

2024 Update on Pecan Disease Management

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Outline

- Root knot nematode
- Pecan bacterial leaf scorch
- Pecan leaf dieback
- Pecan scab
 - fungicides and how best to apply them

Pecan Root Knot Nematode



- All over Georgia, worst in sandy soils
- Damage most severe on young trees
- Standard soil sample to UGA lab or dig roots
- No resistant root stocks, but some nematicides

You can dig an infected tree and replant, **BUT, how do you deal with the nematodes in the soil?**



Nematicide Options for Pecans

Fumigants (custom applied, Tri-Est in Tifton)

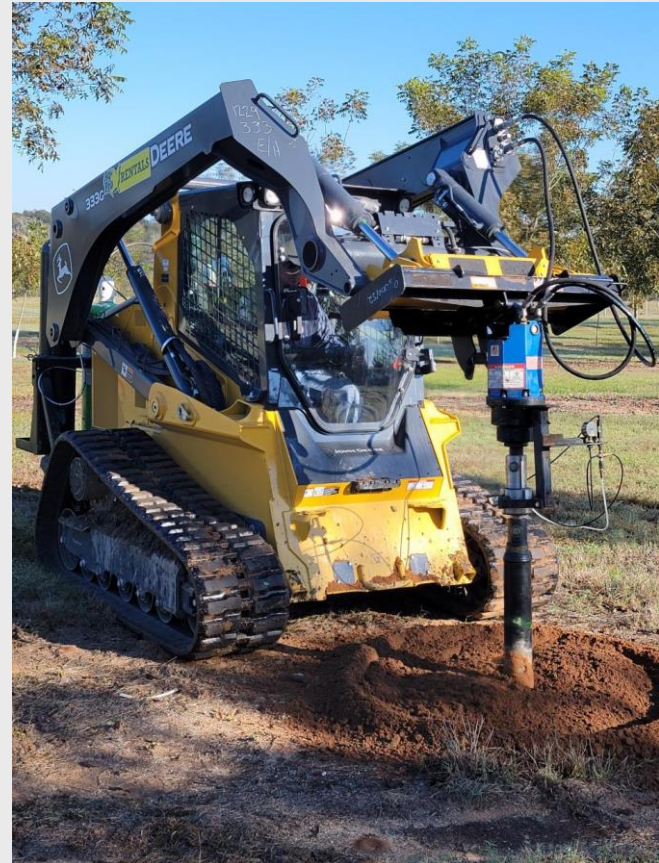
1. Telone

(1,3-Dichloropropene)

2. Telone C-35

(1,3-Dichloropropene +
chloropicrin)

Must be applied in the fall before planting



Nematicide Options for Pecans

Nonfumigants (do it yourself)

1. Velum (Bayer)
2. Nimitz (Adama)
3. Salibro (Corteva, nonbearing trees)
4. Movento (Bayer, also an insecticide and is applied to foliage)

Trt 1-3 applied in the transplant water, or drenched after planting, or injected in the irrigation water

Perfect time to apply a treatment
deep to both roots and soil



Treated vs Untreated Trees, Summer 2023



Bacterial Leaf scorch (*Xylella*) vs Leaf Dieback (*Neofusicoccum*) (Why does it matter?)



Severe “whole tree” symptoms vs mostly healthy Byrd trees



Foliage in regrowth was positive for *Xylella*, lower tree was negative



Do I need to quit hedging?

NO, unless you have a highly susceptible cv. like Byrd or Cape Fear AND have *Xylella* already in your orchard (more work to be done on this!)

Effects of hedging on scab



Pros

- Smaller trees w/ better air flow and **spray coverage** (**hard to spray trees over 40 ft tall**)
- Removes scab in the wood

