Neopestalotiopsis spp. in Strawberry and Recovery of Other Pathogens in Strawberry Samples

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Fumigants and Non-Fumigant Alternatives Meeting:
Regulatory and Research updates
5.19.23

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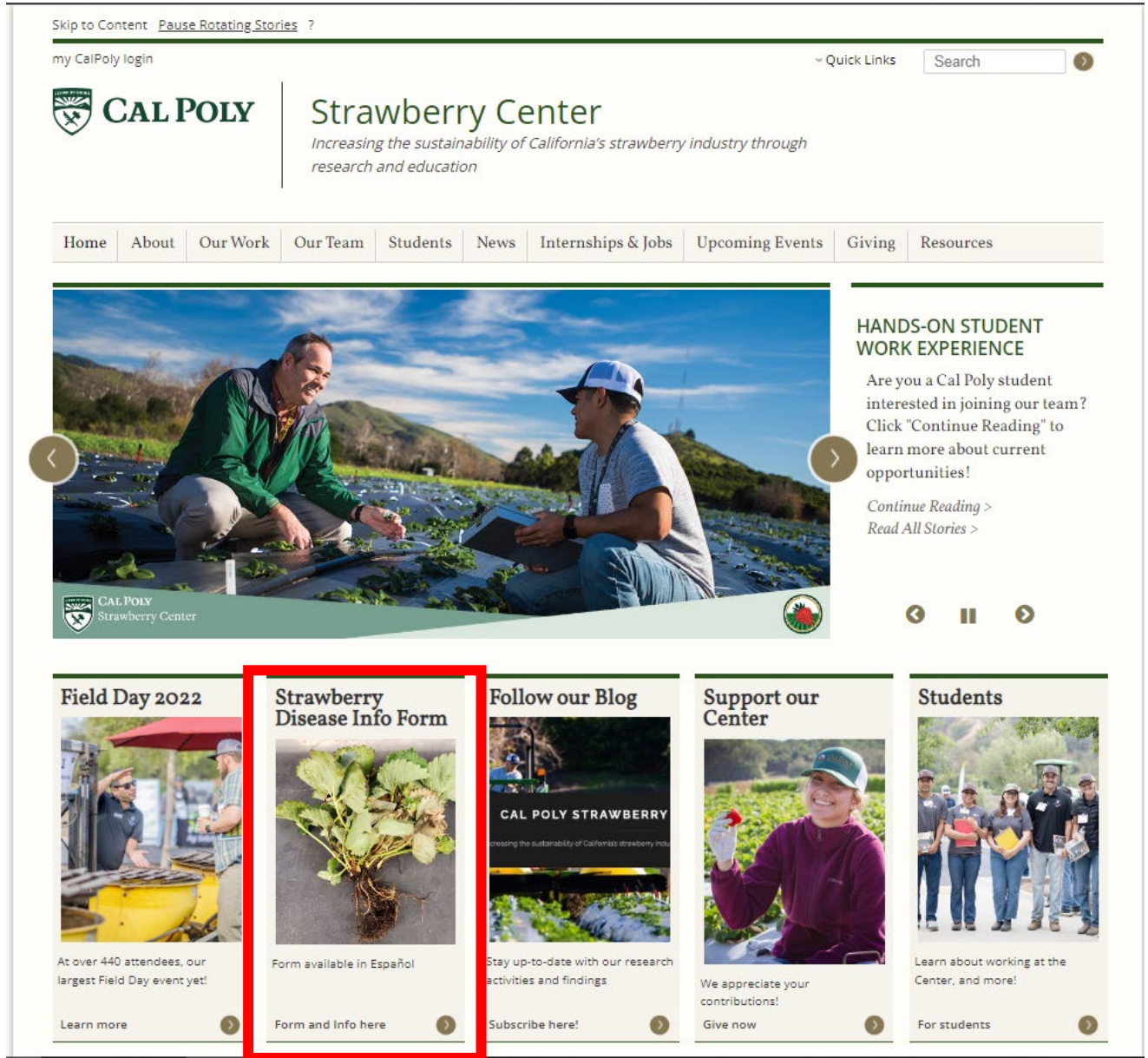
Strawberry Center

