How important is pest management in your decisions?

Chemicals < 15% in cotton and corn
- Growth inhibitors
- Nematodes
- Insect Management

Scouting is critical, especially in cotton and corn.
What is the most important disease you manage each year?
No matter what, some level of disease is expected each year.

But which one?

- **Citra**
  - Early Leaf spot: 78%
  - Late Leaf spot: 23%
  - Rust: 14%

- **Marianna**
  - Early Leaf spot: 63%
  - Late Leaf spot: 2%
  - Rust: 2%

- **Live Oak**
  - Early Leaf spot: 29%
  - Late Leaf spot: 52%
Climate can tell us a lot about disease, but it does have limitations.

### ENSO Forecast

Climate Phase Forecast for the Next 3 Months

#### El Niño Impacts on the Southeast by Season

<table>
<thead>
<tr>
<th></th>
<th>Peninsular FL</th>
<th>Tri-State Region</th>
<th>Western Panhandle</th>
<th>Central and North AL and GA</th>
<th>Eastern NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct-Dec</td>
<td>Wet &amp; cool</td>
<td>Wet</td>
<td>No impact</td>
<td>No impact</td>
<td>Likely wet</td>
</tr>
<tr>
<td>Jan-Mar</td>
<td>Very wet &amp; cool</td>
<td>Wet</td>
<td>Wet</td>
<td>No impact</td>
<td>Likely wet</td>
</tr>
<tr>
<td>Apr-Jun</td>
<td>Slightly dry</td>
<td>Slightly wet</td>
<td>Slightly dry</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Jul-Sept</td>
<td>Slightly dry to no impact</td>
<td>No impact</td>
<td>No impact</td>
<td>Slightly dry</td>
<td>No impact</td>
</tr>
</tbody>
</table>

#### La Niña Impacts on the Southeast by Season

<table>
<thead>
<tr>
<th></th>
<th>Peninsular FL</th>
<th>Tri-State Region</th>
<th>Western Panhandle</th>
<th>Central and North AL and GA</th>
<th>Eastern NC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct-Dec</td>
<td>Dry &amp; slightly warm</td>
<td>Slightly dry</td>
<td>Slightly dry</td>
<td>Dry</td>
<td>Likely dry</td>
</tr>
<tr>
<td>Jan-Mar</td>
<td>Very dry &amp; warm</td>
<td>Dry</td>
<td>Dry</td>
<td>Dry in south, wet in NW AL</td>
<td>Likely dry</td>
</tr>
<tr>
<td>Apr-Jun</td>
<td>Slightly wet</td>
<td>Dry</td>
<td>Dry</td>
<td>No impact</td>
<td>No impact</td>
</tr>
<tr>
<td>Jul-Sept</td>
<td>Slightly cool</td>
<td>No impact</td>
<td>No impact</td>
<td>Wet in NW AL</td>
<td>No impact</td>
</tr>
</tbody>
</table>
Early plantings typically see more lost from White mold/Stem Rot.

http://agroclimate.org/tools/planting-date-planner/
Climate information is great, but it doesn't tell you what the weather is or will be.

Useful with a pleasant degree of humor

The Almanac has a 80% accuracy rate for their predictions based on averages.

Averages do not count well for extreme events (e.g. more intense rainfall events)
A diverse fungicide program is critical.

### Disease Risk Spray Schedules – 2018

#### Notes:
- Use higher rate of CONVOY if white mold risk increases to High Risk category. CONVOY only controls soilborne diseases (*Sclerotium rolfsii*—white mold; *Rhizoctonia solani*—limb rot). A foliar disease spray program must be added for management of leaf spot.
Using different modes of action, leads to yield savings and better disease control.

$47.37/A increase in avg. net return with each increase in # of modes of action from 1 to 3
What FRACs are available?

Group 3
- Domark 230 ME
- Tebuconazole 3.6F
- QUASH

Group 7
- Alto
- PROLINE
- DuPont Fontelis
- CONVOY

Mixed
- TOPGUARD
- Bravo WeatherStik
- Elatus
- Priaxor
- Provost Opti
- Absolute
- Custodia

Group 11
- Headline Fungicide
- EQUATION
- AZAKA
- Abound Flowable Fungicide
- Evito

Group 1
- ELAST 400
- TOPSIN 4.5 FL
- Manzate Pro-Stick T&O
There are/will be production issues with chlorothalonil products in 2018.

