

Managing Pecan Diseases – A Growing Challenge!

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New Diseases to Control



Reproduce symptoms by
inoculating plants with pathogen

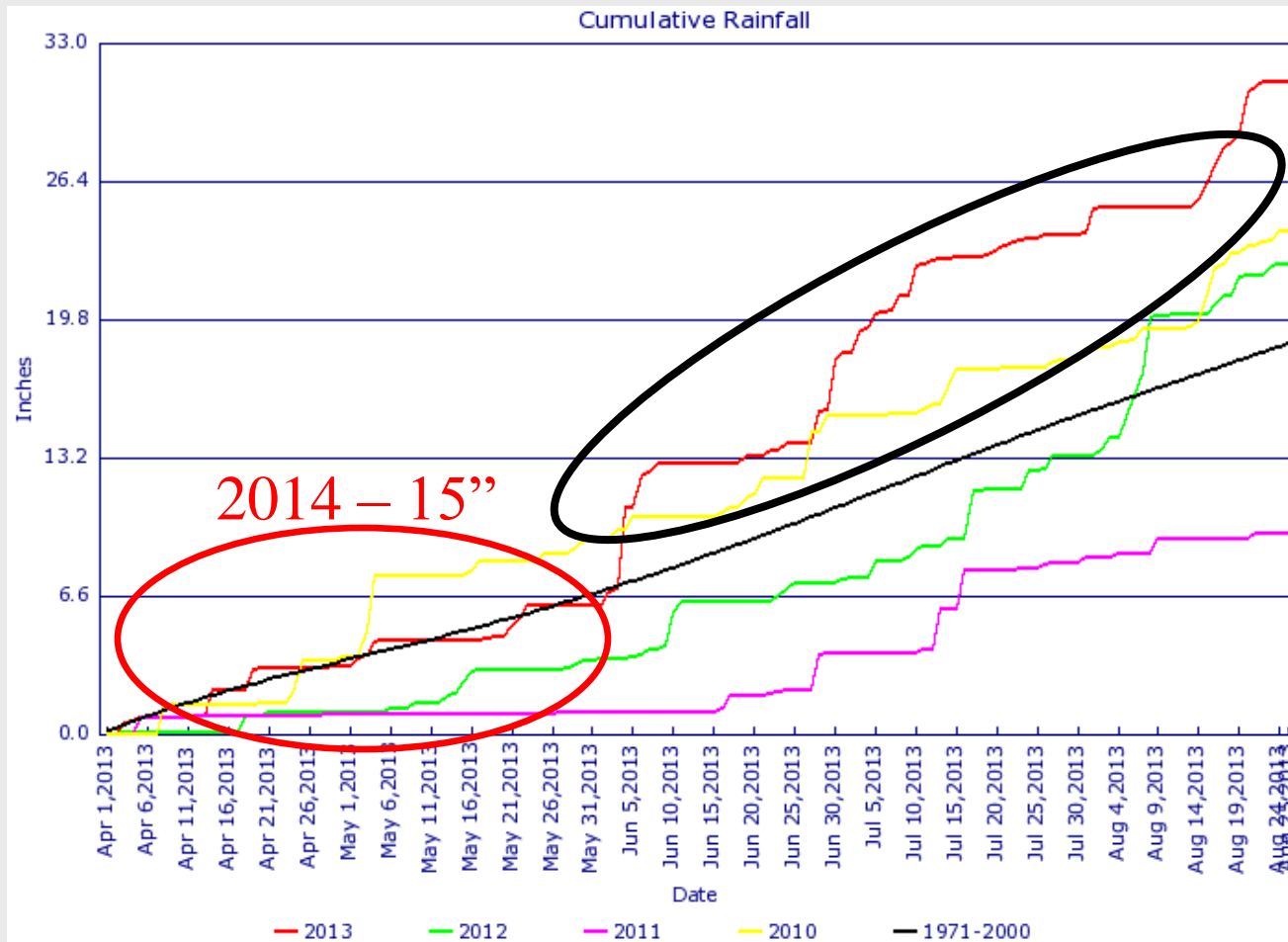


Neofusicoccum sp.