Cal Poly Strawberry Center Diagnostic Service



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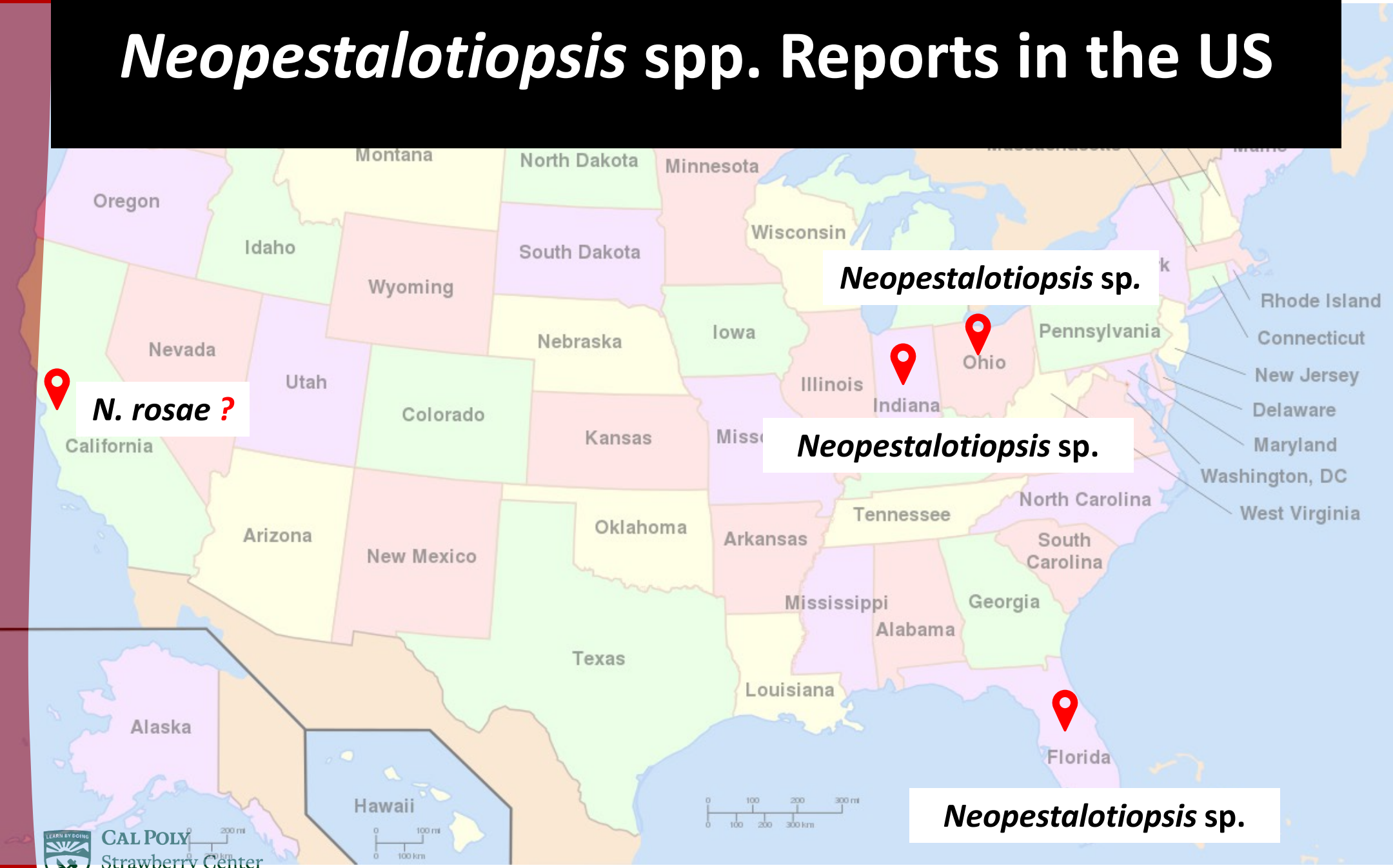
Comparison of Disease Identification with Past Years

Disease/pest/disorder	Number of samples			
	2020	2021	2022	2023 (Up to May)
Abiotic/pest problems	39	16	25	10
Macrophomina crown rot	37	25	35	0
Phytophthora crown rot	10	12	28	1
Fusarium wilt	31	11	32	2
Verticillium wilt	17	7	11	0
Zythia dry calyx, leaf blotch, crown infection	9	0	4	0
Rhizoctonia spp.	5	8	2	2
Pythium spp.	NA	29	35	1
Botrytis spp. (box rot)	NA	2	0	1
Meloidogyne hapla	NA	NA	4	0
Neopestalotiopsis rosae	2	0	1	0
Total number of samples	**164**	**96**	**168**	**17**

