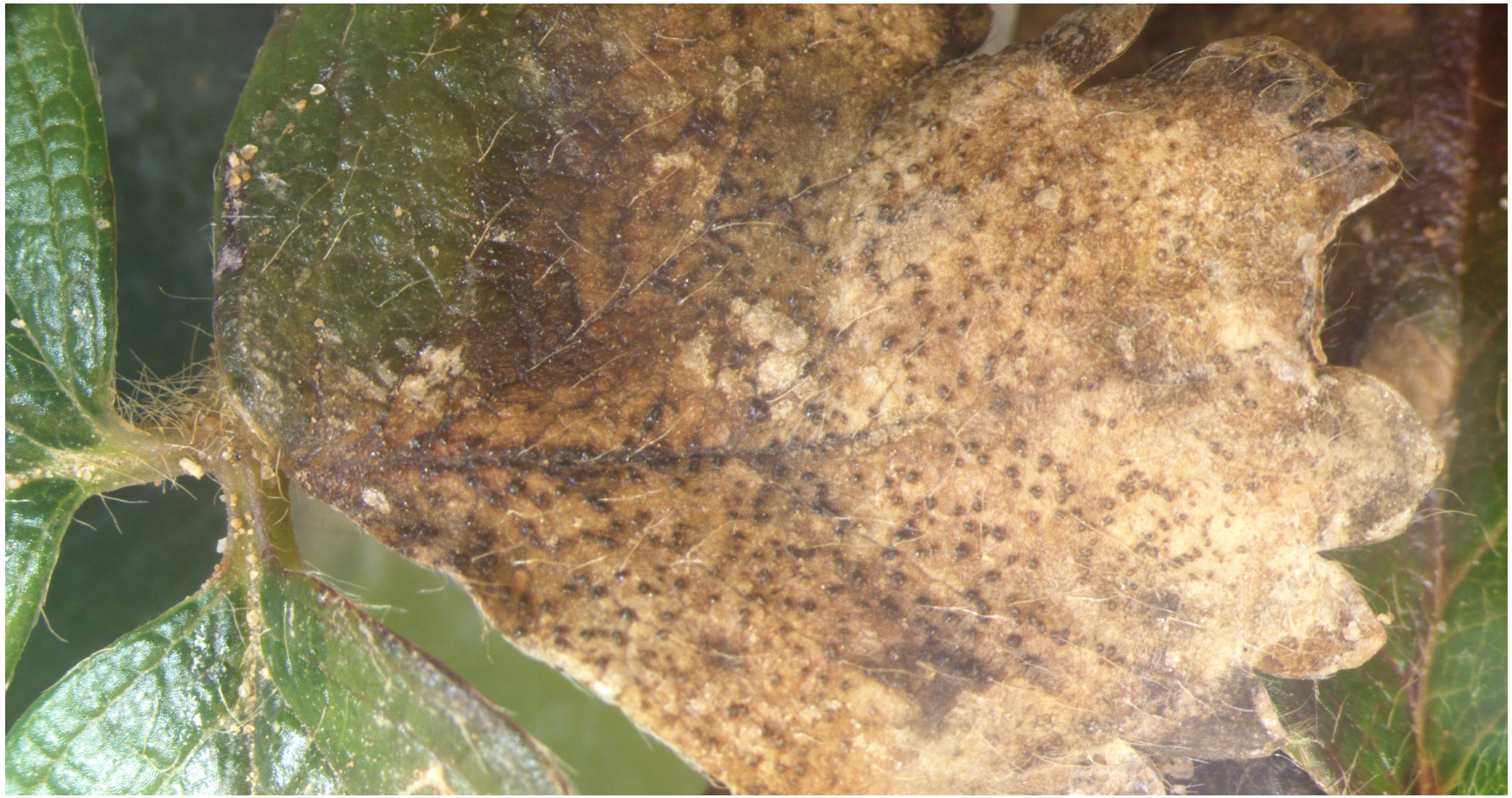
- Infected fruit are often invaded by secondary rotting organisms as *B. cinereal.*

- Losses due *Z. fragariae* can been attributed to *B. cinerea* due the similarity of symptoms in the early stage.

Frank J. Louws

Signs

- The pathogen can produce numerous **pycnidia** containing conidia.



Eskalen, A

- Leaf blotch is considered a minor disease, nevertheless, **minor disease could get to be a major issue** when appropriate environmental conditions arise.

- It is necessary to be prepared and know the etiology and epidemiology of the disease to be able to control it correctly if necessary

Thank You

http://ucanr.edu/sites/eskalenlab