2025 Coastal Vegetable Disease Update

Yu-Chen Wang
Plant Pathology Advisor, UC Cooperative Extension
Monterey, Santa Cruz, and San Benito Counties

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Confidential disease diagnostic service- plant tissues

- Supported by California Leafy Greens Research Board
- UCCE Monterey office
- 1432 Abbott Street, Salinas, CA

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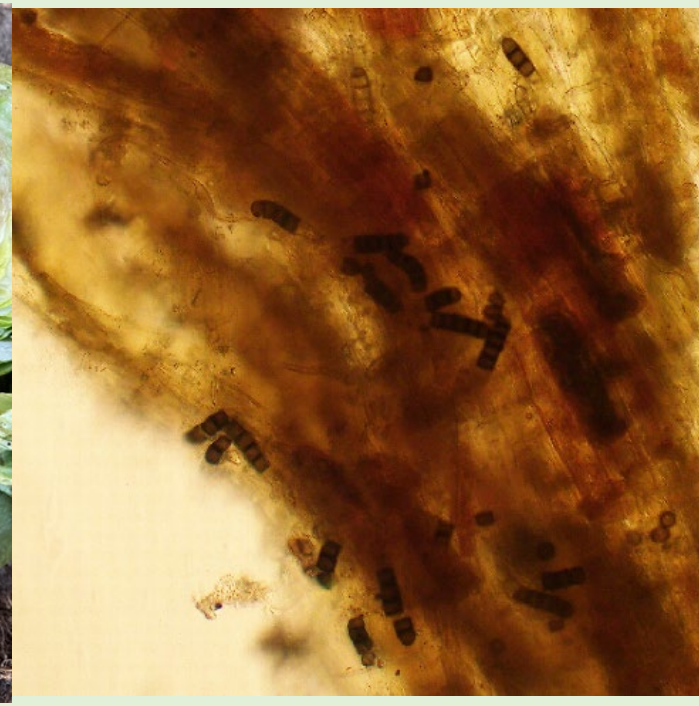
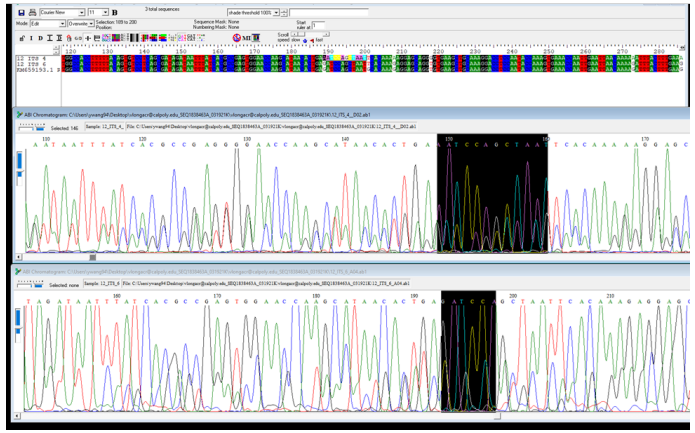
RESEARCH BOARD

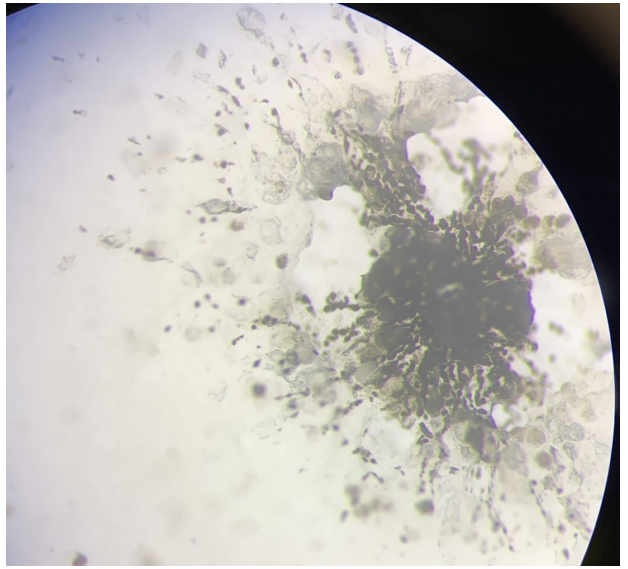


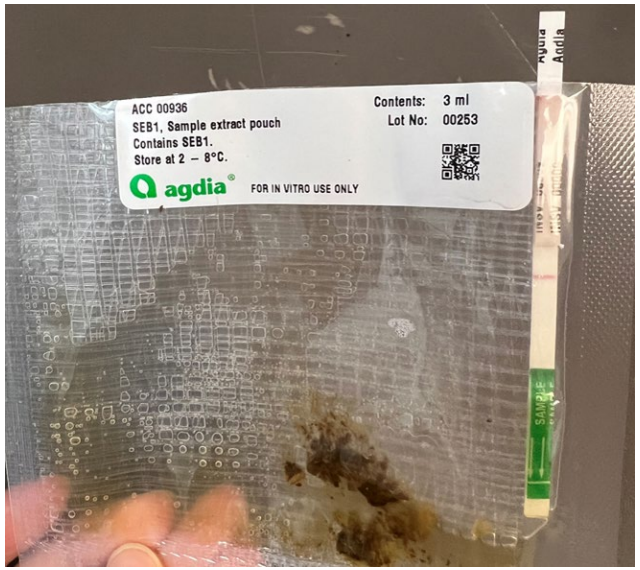



Current service

- Standard plating for bacterial and fungal pathogens
  - Morphology based identification
  - Assisted with Sanger Sequencing and Taqman assays (Fusarium wilt race 1)
- Agdia Immunostrips for viral pathogens
- Turn around time: 2 weeks