Neopestalotiopsis spp. Reports Around the World

Strawberry Center

Neopestalotiopsis spp. Reports in the US



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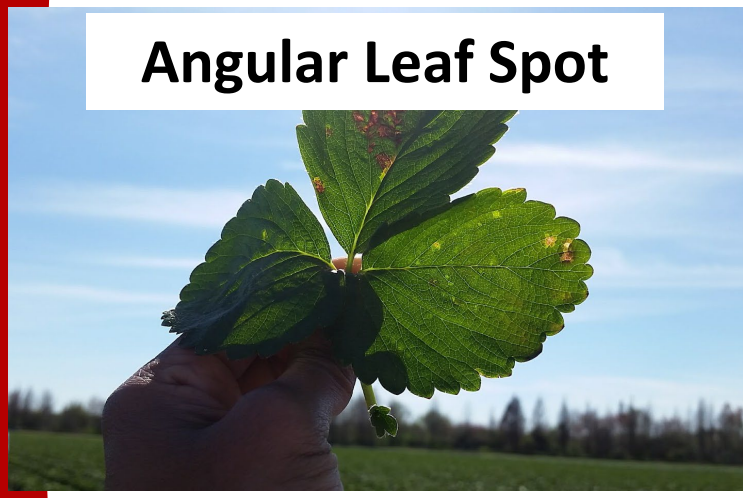
Strawberry Diseases-Leaf Symptoms

