

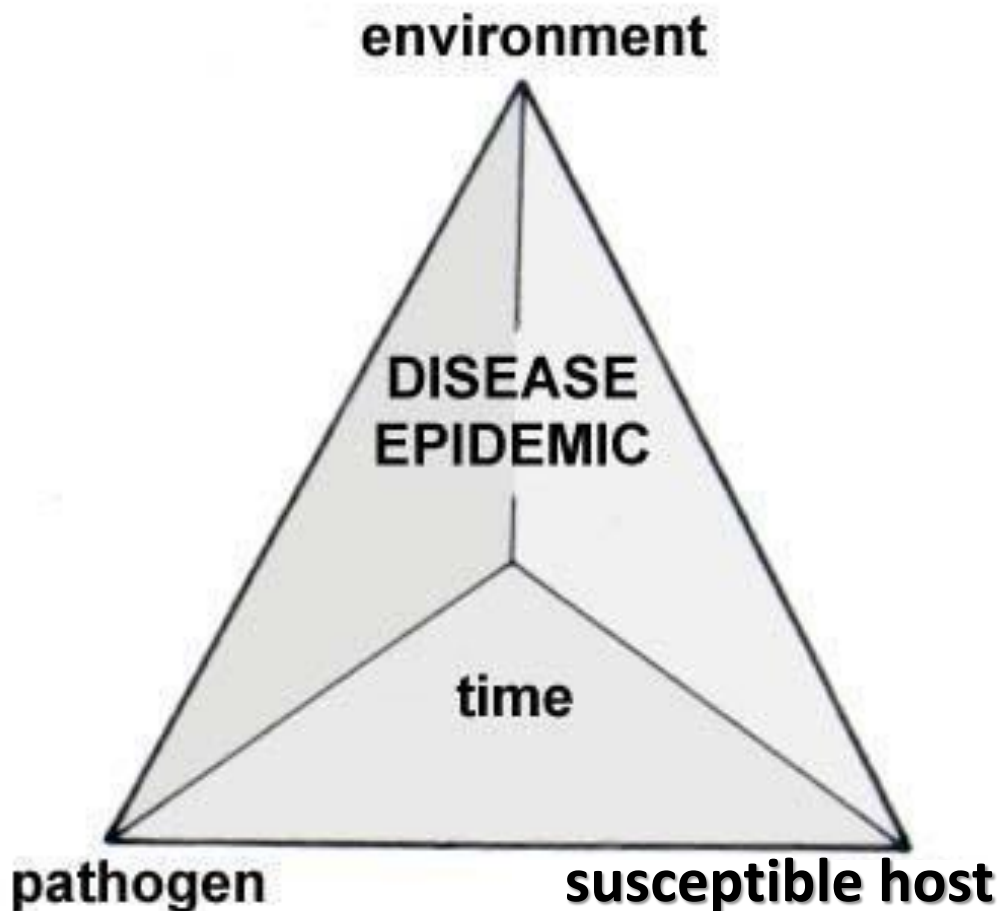


Above & Below Ground Diseases

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February 19th, 2026 – Cotton Focus