Prices will be higher
Supply will be less
Prices will be higher for tebuconazole too.

Tank mix options to reduce chlorothalonil rate to 1.0 pints or 0.9 lbs.

**DMI Products (FRAC 3)**

- Tebuconazole (7.2 fl oz)
- Alto (5.5 fl oz)
- Topguard (7 to 14 fl oz)
- Quash (2.5 to 4 oz)
- Domark (2.5 to 5.25 fl oz)

**QoI Products (FRAC 11)**

- Headline (labeled)
- Abound (18.5 fl oz)
- Evito (5.7 fl oz)

Some mixed products include:

- Custodia (15.5 fl oz)
- Absolute (3.5 fl oz)
- Acropolis (23 fl oz)

Watch for tebuconazole in mixes
What do we know about the fungicide product limitations?

Mostly research from tebuconazole

*Proline has been strong:
- White mold
- Leafspots

<table>
<thead>
<tr>
<th>Strong</th>
<th>Moderate</th>
<th>Weak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Leaf Spot</td>
<td>Rust</td>
<td>Late Leaf Spot</td>
</tr>
<tr>
<td>White mold*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What do we know about the fungicide product limitations?

Rating based on research from azoxystrobin and pyraclostrobin

<table>
<thead>
<tr>
<th>Strong</th>
<th>Moderate</th>
<th>Weak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Leaf Spot</td>
<td>Rust</td>
<td></td>
</tr>
<tr>
<td>Late Leaf Spot</td>
<td></td>
<td>White mold</td>
</tr>
</tbody>
</table>
Some alternative products are:

- Topsin-M (5 - 10 fl oz)
  - FRAC 1
  - No more than 2 apps
  - Not consecutive (1 & 3 or 2 & 4)

- Protectants
  - Elast (12.8 fl oz)
    - mix with teb.
    - early in the season
  - Mancozeb - mix with Topsin M
Products that can be applied alone are:

- 16 fl oz/A
- 8 fl oz/A
- 7.3 – 9.5 fl oz/A
- 10.7 fl oz/A
Mixing other varieties available will be beneficial for disease management.

<table>
<thead>
<tr>
<th>PEANUT VARIETY</th>
<th>TSWV Points</th>
<th>Leaf Spot Points</th>
<th>Soilborne Disease Points</th>
<th>Limb Rot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variety:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Georgia Green</td>
<td>30</td>
<td>20</td>
<td>25</td>
<td>unknown</td>
</tr>
<tr>
<td>Florida Fancy</td>
<td>25</td>
<td>20</td>
<td>20</td>
<td>unknown</td>
</tr>
<tr>
<td>TUFRunner 511</td>
<td>20</td>
<td>30</td>
<td>15</td>
<td>unknown</td>
</tr>
<tr>
<td>Georgia-09B</td>
<td>20</td>
<td>25</td>
<td>25</td>
<td>unknown</td>
</tr>
<tr>
<td>FloRun 107</td>
<td>20</td>
<td>25</td>
<td>20</td>
<td>unknown</td>
</tr>
<tr>
<td>Georgia-16HO</td>
<td>15</td>
<td>25</td>
<td>20</td>
<td>unknown</td>
</tr>
<tr>
<td>FloRun 331</td>
<td>15</td>
<td>20</td>
<td>15</td>
<td>unknown</td>
</tr>
<tr>
<td>Georgia-13M</td>
<td>10</td>
<td>30</td>
<td>25</td>
<td>unknown</td>
</tr>
<tr>
<td>TUFRunner 297</td>
<td>10</td>
<td>25</td>
<td>20</td>
<td>unknown</td>
</tr>
<tr>
<td>Sullivan</td>
<td>10</td>
<td>25</td>
<td>15</td>
<td>unknown</td>
</tr>
<tr>
<td>Bailey</td>
<td>10</td>
<td>25</td>
<td>10</td>
<td>unknown</td>
</tr>
<tr>
<td>Georgia-06G</td>
<td>10</td>
<td>20</td>
<td>20</td>
<td>unknown</td>
</tr>
<tr>
<td>Florida-07</td>
<td>10</td>
<td>20</td>
<td>15</td>
<td>unknown</td>
</tr>
<tr>
<td>Georgia-07W</td>
<td>10</td>
<td>20</td>
<td>15</td>
<td>unknown</td>
</tr>
<tr>
<td>Tifguard</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>unknown</td>
</tr>
<tr>
<td>TifNV-HiOL</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>unknown</td>
</tr>
<tr>
<td>Georgia-14N</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>unknown</td>
</tr>
<tr>
<td>Georgia-12Y</td>
<td>5</td>
<td>15</td>
<td>10</td>
<td>unknown</td>
</tr>
</tbody>
</table>