- Widespread in Georgia (some in AL and ?)
- Increased over each of last several years
- More prevalent on scab-susceptible cv's
- Can cause severe defoliation

The Perfect Storm

(Ty Ty, GA April – Aug 2013)



What will 2015 weather bring?

(NOAA says normal for 3 months)



-- Whatever the weather we have a LOT of scab inoculum out there

-- the 2014 wood developed early when it was wet, so lots of lesions, especially in tops of trees

Disease Management Considerations

- **Dormant sprays to reduce inoculum**
- Use our fungicides to their strengths
- Fungicide resistance management
- Plan to reduce disease pressure

What about dormant sprays?

(M.S. project for Kyle Brown)

- Elast (48 fl oz), Lime-sulfur (5 GPA), and Sulforix (1.5 GPA) from Miller Chemical
- Caustic and “burns out” the overwintering inoculum (also caustic to equipment – covering sprayers with diesel and immediate clean up is suggested!)

A photograph of a large orchard with many bare trees in a field. The trees are arranged in rows, and the ground is covered with dry grass and fallen leaves. The sky is clear and blue. The text is overlaid at the bottom of the image.

Applied as true dormant sprays in large, replicated blocks in grower orchards

Dormant Spray Summary

- Disease reductions observed in some trials in 2014, an ideal year for such treatments
- Conclusion? May help some in years with lots of inoculum. Worth the cost???
- Suggest using Elast (48 oz) late dormant or after bud break; need to spray then anyway
- Trials being repeated this year with additional products

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Generalizations on Fungicides

Protectants (Tin and Elast)

- excellent residual but do not move in plant
- will not “cure” existing infections
- foundation of nut scab sprays

Systemics (Tebuconazole, Abound, Absolute, Phosphites, Orbit, etc.)

- move into leaves and some even from leaf to leaf
- have some “post-infection” activity
- foundation for pre-pollination sprays
(use some for nut scab and “minor” diseases)

Why use systemics early season?



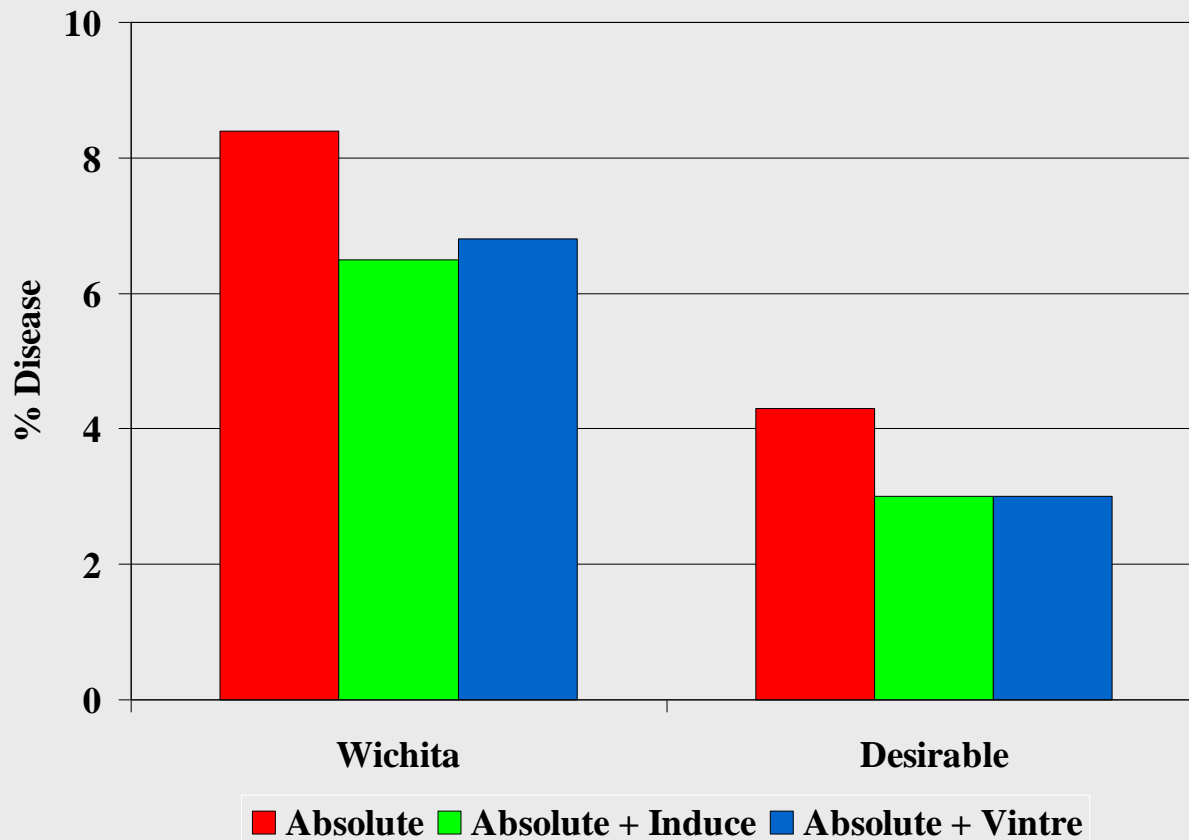
- Up to 90% of shoot growth can occur in the first 30 days after bud break!
- Control with protectants is less consistent; depends on timing of infection periods and applications