Disease Pyramid



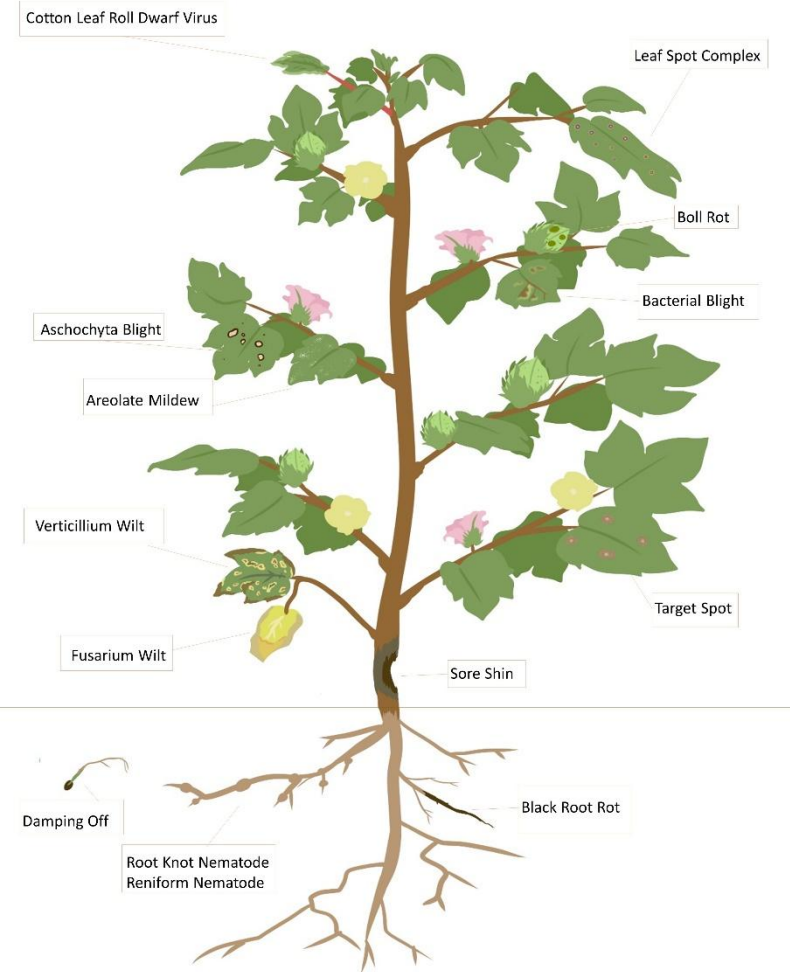
Factors needed to result in yield loss due to disease PEST

1. **Pathogen** → influenced by field history, cover crops, soil sample, etc.
2. **Environment** → promotes disease development (influenced by planting date and density)
3. **Ssusceptible host** → variety
4. **Time** → all 3 factors have to occur at a critical time/growth stage