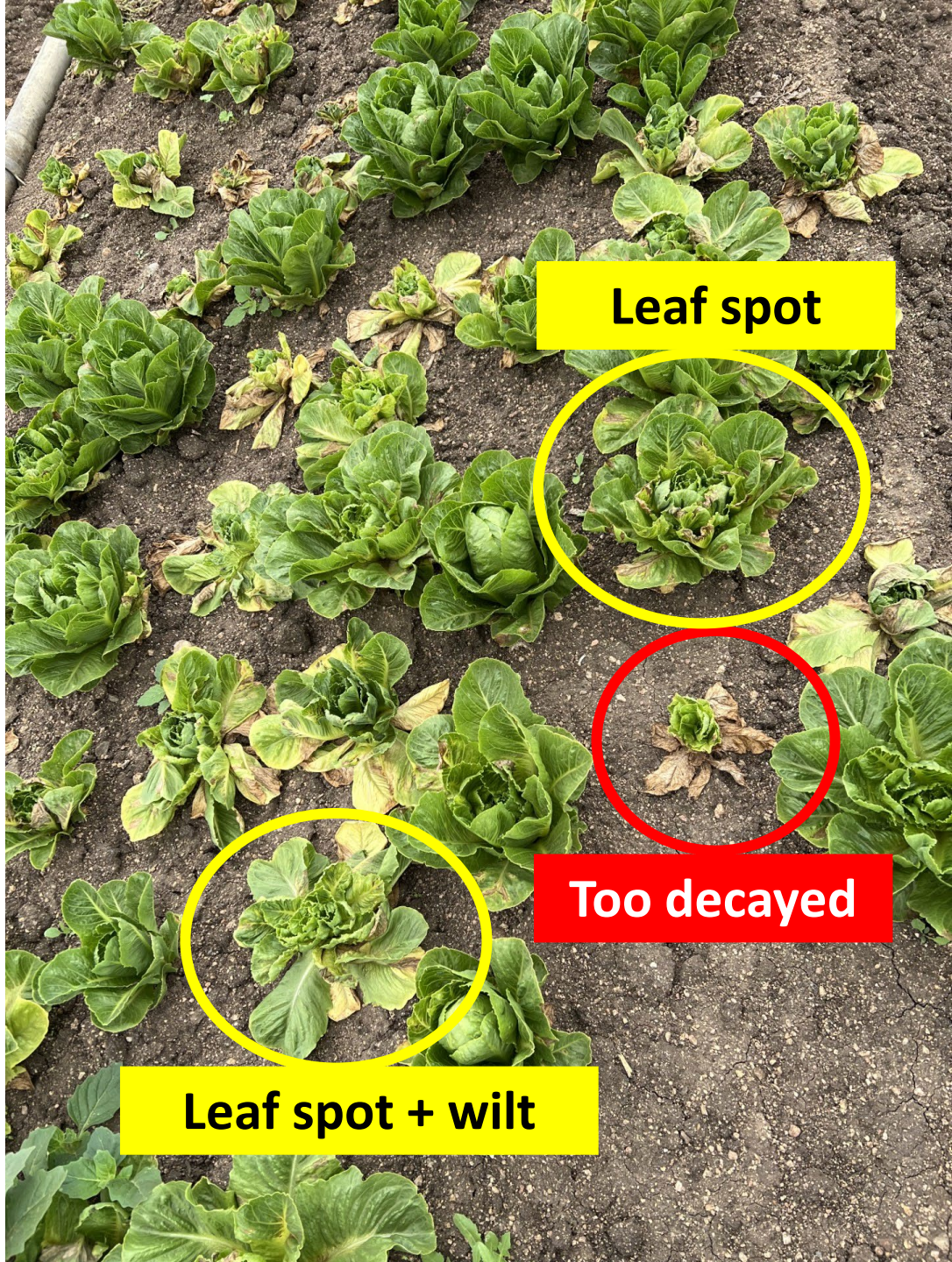




Collecting a sample for disease diagnostics

- How to collect samples?
  - 4-5 plants
  - Progression of symptoms (mild to severe)
  - No complete dead plants

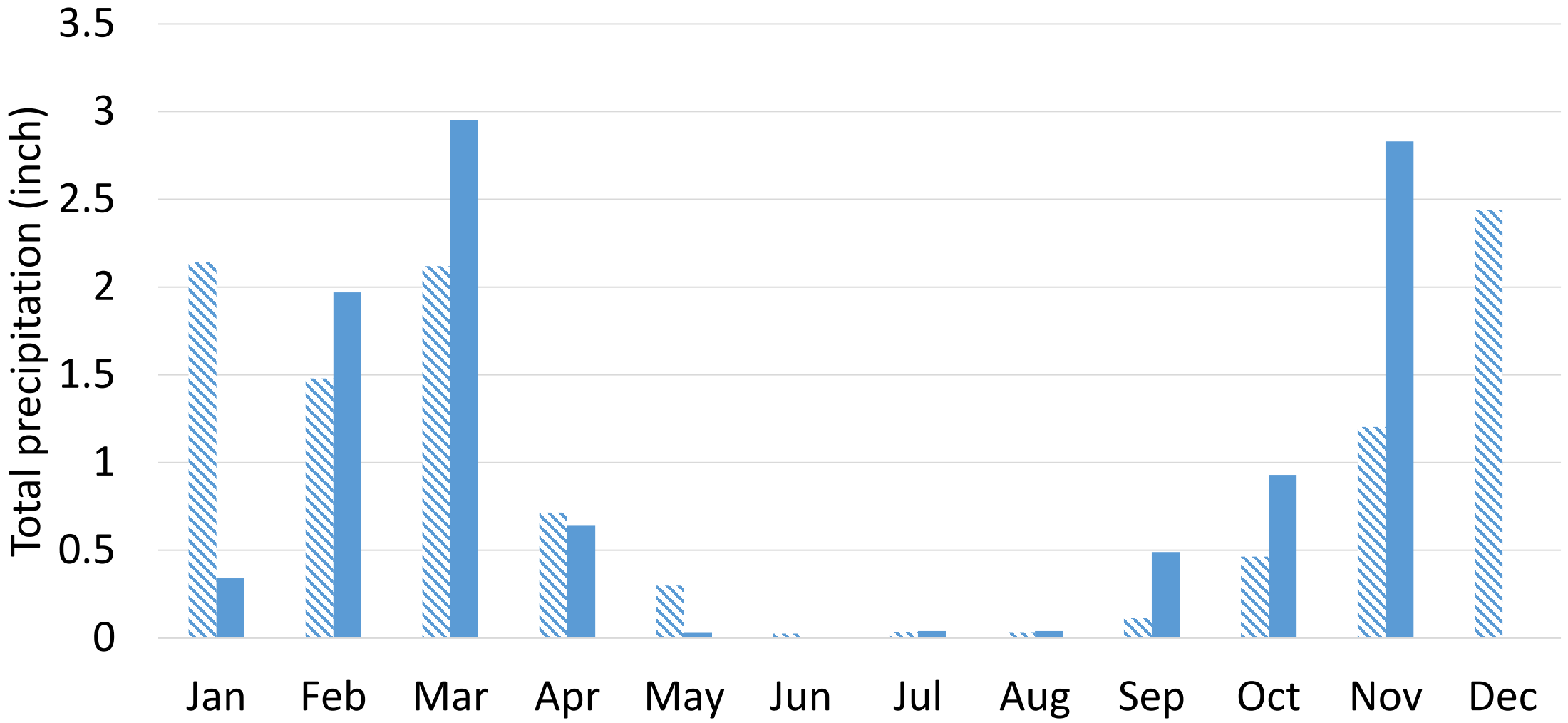
  - Plant collapse issues: collect the entire plant (including the root)
  - Collect pests if you see any