Fungicide movement into hedging regrowth?



- In 2014 had lots of scab on leaves and stems in tops of hedged trees
- Similar control in tops w/ systemics and protectants, ie. no “whole tree” movement. Need good coverage in tree tops!

Affects of Adjuvants on Leaf Scab Control with Absolute (5 fl oz/A) 2014 – Tifton



Will spray adjuvants improve my disease control?

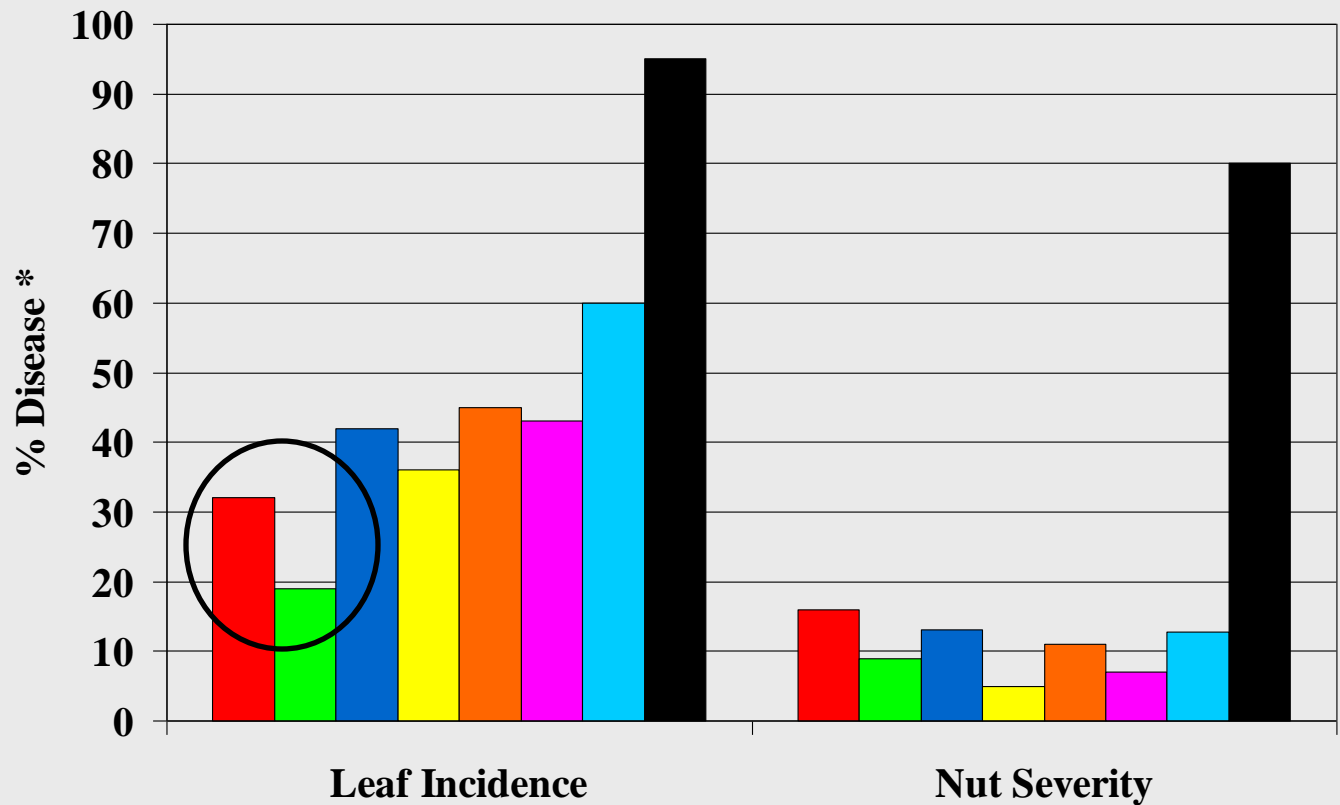
Varies with fungicide – systemics most likely to benefit (Enable, Orbit, tebuconazole, Quilt, Quadris Top, Stratego, Absolute, etc.)

Any quality 80/20 or 90/10 surfactant is OK

Not needed with Tin, Elast or phosphites.

Phosphites and New Products

(Brenneman, 2014, Desirable)



■ Rampart 2 qt ■ Rampart 3 qt ■ Custodia 8.6 oz ■ Custodia 17.2 oz
■ Azaka 12 oz ■ Tin/Elast ■ Ph-D, 6.2 oz ■ Nontreated

Phosphite Summary

(K-Phite, Reliant, Prophyt, Rampart, etc.)

- Have activity on pecan scab and anthracnose; stronger on leaves than nuts
- Highly systemic both up and down in plant
- Different mode of action, ie. resistance management
- Delayed shuck split? Not with 5 app's at 3 quarts/A, and no leaf injury (applied in 100 GPA before shell hardening)
- Potential export issue for tree nuts to Europe starting in 2016 (very recent – more information coming!)