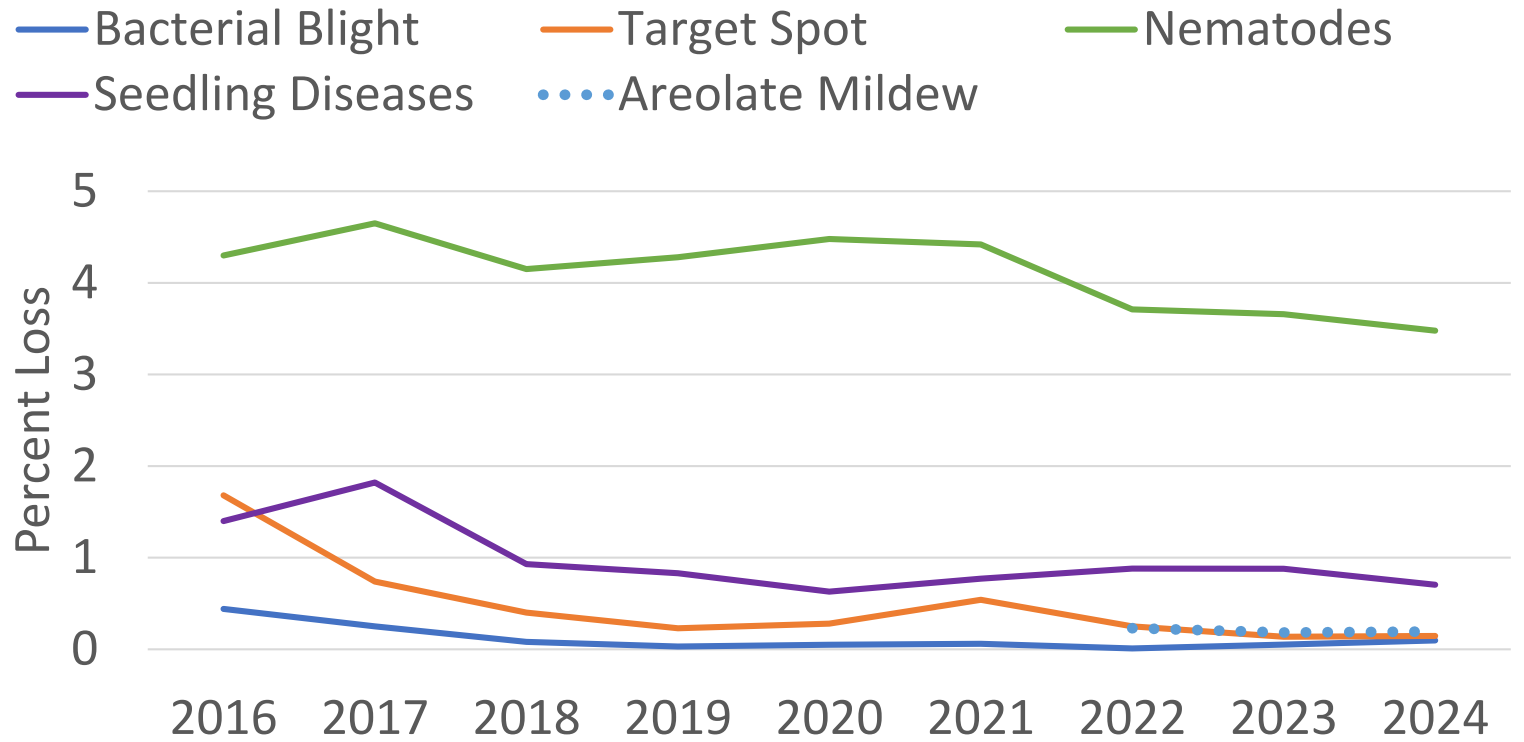
For yield loss to be an issue

Yield Loss Estimates

COMMON COTTON DISEASES AND WHERE THEY AFFECT YOUR COTTON PLANTS

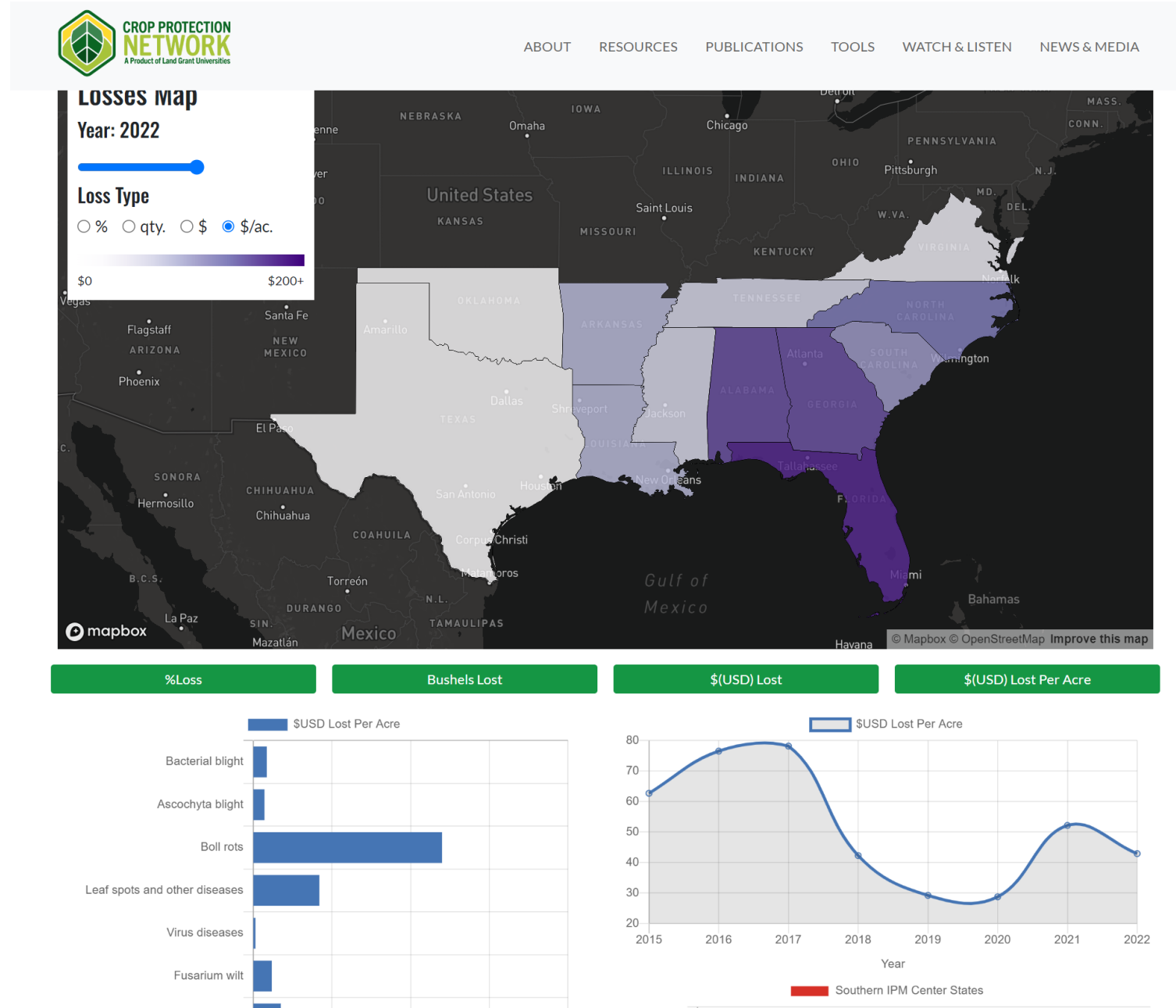


Disease Loss Estimate - IPM Southern States



Crop Protection Network

- Developing cotton scouting resources
- Disease yield loss estimates/calculators
- Across southern cotton belt losses from 2015-2022
 - \$28.76 - \$78.17 / acre
 - Avg. \$50.03 / acre





Major Cotton Nematodes



Photo credit: Kathy Lawrence

Reniform

Pathogen → *Rotylenchulus reniformis*,
overwinters as eggs and adults

Environment → no soil type
preference

Ssceptible host → soybean,
susceptible cotton varieties
(Non-host = corn)