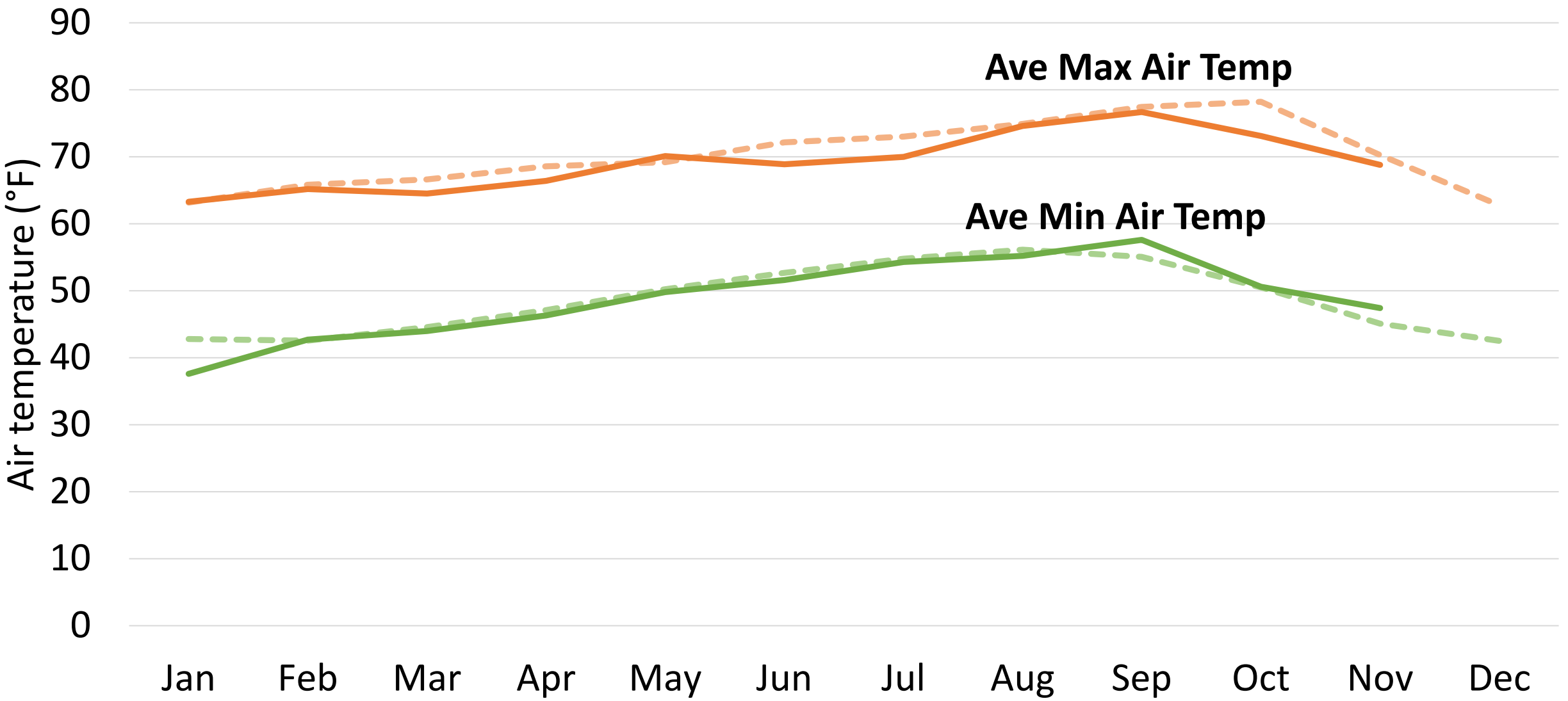
Outline

- 2025 season overview (weather, disease)
- 2025 Lettuce INSV and Pythium wilt variety trial updates
- Celery late blight organic management

2025 weather (solid bars) vs 10-year average (dashed bars)



2025 weather (solid lines) vs 10-year average (dashed lines)



2025 season overview (compared to 10 yrs average)

Winter	Dry and cold	
Spring	Wet	
Summer	Mild (Almost no heat wave)	Lettuce Sclerotinia and Botrytis Less lettuce Fusarium wilt
Fall	Mild and wet (Almost no heat wave)	Cole crop pin rot Lettuce bacterial leaf spot Lettuce INSV and Pythium wilt

2025 Lettuce INSV/ Pythium wilt variety trials

- Collaborators: Kelley Richardson, JP Dondure-Arias
- 11 seed companies

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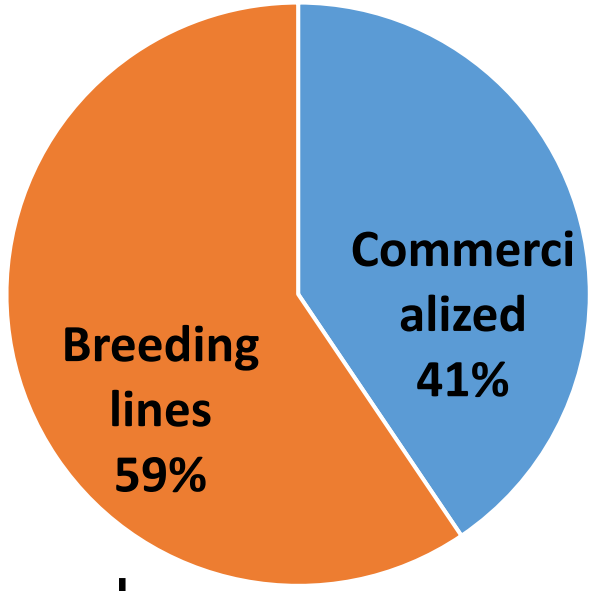
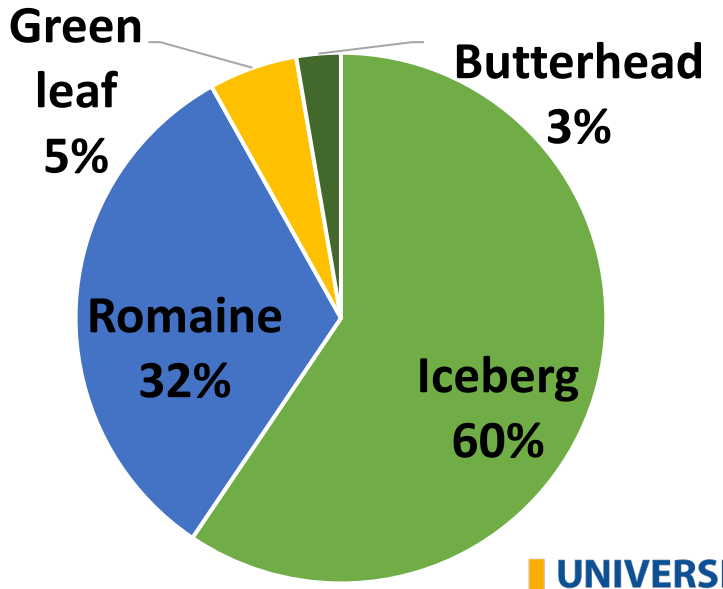
Methods