Cons

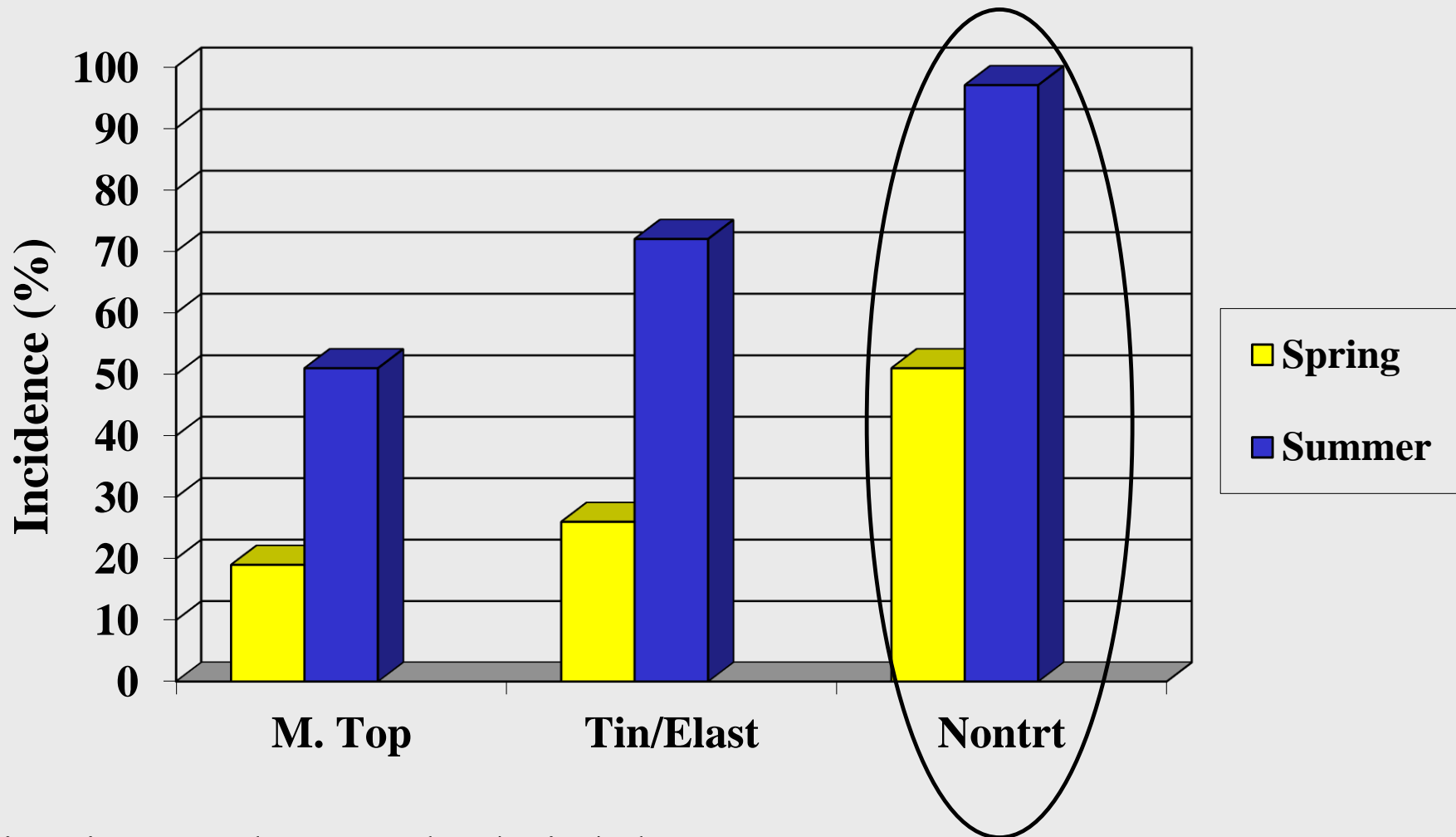
- **Continual growth flushes** are a challenge, always w/ susceptible leaves and stems

Mid season growth flushes w/
leaf die back (L) and scab



Scab on Spring (1st flush) vs Summer (2nd flush) leaves, 2023 (Wichita)

(Rated July 24)