Time → greater the population =
greater yield loss

~54% TN cotton fields infested

Root Knot

Pathogen → *Meloidogyne incognita*,
overwinters as eggs

Environment → sandy soil type
preference

Ssceptible host → wide host range,
susceptible cotton varieties, soybean,
corn, etc.

Time → greater the population =
greater yield loss

~7% TN cotton fields infested

Nematode tolerant/resistant cotton varieties

Both Reniform & Root-knot Protection

- PHY 332 W₃FE
- PHY 411 W₃FE
- PHY 443 W₃FE
- PHY 357 W₃FE
- PHY 433 W₃FE
- DP 2141NR B₃XF
- DP 2143NR B₃XF

Reniform Protection Only

- DP 2522NR B₃TXF

Root-knot Protection Only

- PHY 360 W₃FE
- PHY 400 W₃FE
- DP 2349 B₃XF
- DP 2436NR B₃TXF

***Rotation to corn BEST management option
for Reniform infested fields***

Nematicides

Seed Treatments

- AERIS (imidacloprid+thiodicarb)
- AVICTA (abamectin+thiamethoxam)
- COPEO (Fluopyram)
- PONCHO/VOTIVO
(clothianidin+*Bacillus firmus*)

In-furrow

- AgLogic (aldicarb)
- Velum (Fluopyram)
- Averland (abamectin)
- Telone II (1,3-dichloropropene)

* Soil sampling in the fall, before first freeze, to know nematode density *

Seedling Diseases & Seed Treatments

Pathogens

- *Rhizoctonia solani* (sore shin)
- *Pythium* spp.
- *Fusarium* spp.
- *Thielaviopsis basicola* (black root rot)

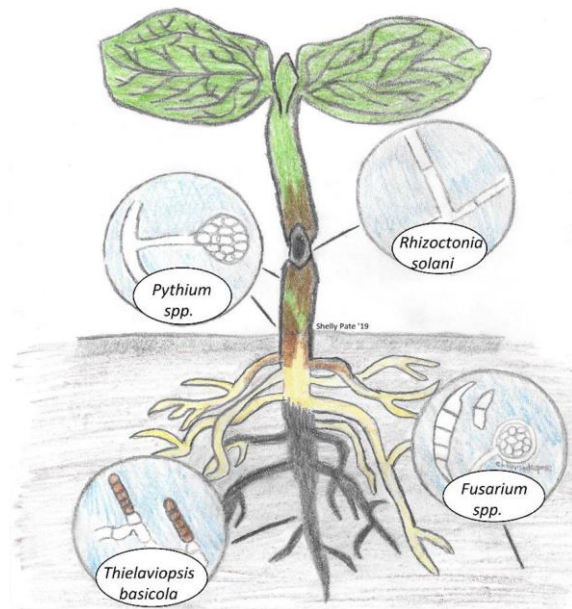


Image credit: Shelly Pate

Fungicide seed treatments

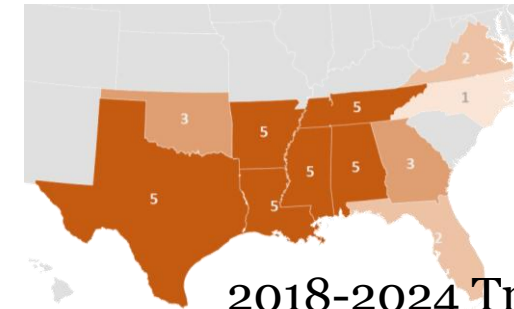
Base fungicides treatments:

- 2 to 4 different active ingredients



Image credit: Elias Zuchelli

Seed treatment considerations



2018-2024 Trials
across Cotton Belt

- Majority of base seed treatments will suffice
 - On average base fungicide protecting 18% of emergence
- Need for overtreatment increases under stressed conditions (Low temperatures)
 - 3 days after planting - soil temperature ≤ 55 °F
 - 21 days after planting - the number of hours below 60 °F
 - Greater protection (>25%)



Plant Date & Plant Population on Lint Yield Potential

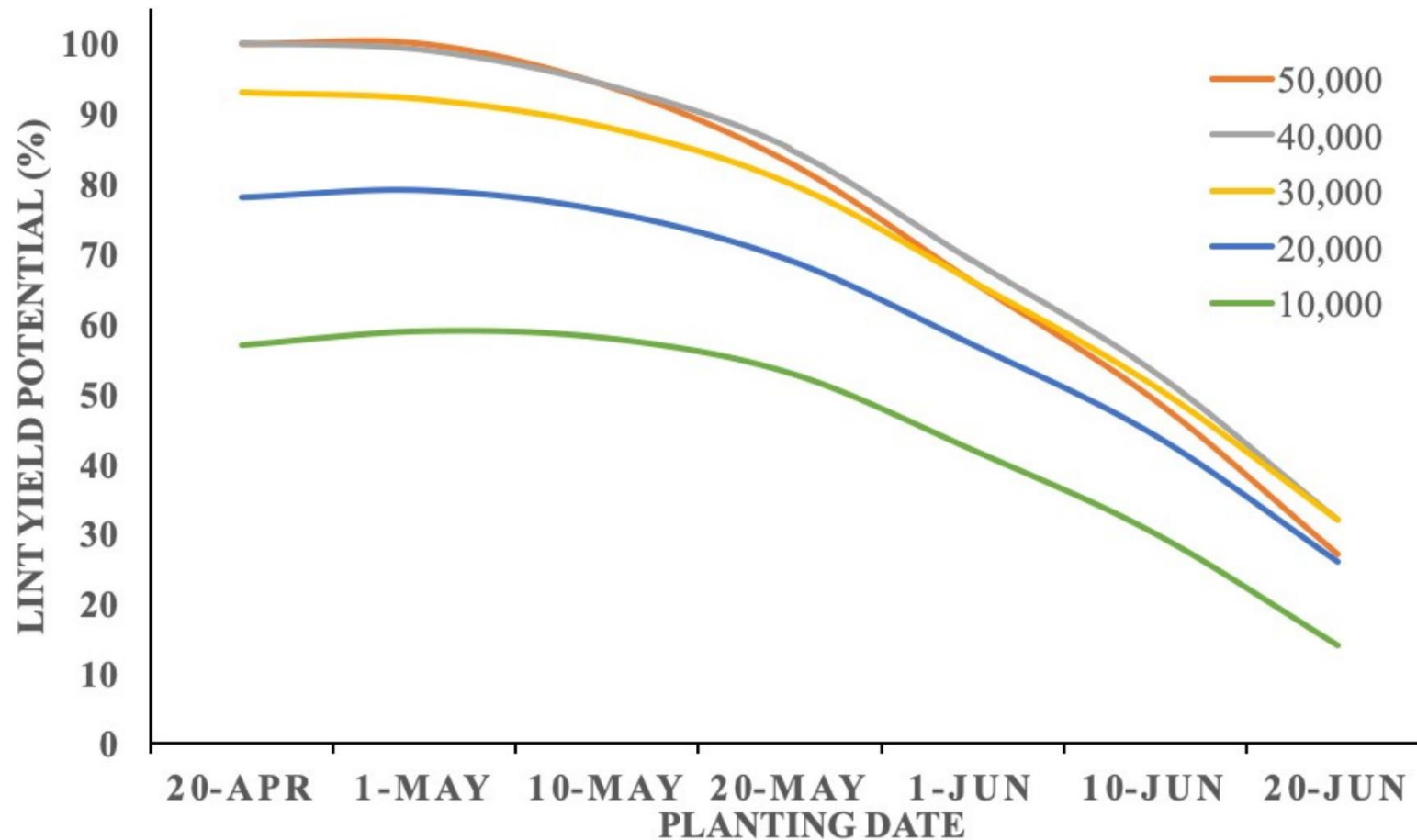


FIGURE 2: Predicted potential yield (lint yield potential) based on planting date graphed by plant population. Model generated from five populations across seven planting dates in Mississippi, Missouri and Tennessee from 2016-2018. Populations are reported in plants per acre.

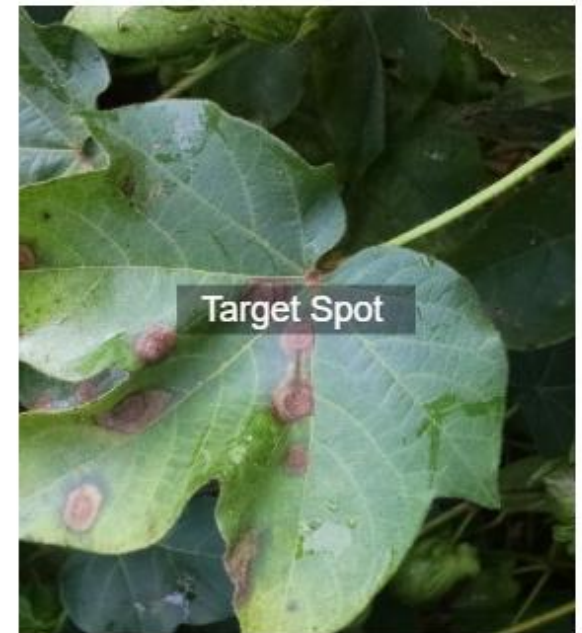
*From UT Extension
 Publication: Making the
 Cotton Replant Decision

To differentiate between foliar diseases

- Cotton Inc. publication – Diagnosis and Management of Foliar Diseases
- UT Field Guide – mobile friendly Guide.UTcrops.com
- Interactive key to differentiate foliar spots
- Images and descriptions of seeding diseases
- **Cotton Scout School – May 20, 2026**

Cotton Foliar Diseases

- > Key to Differentiating Spots
- > Alternaria Leaf Spot
- > Areolate Mildew
- > Ascochyta Blight (Wet Weather Blight)
- > Bacterial Blight (Angular Leaf Spot, Black Arm)
- > Cercospora Leaf Spot
- > Stemphylium Leaf Spot
- > Target Spot



Areolate Mildew/Ramularia Leaf Spot

- Confirmed across SE and Mid-South
 - TN – earliest observed mid-August
- Ranging from 1-20% incidence, 1-60% severity
- No yield loss reported in TN



Areolate Mildew/Ramularia Leaf Spot

Pathogen → *Ramulariopsis* spp.; survive in debris/spread by spores

Environment → wet/humid, tolerates the heat; usually lower-mid canopy, canopy closure *Not Needed*, causes defoliation