- 37 varieties
  - 15 commercialized, 22 breeding lines
- 4 types
  - 22 iceberg, 12 romaine, 2 green leaf, 1 butterhead
- 2 trials (fall harvest)
  - Gonzales: 16 varieties
  - USDA Spence: 37 varieties





Trial 1

- Gonzales
- 16 varieties
- Replicate 4 times
- Plot: 25’x 80”; 2 seedlines per variety
- Pythium wilt field visual evaluation conducted by Wang; lab confirmation will be conducted by JP Dundore-Arias
- INSV evaluation will be conducted by Kelley Richardson

W0	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10
08/16 wet day							Base count	Weekly visual evaluation Lab test (1 rep)		

Pythium wilt field visual evaluation

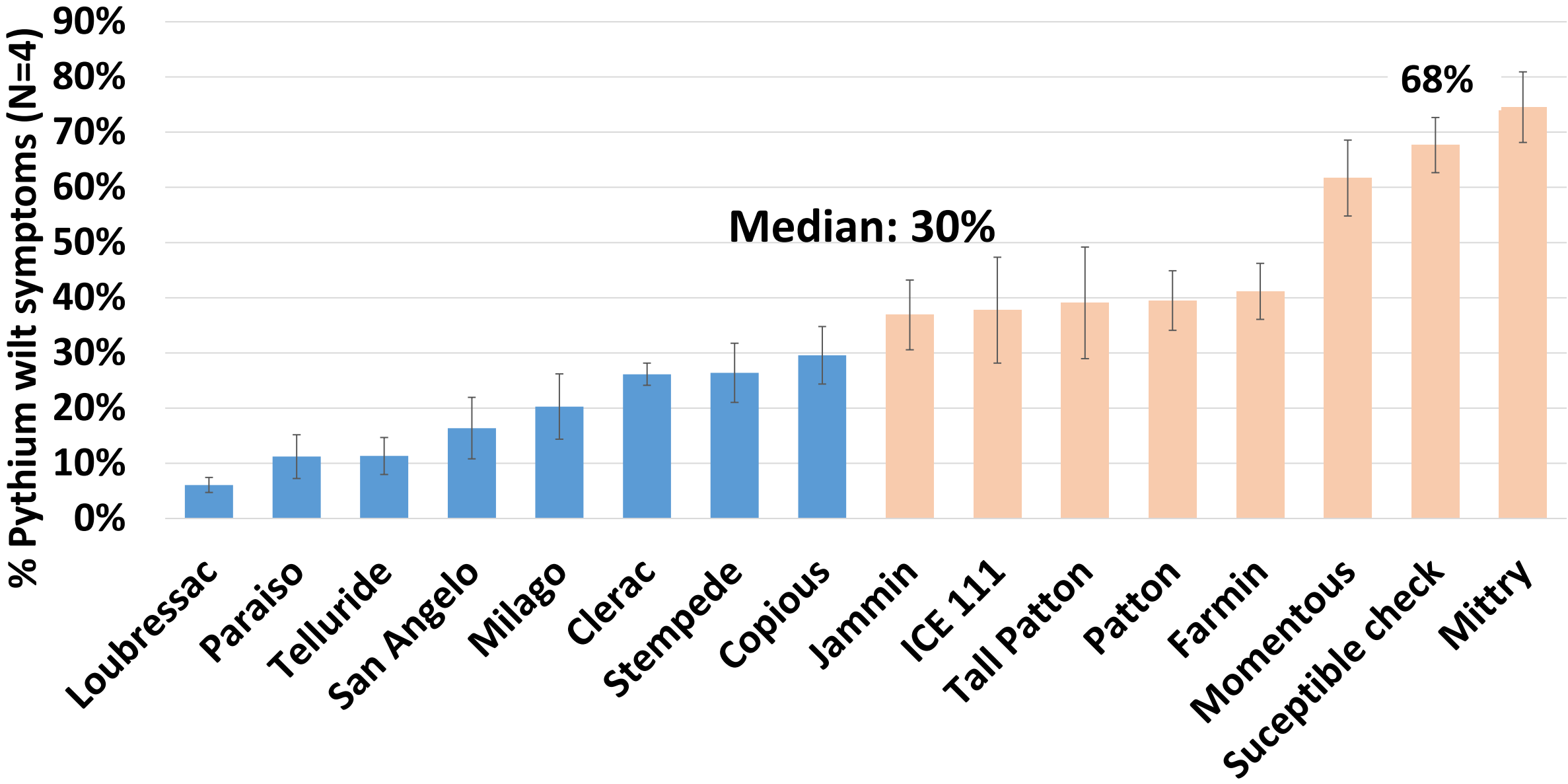
Outer leaves yellowing
Plant collapse

Fine root, taproot- root rot
Soft rot; water-soaked lesion

Pythium wilt visual evaluation

Sclerotinia (Lettuce drop) was presented in this field.

