THROUGH A GLASS, DARKLY

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Cotton Incorporated Target Spot Summit
Foliar Diseases of Cotton

- Historically considered “incidental” for cotton production in Georgia.

- Various causes-
  - E.g. Cercospora, Stemphylium, Alternaria
  - Stemphylium leaf spot tied to nutrient deficiencies, esp. potassium

- Wet weather blight (Ascochyta blight)
  - Phoma
  - Typically seen on younger plants
  - Rarely seen today

- Aereolate mildew
  - Ramularia
  - Sporadic occurrence
Stemphylium Leaf Spot on Cotton
Seminole County 2009

Rome Ethredge
Leaf Spot Disease in Attapulgus
Stemphylium leaf spot
8 September 2009
Cercospora Leaf Spot on Cotton

Colquitt County 2009
Cercospora Leaf Spot on Cotton
Colquitt County 2009
Fungicides for Foliar Diseases of Cotton

- **Topsin-M**
  - Section 18 in Florida
  - Specifically for hardlock
  - May also benefit leaf health

- **Headline (pyraclostrobin)**
  - Received Section 3 label in 2007
  - Single application expected
  - Labeled for foliar disease control
  - “Plant Health” benefit?

- **Quadris (azoxystrobin)**
  - Supplemental label received in July 2008
2007 Appling County Fungicide Trial
Photograph by Sandy Newell
Untreated Plot/Areolate Mildew
2007 Appling County Fungicide Trial
Photograph by Sandy Newell
Pyraclostrobin mid-canopy/Areolate Mildew
Appling County Fungicide Trial 2007

LINT (lb/A)

- Untreated
- Headline, 6.14 fl oz
- Caramba, 12 fl oz
- Quadris, 9.2 fl oz
- Topsin, 16 fl oz
Two shots of Headline (6 fl oz/A) and 0 lb/A vs 180 lb/A potassium.

Stemphylium leaf spot 2010
Cotton Fungicide Studies
2 (3) Applications beginning at full bloom

Bottom line- 10 times made a little money, 10 times lost money
In desperation,
“BOB!! It CAN’T all be potassium deficiency”
Leaf Spot Diseases in Decatur County
(likely Corynespora and/or Cercospora) 8
September 2009
Corynespora cassiicola
2010 Attapulgus REC, Decatur County

Stemphylium and Corynespora Leaf Spots (Affected leaves only)
Fungicide programs analyzed across cotton varieties

August 23 2010 LSD=3.221

<table>
<thead>
<tr>
<th>Fungicide Program</th>
<th>% Leaf Area Affected</th>
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<tbody>
<tr>
<td>Headline, 6 fl oz/A</td>
<td>3.4</td>
</tr>
<tr>
<td>Headline, 12 fl oz/A</td>
<td>4.4</td>
</tr>
<tr>
<td>Untreated</td>
<td>9.8</td>
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</tbody>
</table>

Headline, 6 fl oz/A

Headline, 12 fl oz/A

Untreated
2010 Attapulgus REC, Decatur County

Stemphylium and Corynespora Leaf Spots
Fungicide programs analyzed across cotton varieties

Prob(F)=0.7285

Seed cotton (lb/A)

3440
3413
3348

Headline, 6 fl oz/A
Headline, 12 fl oz/A
Untreated

Fungicide Program
2010 Thomas County
Field stripped with/without Headline 6 fl oz/A

RJ Byrne
2010 Commercial Grower Trial, Thomas County

Corynespora Leaf Spot
RJ Byrne, UGA Cooperative Extension

![Bar chart showing fungicide program effectiveness against Corynespora leaf spot. The chart compares the defoliation percentage between 'Headline, 6 fl oz/A' and 'Untreated' treatments. The 'Headline, 6 fl oz/A' treatment shows 25% defoliation, while the 'Untreated' treatment shows 72% defoliation. The chart indicates that the fungicide program is significant at P<0.05.]
2010 Commercial Grower Trial, Thomas County
Corynespora Leaf Spot
RJ Byrne, UGA Cooperative Extension

![Bar chart showing the difference in Lint (lb/A) between Headline, 6 fl oz/A and Untreated Fungicide Programs. The Headline program shows a higher Lint (1318 lb/A) compared to the Untreated program (1254 lb/A). The p-value is P<0.1.]
Through a glass, darkly......

- **Stemphylium leaf spot.**
  - Neither disease severity nor defoliation affected by fungicides.
  - Yield not affected by fungicide applications.
  - Disease severity and defoliation significantly affected by pre-plant application of potassium but in-season foliar application of potassium.

- **Corynespora leaf spot disease**
  - Disease severity and defoliation reduced with application of fungicides.
  - Yields increased with application of fungicides, statistically significant (64 lb/A lint) in one trial.
  - **Best timing.....**
  - **Best fungicides....**
  - **Best recommendations.......**
  - **Best economics...........**
  - **Boll rots.........**
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  - *Ramularia*
  - Sporadic occurrence

- Corynespora leaf spot
  - J.P. Jones 1963
  - Southwest Asia- to
  - Include boll rots
Acknowledgements

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