“Again in 2018, Georgia-06G will be the predominant variety with over 80% of the seed acreage grown in that variety in 2017”

http://nwdistrict.ifas.ufl.edu/phag/2018/01/19/the-search-for-the-bigger-than-life-peanut-variety-continues/
Reduced applications impacts

- 7th year of continuous peanuts
  
- Generic fungicide program
  - Chlorothalonil, Teb. and Azoxy.
  - All have 3 MOA

- Cultivars: Georgia-06G, TUFRunner 511 and 297, FloRun 331

- Planting date: 5/11/16 & 5/16/17
## Fungicide schedule

### Days After Planting

<table>
<thead>
<tr>
<th>Days After Planting</th>
<th>30</th>
<th>42</th>
<th>45</th>
<th>60</th>
<th>75</th>
<th>90</th>
<th>105</th>
<th>110</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Echo</td>
<td>Echo*</td>
<td>Echo</td>
<td>Teb. + Echo</td>
<td><strong>Teb + Echo</strong></td>
<td>Abound + Echo</td>
<td>Teb + Echo</td>
<td><strong>Teb + Echo</strong></td>
<td>Echo</td>
<td></td>
</tr>
</tbody>
</table>

* 4 and 5 spray programs only

** 5 and 7 spray program only

4 Sprays: 2 Teb. and 1 Azoxy.
5 Sprays: 2 Teb. and 1 Azoxy.
7 Sprays: 3 Teb. and 1 Azoxy.
Leafspot pressure is an important part of reduced application decisions.

Diagram showing FL 1 to 10 Rating for different cultivars (GA06G, TUF511, TUF297, FL0331) for the year 2016.
5 & 7 apps same yield for all varieties (Defoliation < 50%)

Values above line differ from GA06G 7 apps.

2016: LSD = 722
5 & 7 apps same yield for all Florida vars. (Defoliation > 80%)

Values above diff. from GA06G 7 apps.

2017: LSD = 559
Yield increase with increased sprays, but significant benefits were not always seen.

- 5 apps. was comparable to 7 apps., but influence by variety and disease.

- GA06G needs at least 7 apps. for high disease
  - > 50% defoliation
  - ELS dominate

Could we reduce an early season chlorothalonil spray?
Yes, it may be possible.

### Spray Schedule

<table>
<thead>
<tr>
<th>Date:</th>
<th>15-Jun</th>
<th>27-Jun</th>
<th>3-Jul</th>
<th>18-Jul</th>
<th>1-Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>DAP:</td>
<td>30</td>
<td>42</td>
<td>48</td>
<td>63</td>
<td>77</td>
</tr>
<tr>
<td>Trt #</td>
<td>0 Sprays</td>
<td>1 to 4</td>
<td>4 Sprays</td>
<td>5 to 8</td>
<td>7 Sprays</td>
</tr>
</tbody>
</table>

- **0 Sprays**
  - 1 to 4

- **4 Sprays**
  - 5 to 8
  - Echo 720 @ 1.5 pt/a
  - TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a

- **5 Sprays**
  - 9 to 12
  - Echo 720 @ 1.5 pt/a
  - TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a

- **7 Sprays**
  - 13 to 16
  - Echo 720 @ 1.5 pt/a
  - Echo 720 @ 1.5 pt/a
  - TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a
  - TebuStar @ 7.2 fl oz/a + Echo 720 1 pt/a

### Notes:
1. Disease developed after 42 days
2. Early leaf spot was the predominate pathogen
3. Plantings were in May

It will be a case by case situation.
Live Oak Fungicide Trial Data

• Small plot trials (30-ft plots)
• Large plot trials (~ 2 acres)
• 3rd year of peanuts
  – History of white mold with peanuts
  – WM present in 3rd year, but still low

• Variety: Georgia-06G
Small plot trials focused on company Peanut Rx schedules.