Common Leaf Spot

Zythia Leaf Blotch

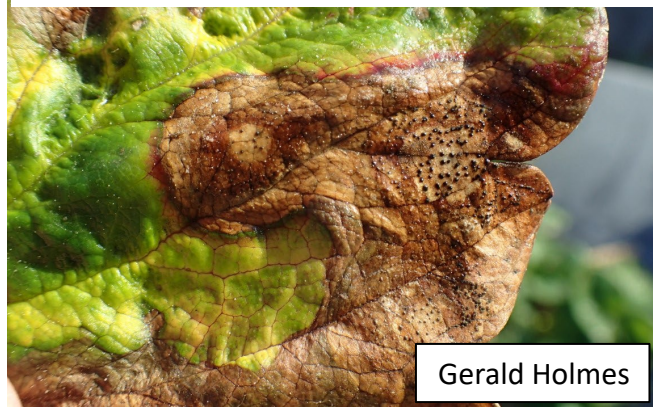
Phomopsis Leaf Blight

Angular Leaf Spot



Leaf Scorch

Neopestalotiopsis Leaf Spot



New *Neopestalotiopsis* sp. Leaf Symptoms

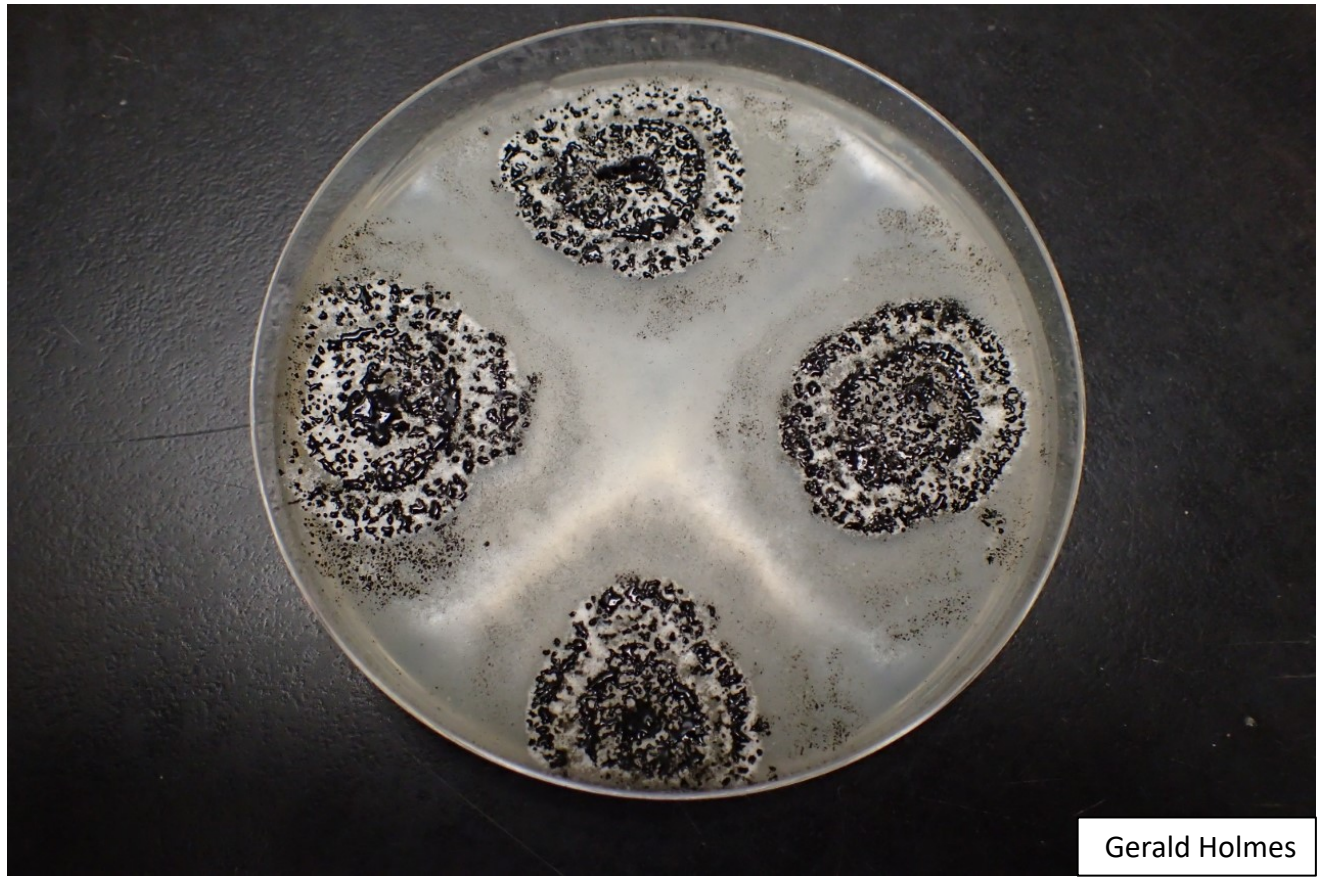
Gerald Holmes

CAL PO
Strawbe