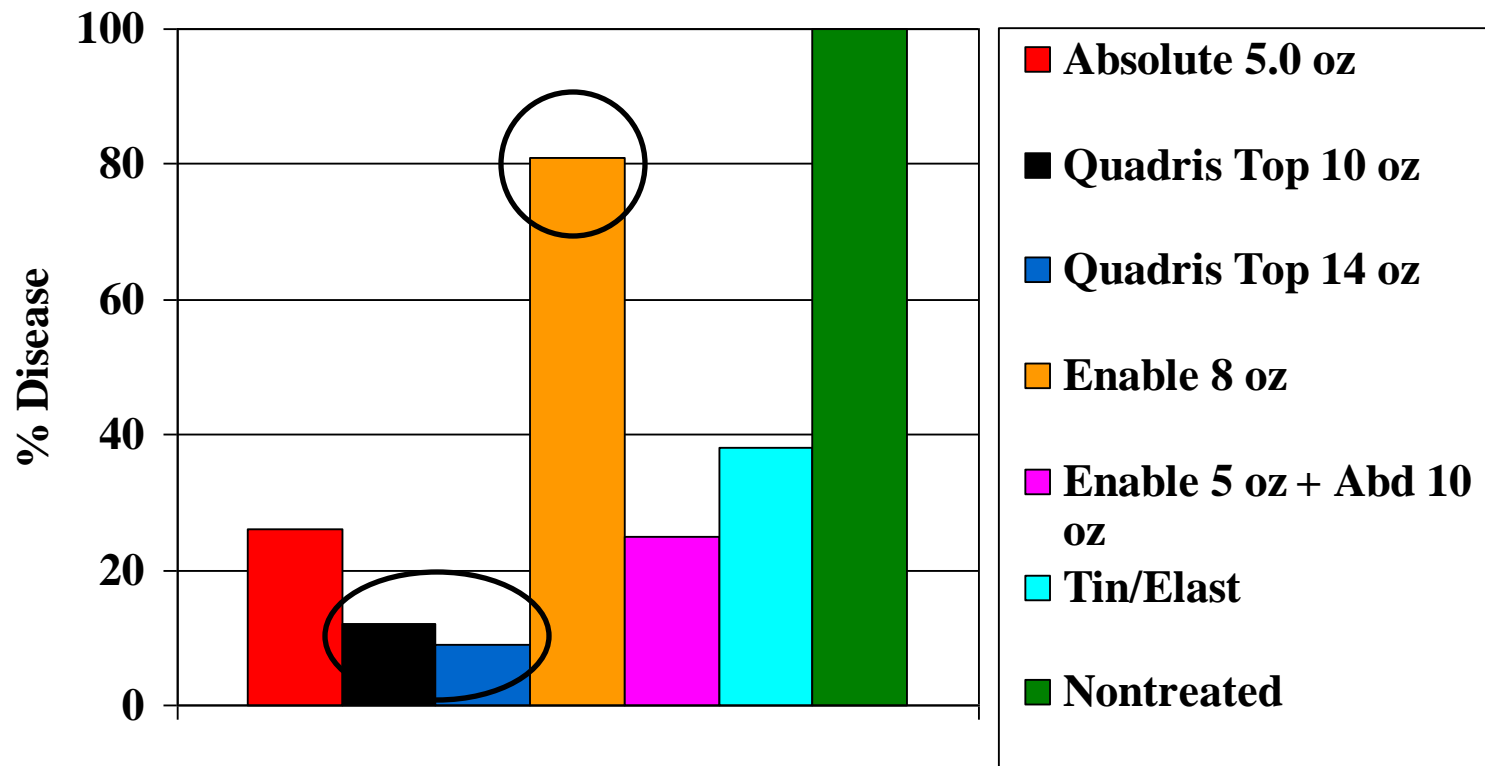
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Effect of Fungicides on Nut Scab Severity

(Wichita, Tifton, 2014; LSD = 9.6)

("Alt" programs are w/ Tin 6 oz + Elast 25 oz)



Is fungicide resistance affecting disease control?

YES, some commercial orchards having issues with scab under very good spray programs. Do we understand it completely? NO!