Susceptible host → Susceptibility varies

Time → earlier disease develops > the chance of effecting yield



Target Spot/Corynespora Leaf Spot

Pathogen → *Corynespora cassicola*; can survive in debris

Environment → wet/humid, hot; lower canopy, after canopy closure

Susceptible host → all varieties susceptible, but different levels

Time → earlier disease develops > the chance of effecting yield

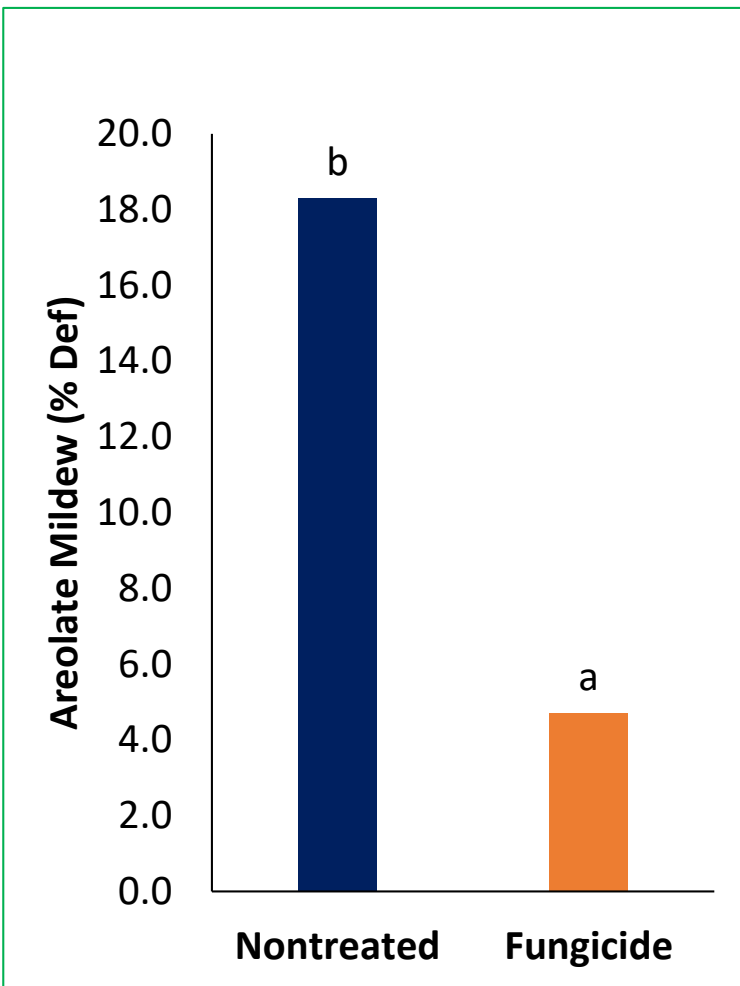


Management considerations for foliar diseases

- When warranted fungicide application
 - **Apply at sign of disease**
 - In TN, have yet to see yield loss from areolate mildew
- Variety selection

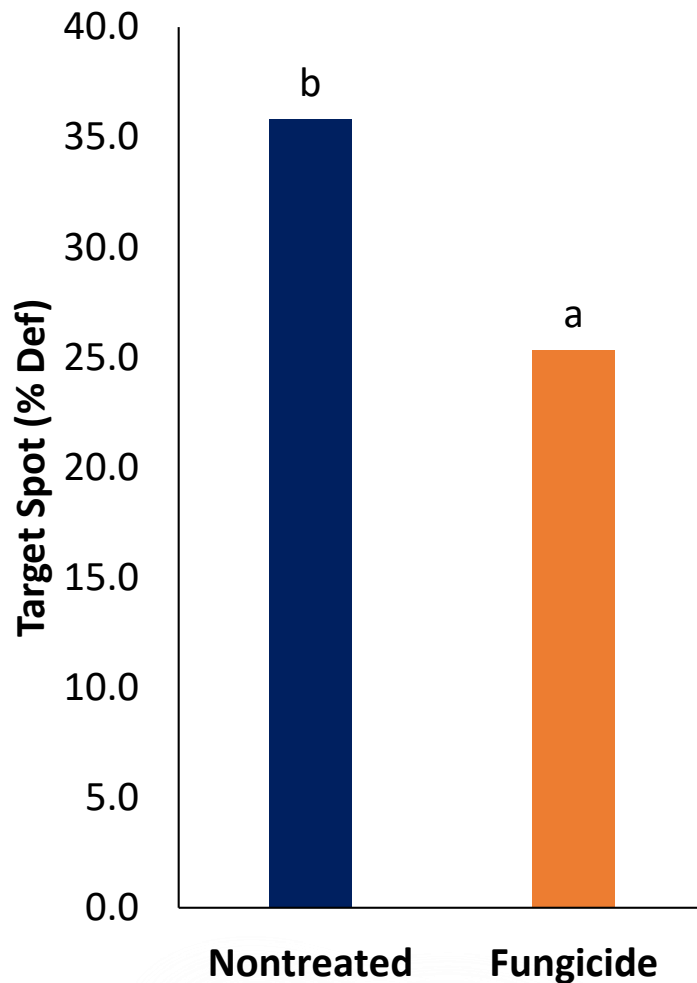
Fungicide	Rate/A
Approach	6 to 12 oz
Elatus	5 to 7.3 oz
Generic Headline	6 to 12 fl oz
Miravis Top	13.6 fl oz
Priaxor	4 to 8 fl oz
Propulse	8.5-13.6 fl oz
Quadris SC	6 to 9 fl oz
Revylok	4.5 to 6.5 oz
Revytek	8-15 fl oz
Topguard	7 to 14 fl oz
Topguard EQ	5 to 7 fl oz