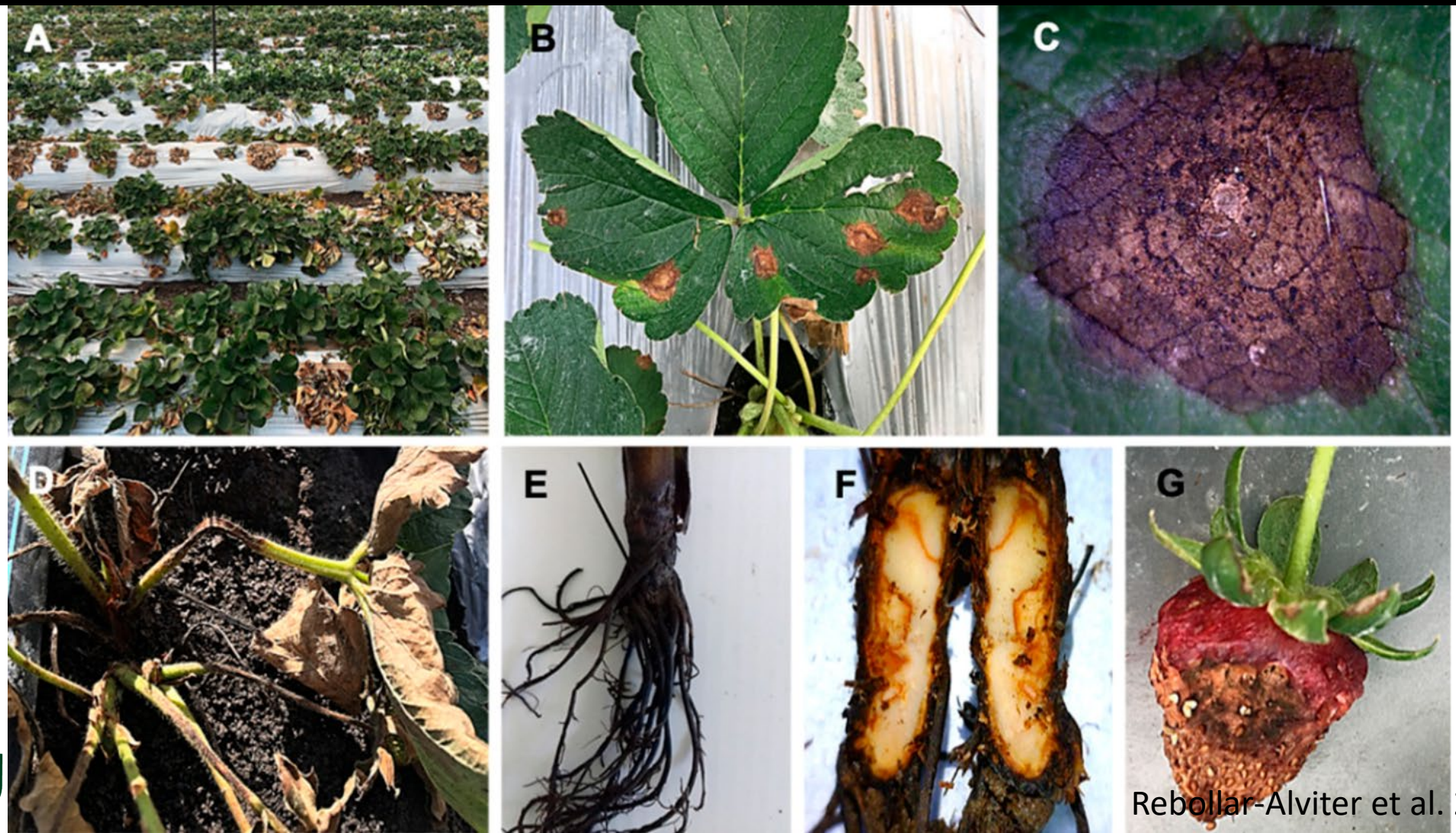
Symptoms of Fruit rot, Stunting and Leaf Spot- New *Neopestalotiopsis sp.* in Florida

Baggio et al. 2021

New *Neospestalotiopsis* sp. Culture



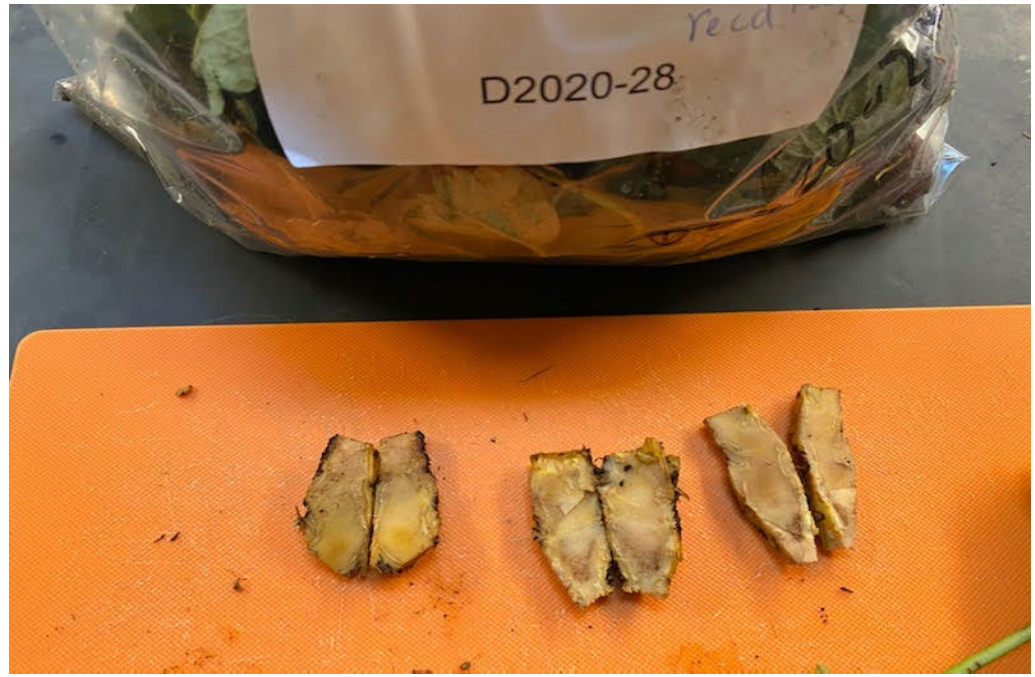
Symptoms of Root Rot, Crown Rot, and Leaf Spot- *Neopestalotiopsis rosae* in Mexico