Week 10 results (16 varieties)

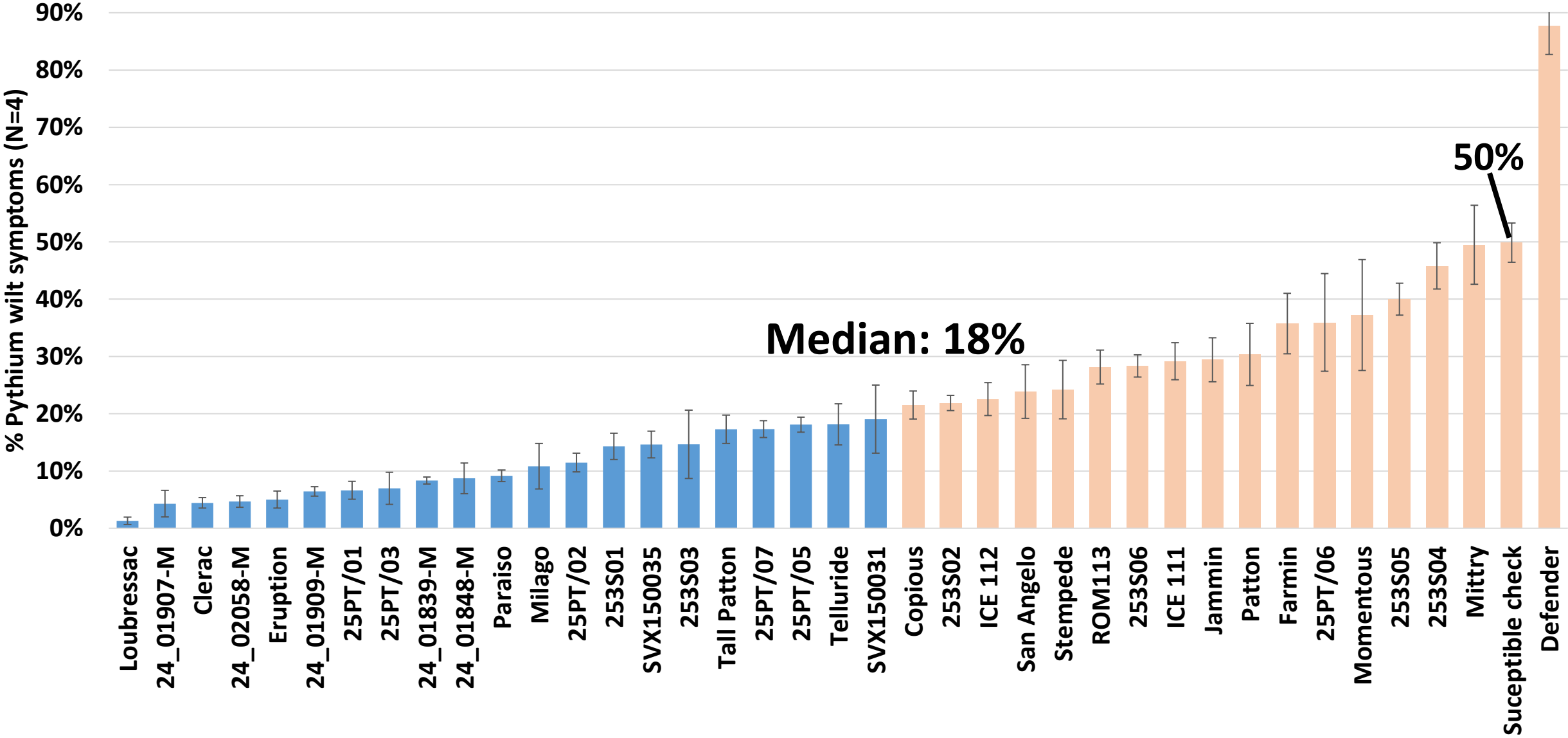


Trial 2

- USDA Spence research station
- 37 varieties
- Replicate 3 times
- Plot: 25’ x 40”; 2 seedlines
- Pythium wilt field evaluation conducted by Wang; lab confirmation will be conducted by JP Dundore-Arias
- INSV evaluation will be conducted by Kelley Richardson

W0	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10
08/26 wet day							Base count	Weekly visual evaluation Lab test (1 rep)		

Week 10 results (37 varieties)