Results: Yield

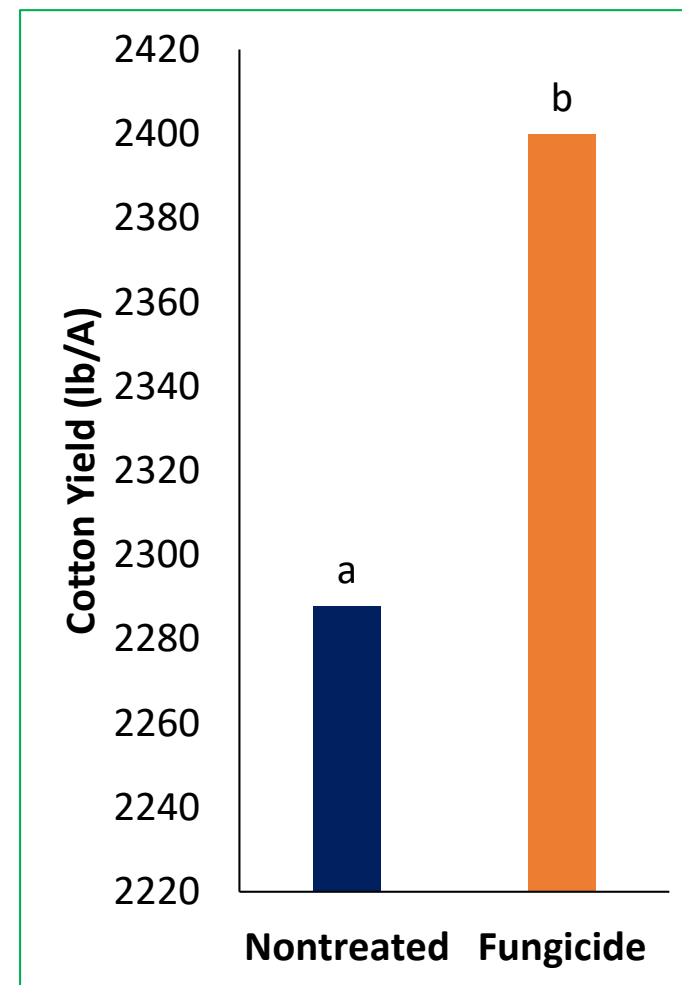


$P < 0.05$

Data from Amanda Strayer-Scherer



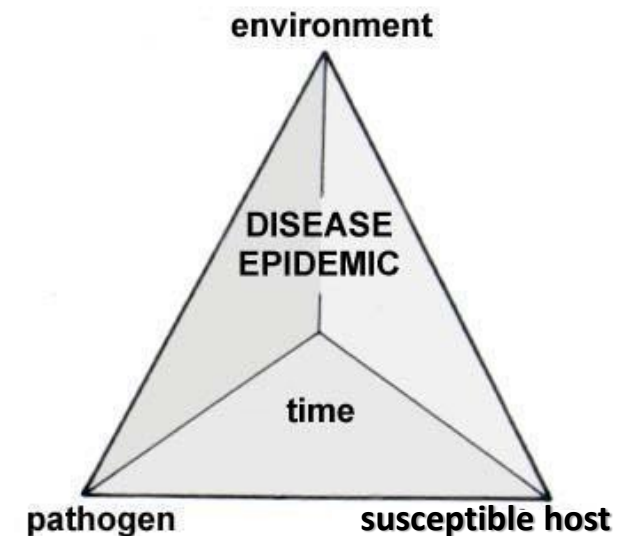
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$P < 0.05$

Take Away

- Know when disease is a PEST
 - Pathogen - Scout and sample your fields, use resources at UTCrops.com
 - Environment - Following best management practices
 - Ssceptible host - Know your varieties and crop rotations
 - Time - Be timely with scouting and pesticide applications
- Contact your local county agent for help with pest identification and management options



Thanks for your attention!

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