Miravis Top alternated w/ Tin/Elast

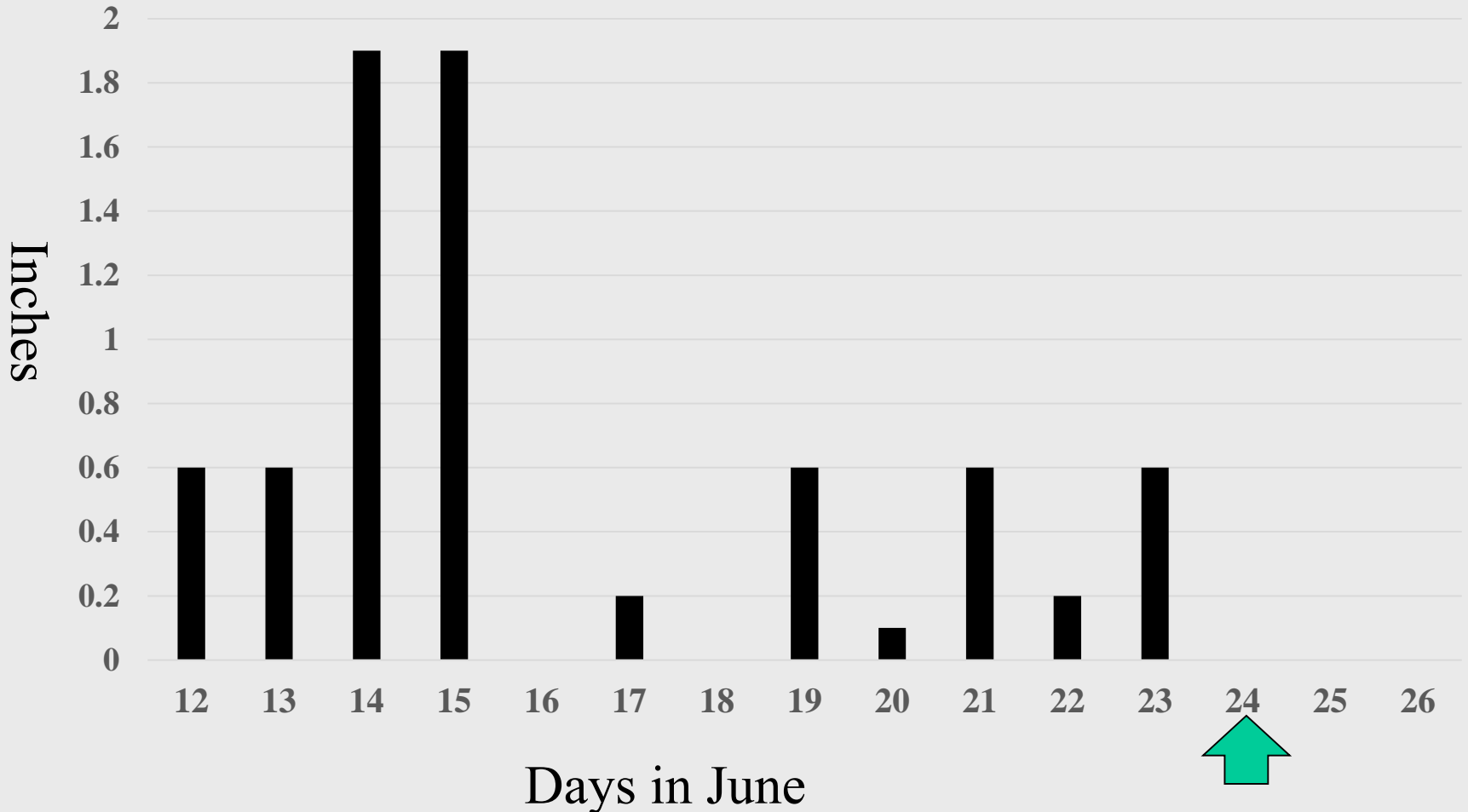
Last half of June was critical for scab control in 2023

- Enough rain for early scab to produce inoculum
- Growth flushes and expanding nuts were very susceptible
- Heavy rain and consecutive days of rain made it difficult to spray, and often washed off recent applications
- Nut scab this early is very bad news!