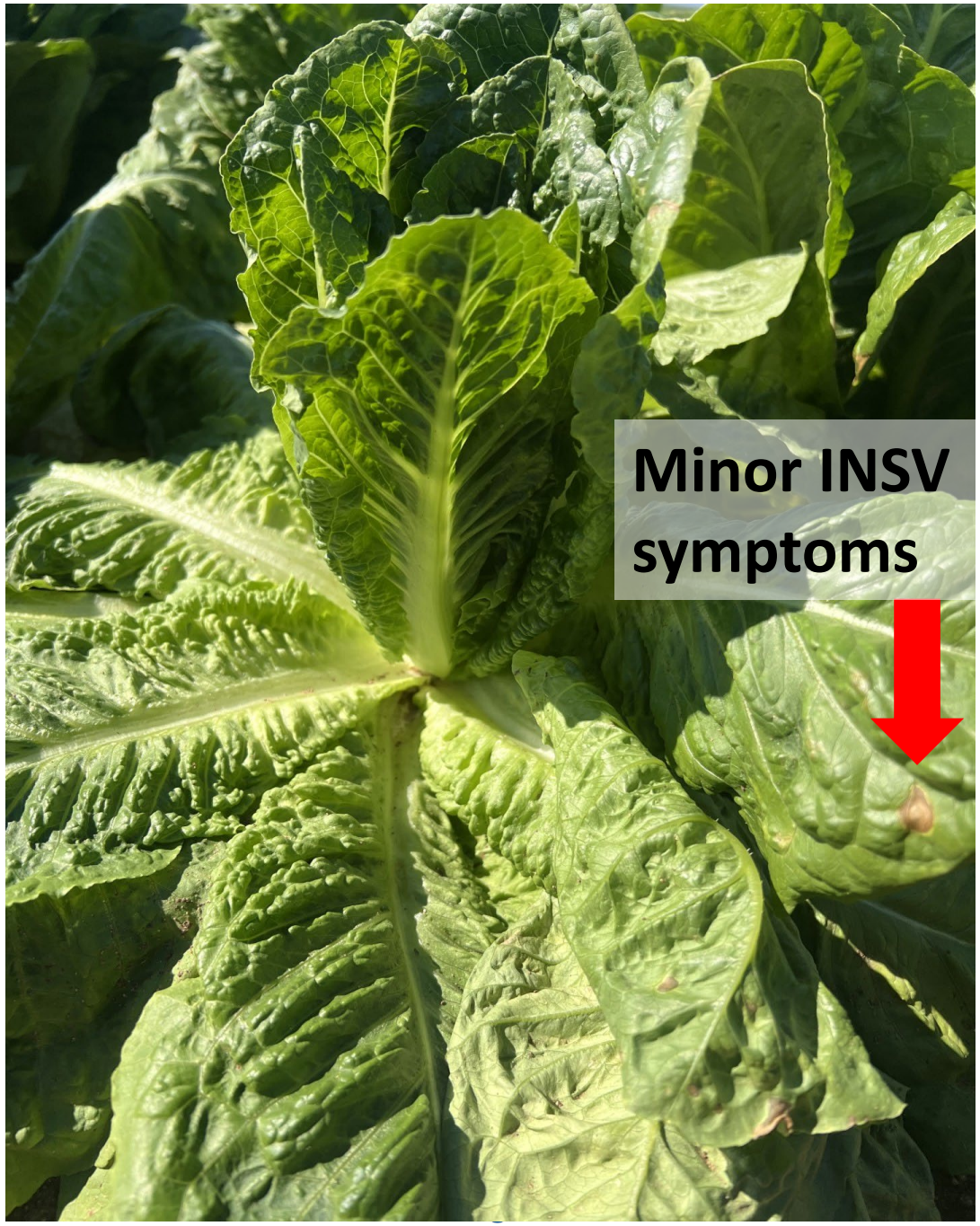


Conclusions

- Under high disease pressure (Trial 1), the varieties with the lowest Pythium wilt incidence (%) are:
  - Romaine: Stampede (26%), Copious (30%)
  - Iceberg: Paraiso (11%), Telluride (11%), San Angelo (16%)
  - Other: Loubressac (6%), Milago (20%), Clerac (26%)
- No complete resistance is observed.
- Pythium wilt disease incidence increased largely (56% to 68%) from week 9 to week 10. Early harvest might ensure yield and quality.
- Consider INSV/Pythium wilt tolerant variety for late summer/fall plantings.

Will Pythium wilt potentially interfere with the performance of INSV tolerance?

- Root positive for INSV and Pythium wilt



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- Celery late blight organic management

Celery late blight

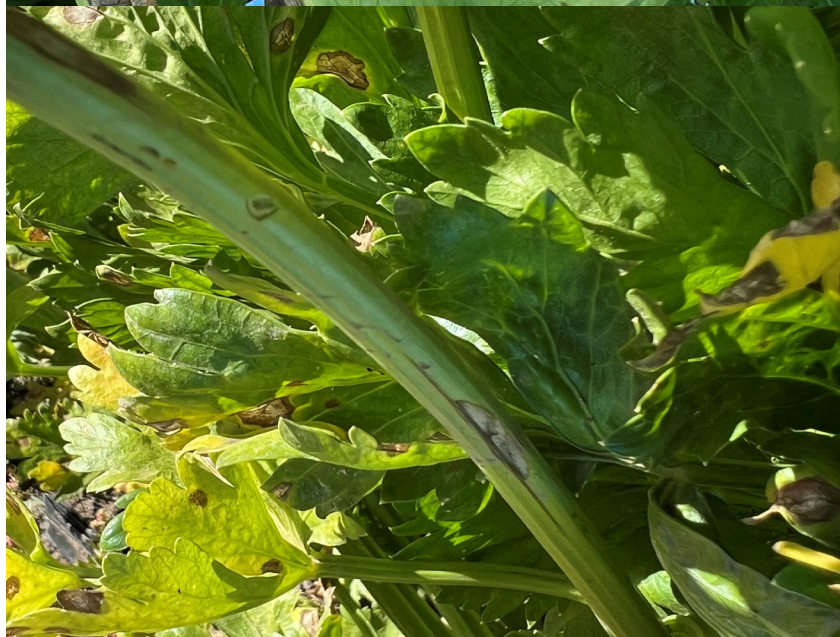
- Fungal disease, Septoria leaf blight
- Small, chlorotic spots
- Small, black round structures in the center
- Merge to blight on leaf and petiole
- Older tissues are infected first

- Late blight ≠ late blight of tomato and potato caused by *Phytophthora infestans*