Rebollar-Alviter et al. 2020

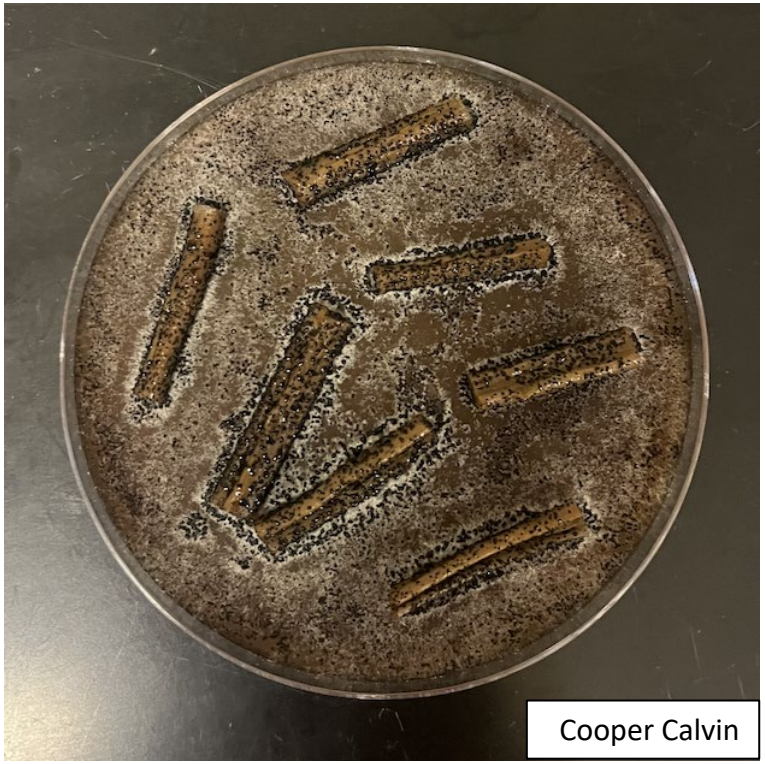
Neopestalotiopsis rosae and *Colletotruchum acutatum* co-infection

