Cotton and Peanut Diseases & Management

Panhandle Row Crop Short Course, March 3rd, 2022

Nicholas S. Dufault
Extension Specialist
Row Crops & Vegetables
Plant Pathology Department/IFAS
University of Florida
Scientist want to repeat things to know if they are true

Success is when it repeatedly happens over multiple years or locations.
What caused this in my Cotton?
Tip #1: Don’t be late when managing a disease

It is not possible to get time back
Varietal selection will be key!

What about Areolate Mildew and Target Spot?
Moisture, rain and rank growth promote foliar disease!

This can lead to defoliation!
Tip #2: Tailor a fungicide program to meet your needs
Most wanted: Target spot and Areolate Mildew
Cotton has a window to apply for foliar diseases

Windows:

Target Spot
1st to 5th week of bloom

Areolate Mildew
30 days before defoliation

Fungicides available for Target Spot and Areolate Mildew

**Target Spot (App by 3rd week Bloom)**
- Priaxor (4 to 8 fl oz/A)
- Miravis Top (13.6 fl oz/A)
- Headline (6 to 12 fl oz/A)
  - Very good
  - TwinLine/Generics
- Quadris (6 to 9 fl oz/A)
  - Fair to good
  - Generics/Amistar Top

**Areolate Mildew (No exact time)**
- Quadris/Azoxystrobin
  - 6 to 9 fl oz/A
  - Amistar Top
- Headline/Pyraclostrobin
  - 6 to 12 fl oz/A
  - TwinLine
- Priaxor/Revytek is not labelled in FL
Should I do 1 or 2 sprays? Variety important...

Spray before 25% defoliation is CRITICAL

Yield losses of 150 to 250 lb lint/acre
Watch for look-a-likes in the leaf spot complex!

Spots develop throughout the canopy

Often found with nutrient stress (e.g. Postassium)

Fungicides are not economical, especially with nutrient problems

Cercospora Leaf Spot

Anthracnose Leaf Spot

Stemphylium Leaf Spot
Identification is the key to management
Which one is white mold (stem rot)?

Lesion leads to wilt/rot

Photo Credit: Bob Kemerait; @bobkemerait
Tip #1: Don’t be late when managing a disease
How can we help ourselves be on time? **Peanut Rx**

- Crop rotation
- Cultivar selection
- Seed treatments – Critical to plant stand establishment
- In-furrow products (Thimet, Proline and Velum)

<table>
<thead>
<tr>
<th>Planting Date</th>
<th>Leaf spot variety points</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>15</td>
</tr>
<tr>
<td>Prior to May 1</td>
<td>0</td>
</tr>
<tr>
<td>May 1 to May 10</td>
<td>5</td>
</tr>
<tr>
<td>May 11-May 31</td>
<td>10</td>
</tr>
<tr>
<td>June 1-June 10</td>
<td>15</td>
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<tr>
<td>After June 10</td>
<td>15</td>
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Thimet, 3-year rotation, Low disease

<table>
<thead>
<tr>
<th>Leaf spot variety points</th>
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<tbody>
<tr>
<td>15</td>
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<tr>
<td>75</td>
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<td>80</td>
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<tr>
<td>85</td>
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<td>90</td>
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Zero rotation, High disease in past
If it is possible, crop rotation impacts are big

Rotation also delayed foliar disease onset until **80 days after planting or more**
Resistant cultivars will delay/limit disease

Resistance did not overcome lack of rotation

Abound in-furrow used
Leaf spot diseases are slowed by in-furrow applications (Thimet® and Velum®)

Delayed 50% defoliation by 2 weeks
Tip #2: Tailor a fungicide program to meet your needs

- Early leaf spot
- Late leaf spot
- White Mold
- Rust
- Mixed
- Pod rot
Think about when the disease typically shows up

The Who, What, When and Where
- Which pathogen is present?
- What variety am I using (resistance or not)?
- When does it show up? (start 10 days before)
- Where should I be applying my fungicides?
Try to stay ahead of leaf spots

- Teb. weak on LLS (add something)
- Azoxystrobin weak (sulfur helps)
- Newer leaf spot products work
- Stay ahead of disease (e.g. Miravis)
- Provost Silver strong on ELS (75 & 105 DAP)
- Sulfur 3 to 5 lbs/A can help
- Follow Rx Recommendations
Stem rot management starts with cultivar selection
Foliar disease onset 90 DAP; comparing last 3 sprays.