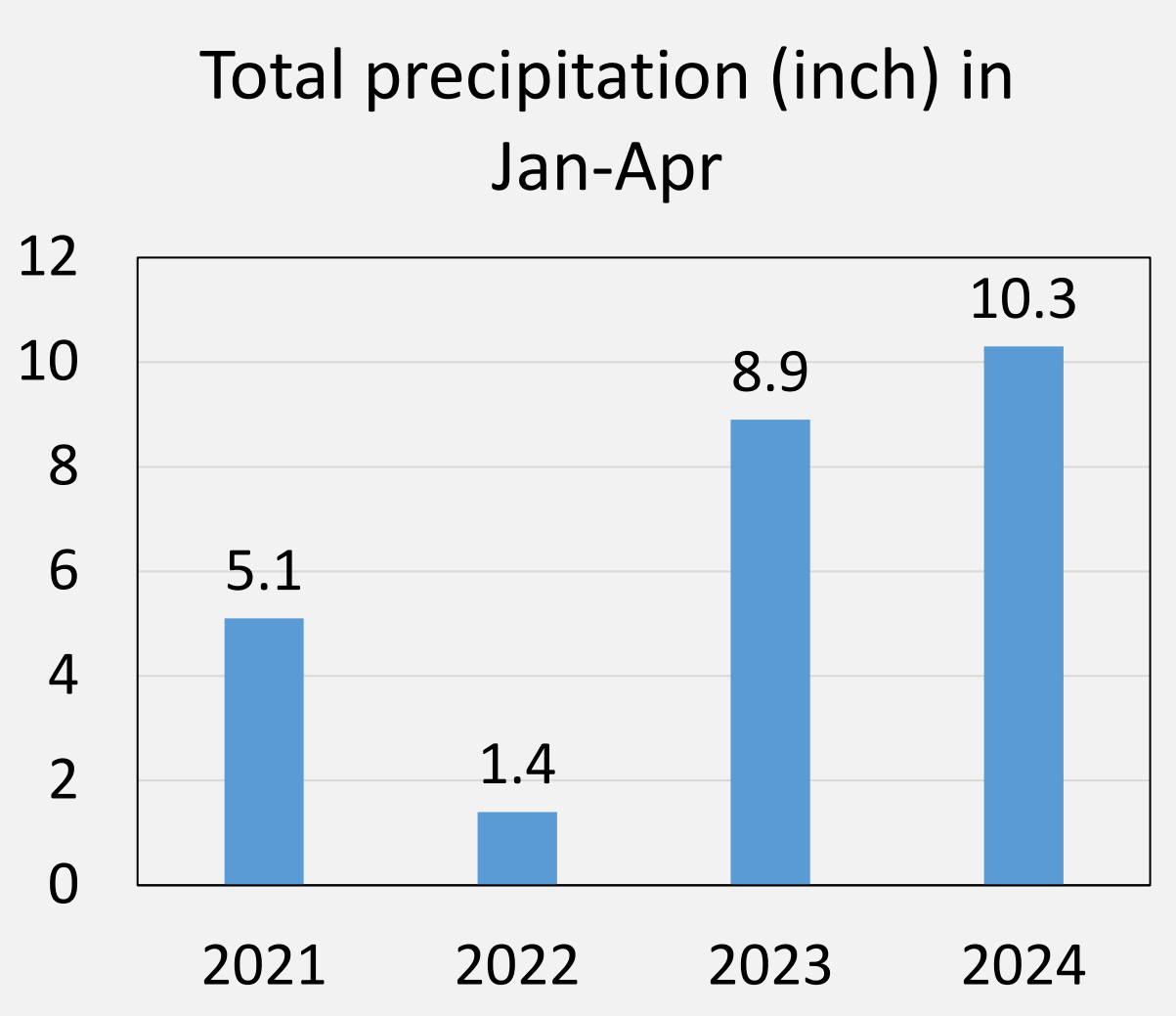
Celery early blight is less common

- Fungal disease, Cercospora blight
- Small flecks enlarge to brownish gray spots
- Merge to blight on leaf and petiole
- Older tissues are infected first

- Early blight ≠ early blight of tomato and potato caused by *Alternaria spp.*



Wet winter and spring of 2023 & 2024



Weather data: South Salinas (CIMIS #142)

Research on celery late blight organic management

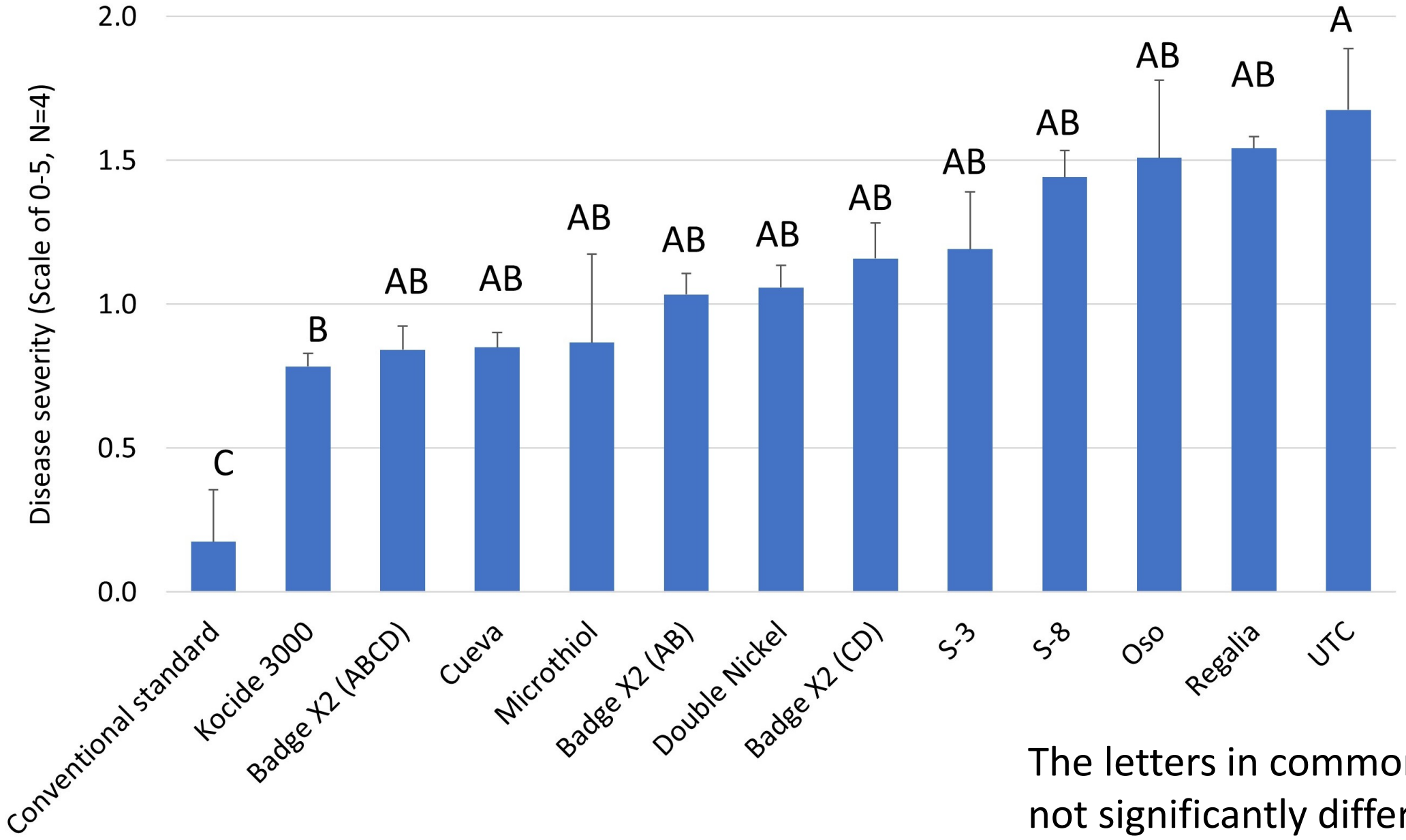
- Collaborators: Renee Eriksen (PI), Chris Greer, Alex Putman
- Variety trial: 14 varieties; 9 breeding materials
- Organic fungicide efficacy trial: 13 treatments, 9 products

2025 Organic fungicide efficacy trial

- Celery ‘Sonora’ were transplanted on May 01
- Plot size: 20 ft*40 inch, untreated row on each side, 4 reps
- Inoculation on July 03
- Four fungicide applications
  - Biweekly: June 10, June 26, July 10, and July 24
  - CO_2 backpack sprayer
  - Double TeeJet 8004E flat fan nozzles
  - 30 psi
  - 35 gpa

Product and rate/A	Active ingredient	OMRI listed	Application timing[z]
Untreated control	-	-	-
Conventional standard Tilt (4 floz/acre) Bravo Weather Stick (3 pt/acre)	Propiconazole Chlorothalonil	No	AC BD
Badge X2 (3.57 lb/acre)	Copper oxychloride	Yes	ABCD
Badge X2 (3.57 lb/acre)	Copper oxychloride	Yes	AB
Badge X2 (3.57 lb/acre)	Copper oxychloride	Yes	CD
Cueva (2 gal/acre)	Copper octanoate	Yes	ABCD
Microthiol (6 lb/acre)	Sulfur	Yes	ABCD
Experimental: S-3	Lipopeptide	-	ABCD
Experimental: S-8	Lipopeptide	-	ABCD
Kocide 3000 (1.5 lb/acre)	Copper hydroxide	Yes	ABCD
Oso 5% (13 floz/acre)	Polyoxin D zinc salt	Yes	ABCD
Regalia (3 pt/acre)	*Reynoutria sachalinensis* plant extract	Yes	ABCD
Double Nickel (6 qt/acre)	*Bacillus amyloliquefaciens*	Yes	ABCD

Disease severity rating on July 28 (88 days post planting)



The letters in common are not significantly different.