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Key Fungicides – per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nichino</td>
<td>Convoy-32 fl oz</td>
</tr>
<tr>
<td>Bayer</td>
<td>Proline-5.7 fl oz; ProvostOpti-10.7 fl oz</td>
</tr>
<tr>
<td>Syngenta</td>
<td>Elatus-7.3 oz</td>
</tr>
<tr>
<td>Dupont</td>
<td>Fontelis-16 fl oz</td>
</tr>
<tr>
<td>BASF</td>
<td>Priaxor-6 &amp; 8 fl oz</td>
</tr>
<tr>
<td>Check</td>
<td>Echo 720-1.5 pt</td>
</tr>
<tr>
<td>Generic</td>
<td>TebuStar-7.2 fl oz; Abound-18.5 fl oz</td>
</tr>
</tbody>
</table>

Disease developed late; after July or 75 DAP.
All programs performed well, but some differences were present.

LSD = 672

Below orange line is sig. diff from Elatus
Large Plot: focused on the use of DMI (FRAC 3) products.

<table>
<thead>
<tr>
<th>Program type</th>
<th>Key Fungicides – per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>High input</td>
<td>Proline-5.7 fl oz; ProvostOpti-10.7 fl oz</td>
</tr>
<tr>
<td>Low input</td>
<td>TebuStar-7.2 fl oz; Abound-18.5 fl oz</td>
</tr>
</tbody>
</table>

3rd Year of Peanuts
White mold present
Late season defoliation

Harvest Date: 10/12
High input had significantly higher yields, but low yields overall.

LSD = 314
High input worth $200 more per acre than low input.

LSD = 81
The trend in 2017 was that “high” input programs performed better.
On-Farm Trials

Hamilton Co. 2017

– Irrigated
  • Rx programs
  • Nematodes present

– Dry land
  • High and low input
  • Nematodes present
## Dryland OFT with various input levels

<table>
<thead>
<tr>
<th>Program type</th>
<th>Key Fungicides – per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>High input</td>
<td>Proline-5.7 fl oz; ProvostOpti-10.7 fl oz</td>
</tr>
<tr>
<td>High + Velum</td>
<td>Infurrow-18 fl oz/A</td>
</tr>
<tr>
<td>Low input</td>
<td>TebuStar-7.2 fl oz; Abound-18.5 fl oz</td>
</tr>
</tbody>
</table>

### Live Oak, FAWN Station

<table>
<thead>
<tr>
<th>Month</th>
<th>Rainfall (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr-17</td>
<td>4</td>
</tr>
<tr>
<td>May-17</td>
<td>2</td>
</tr>
<tr>
<td>Jun-17</td>
<td>10</td>
</tr>
<tr>
<td>Jul-17</td>
<td>2</td>
</tr>
<tr>
<td>Aug-17</td>
<td>6</td>
</tr>
<tr>
<td>Sep-17</td>
<td>9</td>
</tr>
<tr>
<td>Oct-17</td>
<td>1</td>
</tr>
<tr>
<td>Nov-17</td>
<td>1</td>
</tr>
</tbody>
</table>
Yield was not significantly different.

$p > 0.50$
Root-knot was found in one replication of the “no Velum” plots.

\[ p > 0.60 \]
Peanut Rx programs with VelumTotal and one without.

Planting Date: 5/25 to 5/26
Harvest Date: 10/6 to 10/7

<table>
<thead>
<tr>
<th>Company</th>
<th>Key Fungicides – per acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syngenta</td>
<td>Elatus-7.3 oz</td>
</tr>
<tr>
<td>Syngenta (No Velum)</td>
<td>Elatus-7.3 oz</td>
</tr>
<tr>
<td>Bayer</td>
<td>Proline-5.7 fl oz; ProvostOpti-10.7 fl oz</td>
</tr>
<tr>
<td>Nichino</td>
<td>Convoy-32 fl oz</td>
</tr>
</tbody>
</table>

Infurrow Application: Velum total 18 fl oz and Abound 18 fl oz.
Disease was low (< 30% defoliation)
**Stress** was noticed in the field
Nematode counts (350/cc)
Treatments varied but not significantly.
Value of the peanuts varied by $100/acre.
On average Peanut Rx programs work, but there is some variability.

http://edis.ifas.ufl.edu/pp334
There are multiple tools for peanut disease management.