Relating sensitivity profiles from UGA to fungicide use patterns

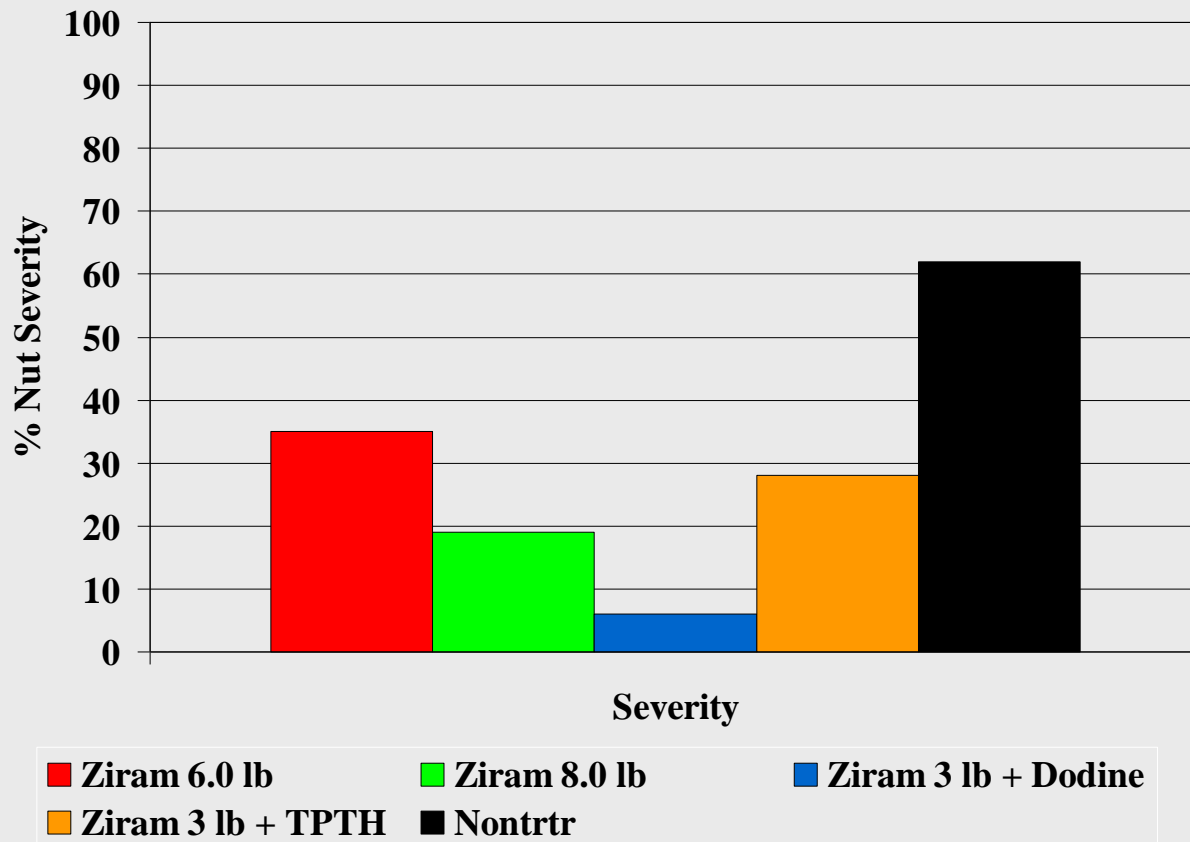
- If high insensitivity to Topsin, do not use it.
- If high insensitivity to Tin or triazoles, reduce use as much as possible and use full rates (probably still getting some control)
- Elast is a key product due to high efficacy on nut scab and low levels of insensitivity. Scab can still become insensitive to Elast. Surround it with other chemistries.

Need other modes of action

- Evaluating multiple new chemistries, but registration is not quick (or cheap!)
- Phosphites could really help (????)
- Quadris Top – expensive, but still the best (even at 10 oz), and works on resistant isolates
- Looking at older products also such as coppers and Ziram (multi-site and low resistance risk)

Tin Alternatives to Consider

(Brenneman, 2002, Tifton)



What about Nickel?

- There is data showing reductions in scab, other trials show no effect
- It is NOT labeled as a fungicide
- If you need nickel use it, and be happy with whatever scab control it brings. Do not count on it controlling scab!

Fungicide Efficacy Trial Data

www.timbrenneman.org

Publications

Field Trial Results

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What does the future hold?

- Fungicide resistance will become more of a problem!
- New modes of action will be fewer and more expensive
- Pecan cultivars become more susceptible to scab over time, not less (Desirable most commonly planted cultivar in Georgia until 2014)
- WE NEED TO BE SERIOUSLY LOOKING AT NON-CHEMICAL ALTERNATIVES FOR SCAB!!!

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