Celery late blight management

- Apply protectant fungicides
- Crop rotation: no celery for more than 1 year
- Use pathogen-free seeds or transplants
- Avoid overhead sprinkler irrigation
- Limit the movement of equipment or workers
- Plant disease-tolerant varieties

Variety trial update? Subscribe to Salinas Valley Agriculture Blog

Article

Research update on organic fungicide evaluation for management of celery late blight

September 25, 2025

Print

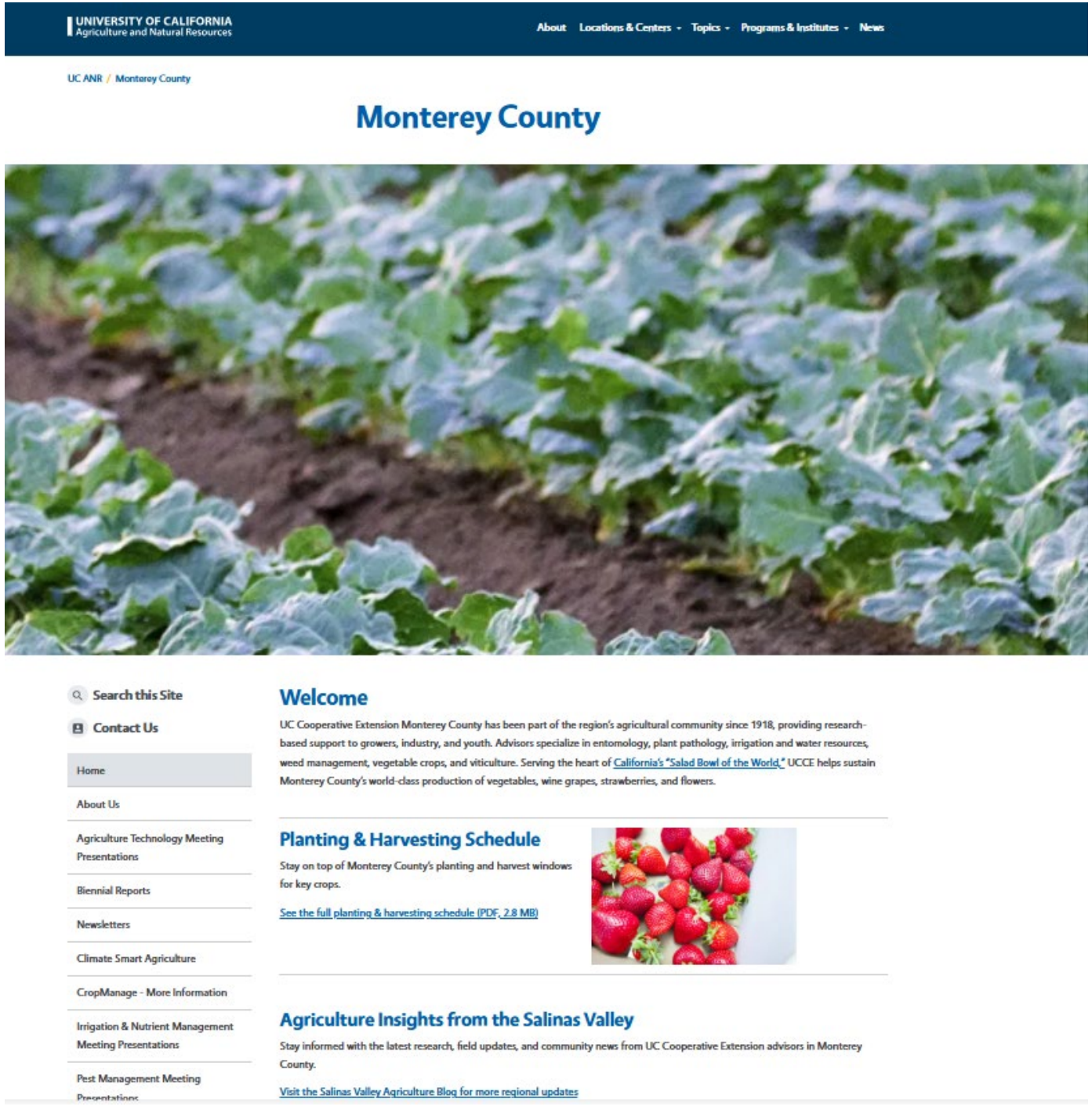
Research update on organic fungicide evaluation for management of celery late blight

Yu-Chen Wang, Renée L. Eriksen, Chris Greer, and Alex Putman

Celery late blight can cause significant problems during the fall and spring production period in the Salinas and Santa Maria Valleys. The disease is caused by the fungus, *Septoria apiicola*. Early disease symptoms include small, irregularly shaped, chlorotic spots on the leaves and petioles. Older leaves and stalks are usually infected first. As the disease progresses, the lesions enlarge, later merge to blight large areas of tissue, leading to plant death (Photo 1). A characteristic feature of these lesions is the small, black round structures in the center (Photo 2). These structures are the reproductive bodies of the fungus, and the size and color are similar to black pepper.

Trial reports are also posted on the county website

- Plant Pathology
  - Bulletins
  - Fungicide Efficacy Trial Reports
  - Variety Trial Reports
  - Pest Management Meeting Presentations
  - Diagnostic Service



Acknowledgments

- California Leafy Greens Research Board
- University of California Cooperative Extension

  Jack Koster, Daisy Benavides

- **Additional thanks to growers, PCAs, and other industry professionals!**

Thank you!
Any questions?

Yu-Chen Wang

yckwang@ucanr.edu

831-201-9689

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