Symptoms of the disease



Crown discoloration

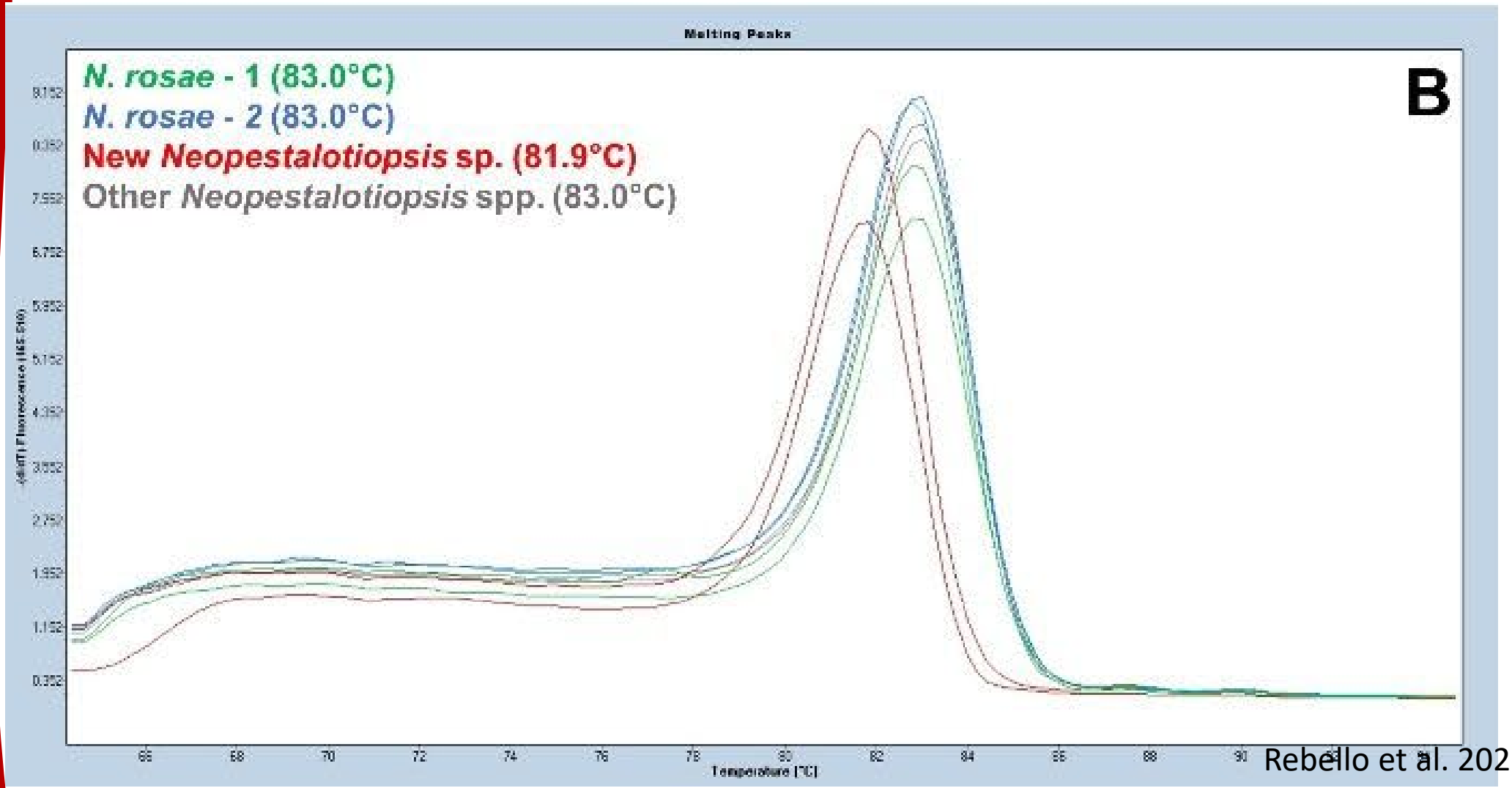
Neopestalotiopsis rosae Culture



Culture on Potato Dextrose Agar

Conidia

Diagnosing New *Neopestalotiopsis* sp. vs Other *Neopestalotiopsis* spp.



Rebello et al. 2022

Cal Poly Studies So Far

- Koch postulate experiments-Ongoing
- All *Neopestalotiopsis rosae* isolates (Grower samples and cultivar trial samples)
- Hoophouse experiments
  - Trial 1 (Monterey, Proprietary cultivars, Sweet Ann)
    - Sweet Ann-19 % mortality
    - Proprietary-6 % mortality
  - Trial 2 (Monterey and Albion)
    - Inconclusive
- Grow tent experiments
  - Trial 1 (Monterey, Albion)
    - Ongoing

Elias Barriga-Hernandez
BS Student (Alum)

Cooper Calvin
(MS Student)

Susceptible Cultivars

CA Cultivars	FL Cultivars
Fronteras	Treasure
Victor	Sweet Charlie
Warrior	Florida Medallion
	Sensation
	Florida Brilliance
	Florida Radiance
	Florida Beauty
	Winterstar™

Rebello et al. 2022

Fungicides

- No fungicides have been registered so far
- Effective fungicides based on FL studies (Baggio et al. 2022)
  - Single-site: fludioxonil, fluazinam, the sterol de-methylation inhibitors (DMIs)
  - Multi-site: captan, thiram, and chlorothalonil
- Ineffective fungicides based on FL studies
  - FRAC 1 and 7 except benzovindiflupyr
  - Resistance to FRAC 11

Acknowledgement

- **Funding**
  - California Strawberry Commission
- **Technical support**
  - Vivian Longacre
  - Cal Poly undergraduate students
    - Allison Hysell, Aidan Inoue, Celeste Chavez, Gabriela Torres, Guillermo Rodriguez, Joseph Ramirez, Kaela Higgins, Karina Xi-Mei Li, Lydia Tavoletti, Stephen Pryor

CALIFORNIA STRAWBERRY™ COMMISSION

Polling Question

1. New *Neopestalotiopsis* sp. can be identified,
   a) Only with field observations
   b) With an ImmunoStrip® test
   c) Field observation and a DNA test