Cultivar: GA-06G

No soilborne disease observed; something was likely present given yield bumps.
Miravis reduced defoliation by 10%, no yield effect

Untreated

Chloro

Sulfur_TebElatusAlto

MiravisElatus9.5

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<th>Treatment</th>
<th>Defoliation (%)</th>
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<tr>
<td>Untreated</td>
<td>100</td>
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<tr>
<td>Chloro</td>
<td>70</td>
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<tr>
<td>Sulfur_TebElatusAlto</td>
<td>60</td>
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<tr>
<td>MiravisElatus9.5</td>
<td>50</td>
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<table>
<thead>
<tr>
<th>Treatment</th>
<th>Abound</th>
<th>Equus (24) + Teb (7.2)</th>
<th>Miravis (3.4) + Elatus (9.5)</th>
<th>Miravis (3.4) + Elatus (9.5)</th>
<th>Equus (16) + Alto (5.5)</th>
<th>Chloro (16)+Topsin (10 fl oz)</th>
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</thead>
<tbody>
<tr>
<td>MiravisElatus9.5</td>
<td>3</td>
<td>Abound</td>
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<td></td>
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<td></td>
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<tr>
<td>Sulfur_TebElatusAlto</td>
<td>12</td>
<td>Abound</td>
<td>Teb (7.2) + Microthi (3 lb)</td>
<td>Miravis (3.4) + Elatus (9.5)</td>
<td>Microthi (3) + Elatus (9.5)</td>
<td>Microthi (3) + Alto (5.5)</td>
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</tbody>
</table>
Late leaf spot was managed by Provysol and Teb+Sulfur

Cultivar: GA-06G

Variation in yields within treatments was typically 2,000 to 3,000 lb/A
Provost Silver & Alto not strong on Late Leaf Spot

- Untreated
- UPL
- Miravis
- 5-Spray
- BASF

Florida 1 to 10

105 DAP
Tip#3: Have a good lists of backup products ready
Luckily, many products are available for management
General information about fungicide supply 2022

- Expense will likely increase
- Most products will be available
  - Acreage increase could change availability
  - Not expecting chlorothalonil shortage
- Tight supply possible for:
  - Pyraclostrobin (Headline)
  - Tebuconazole
  - Azoxystrobin (Abound)
Consider multinational companies’ generic products as alternatives
Consider mixing in sulfur to your program

“Sulfur alone does not hold up like chlorothalonil does.”

Dr. A. Culbreath
Micronized sulfur has consistently worked

PSREU 2020 Trial

4 Sprays Total

Defoliation (%)

Untreated, Chloro, Microthiol, Teb, Teb/Micro, Abound, Abound/Micro

- DMI (3) benefit needs more info
- QoI (11) benefit is greater
- Microthi™ better than untreated
- Chlorothalonil alone holds up
- 3 lb might be too low
- Other Micronized Sulfurs work too
- No rust control apparent
Don’t fall behind in disease management

1. Plan ahead and knowing your risk to help determine the inputs needed
2. Create a management program specific to your needs
3. Have a list of backups ready
Thank you for your support!
Thank you to you too!

Dr. Nicholas Dufault
nsdufault@ufl.edu
Office Phone: 1-352-273-4623

NFREC Staff and Faculty
PSREU Staff and Faculty
Keith Wynn
Ethan Carter
Dr. Barry Tillman
Dr. Ian Small