Rainfall at Ponder Farm

Ty Ty, GA

June 12 – 26, 2023



Unsprayed until 24th

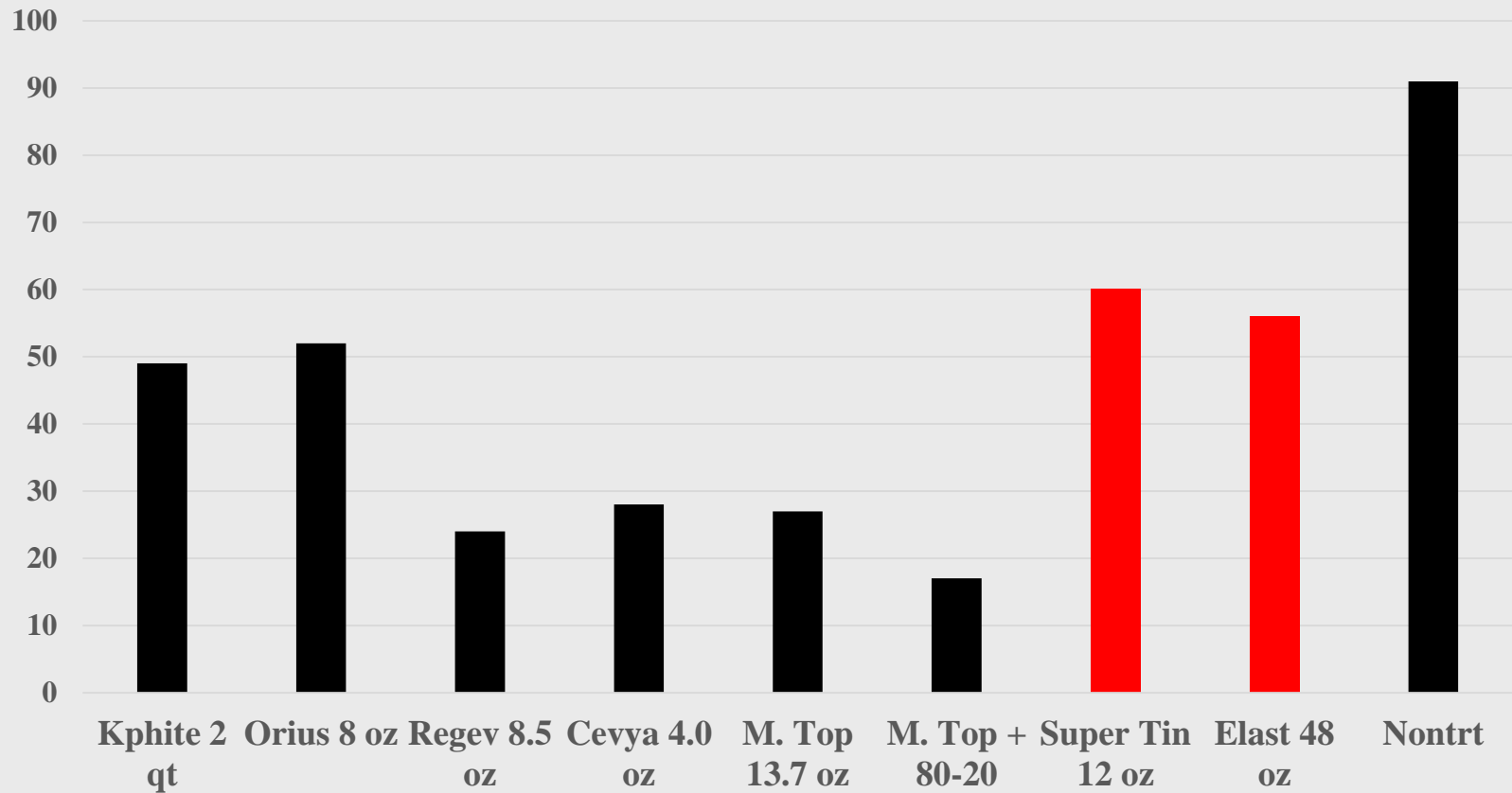
Impromptu Trial was Born!



- Flagged terminals on unsprayed trees w/ growth flushes and no visible scab
- Sprayed each to runoff.
- Replicated treatments 8 times.
- Evaluated them for scab about a month later

Post-infection activity of fungicides on leaf scab

(Desirable, July 18 2023)



Trt in red are protectants

Result?

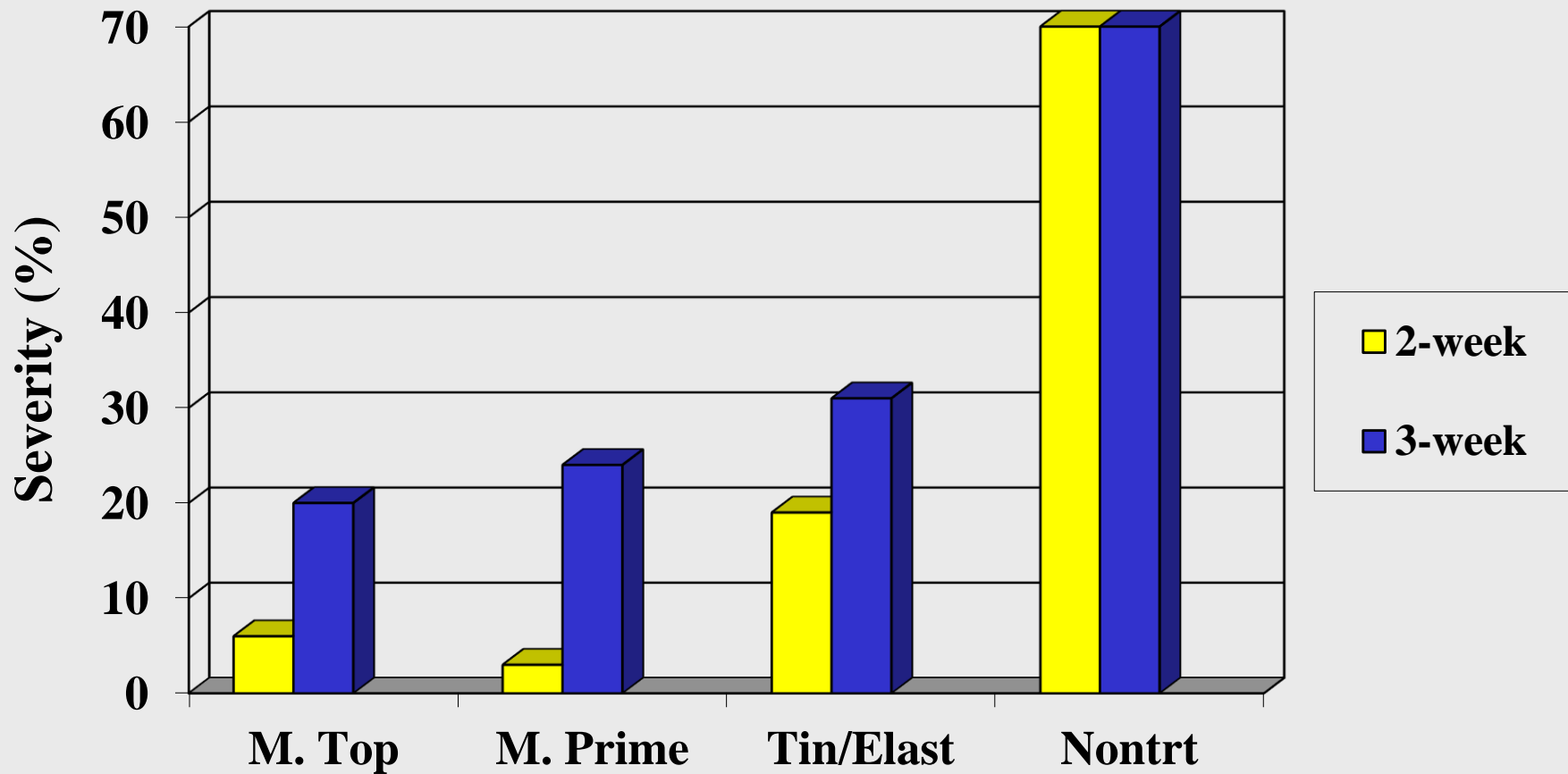
- Acid post-infection spray test (spores had germinated and entered the leaf prior to spraying, but no lesions visible yet)
- Protectants actually had modest activity
- Systemics (except Kphite) were clearly preferred, and surfactant was a plus
- Ideally we do not want to have to do this!!

How did our fungicides perform in 2023?

- For the most part our fungicides did what they were supposed to do
- Very heavy pressure
- Not much room for error, and not a year to stretch intervals on susceptible cultivars



Nut Severity w/ 10 sprays (2-week) vs 7 sprays (3-week) schedule, 2023 (Desirable)



(Miravis Top and Miravis Prime alternated w/ Tin/Elast)

We can save sprays in dry weather, but with frequent rain it's hard to cut rates and stretch intervals. Can we spray more efficiently?



Smart Sprayers

(need enough acres to justify cost)



How much can a smart sprayer save?



What about speed and volume?

(Data from Dr. Clive Bock, USDA)

- Traditionally spray with 100 GPA and travel slowly (≤ 2 MPH) to displace air in the tree
- Current work shows good scab control at 50 GPA and speeds up to 2.5 MPH (possibly higher)
- Studies planned this year on farm to validate faster speeds and lower volumes

What if?

- Smart sprayers become more affordable and we could greatly reduce fungicide costs
- Lower our equipment, fuel and labor costs by spraying w/ 50 vs 100 GPA and/or travelling faster??

Then . .

- We might be able to afford disease control on our more scab susceptible cultivars
- BUT, if current prices and weather patterns persist, we need to transition to more scab resistant cultivars, and also use as many “non chemical” practices as we can to reduce disease pressure and lower production costs
- No “Silver Bullets” coming. We have programs now that will work, but in a wetter year on susceptible varieties can we afford them?

Acknowledgements

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