Managing Thrips
A Midsouthern Perspective

S. D. Stewart et al.
It’s a Pest Complex and It Matters

- Identification is not easy ... and forget about immature stages
- Imidacloprid worse than Cruiser on WFT
- WFT harder to control with foliar insecticides

The good news ...

Tobacco thrips, Western flower thrips and Eastern flower thrips

Jack Reed
Most severe yield losses occur when some plant mortality is observed.
Thrips Control Demonstration (Tennessee)
Seedcotton Yield (PHY375 WRF, Planted May 9, 2011)

* Sprayed at 2nd leaf (3 WAP) with Acephate 90S ... untreated sprayed second time at 4th leaf

- **Untreated Seed**
  - Unsprayed: A
  - Sprayed*: B + $500

- **Gaucho 600 @ 10 oz/cwt**
  - Unsprayed: a + $769
  - Sprayed*: a + $857
Cotton Seed Treatment Choices (2012)
Company Offerings (Active Ingredients)

<table>
<thead>
<tr>
<th>Delta Pine (Monsanto)</th>
<th>Phytogen (Dow)</th>
<th>Stoneville, FiberMax (Bayer)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceleron I</td>
<td>Cruiser</td>
<td>Aeris</td>
</tr>
<tr>
<td>Acceleron FI</td>
<td>Cruiser Dynasty</td>
<td>Aeris + Trilex Advanced</td>
</tr>
<tr>
<td>Acceleron N</td>
<td>Avicta Complete</td>
<td>+ Poncho/Votivo</td>
</tr>
<tr>
<td>Imidacloprid</td>
<td>Thiamethoxam</td>
<td>Imidacloprid</td>
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<td>Imidacloprid</td>
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<tr>
<td>Thiamethoxam</td>
<td>Thiamethoxam</td>
<td>Clothianidin</td>
</tr>
<tr>
<td>Pyraclostrobin*</td>
<td>Fludioxonil*</td>
<td>Triadimenol*</td>
</tr>
<tr>
<td>Pyraclostrobin 2X</td>
<td>Azoxystrobin</td>
<td>Trifloxystrobin</td>
</tr>
<tr>
<td>Pyraclostrobin 2X</td>
<td>Triadimenol</td>
<td>Bacillus firmus</td>
</tr>
<tr>
<td>Trifloxystrobin*</td>
<td>Mefenoxam*</td>
<td>Metalaxyl*</td>
</tr>
<tr>
<td>Ipconazole</td>
<td>Fludioxonil</td>
<td>Triadimenol</td>
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<tr>
<td>Myclobutanil*</td>
<td>Myclobutanil</td>
<td>Metalaxyl</td>
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<tr>
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<td>Myclobutanil</td>
<td>Thiodicarb</td>
</tr>
<tr>
<td>Metalaxyl</td>
<td>TCMTB*</td>
<td>Ipconazole</td>
</tr>
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<td>Myclobutanil</td>
<td>Thiodicarb</td>
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<tr>
<td>Myclobutanil</td>
<td>TCMTB</td>
<td>Abamectin</td>
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</table>

* Asterisk = base fungicides if no insecticide or nematicide treatments are ordered (at 1X rates).

Clothianidin = Poncho, Thiamethoxam = Cruiser, Imidacloprid = Gaucho
Percent Thrips Control

Temik and Seed Treatments, 14 Trials (2003-2007)
(3.5-5 lbs) (Gaucho Grande/Aeris/Cruiser/Avicta CP)

Stewart (UT) & Lorenz (UA)

- 6%
16%
37%
Percent Thrips Control
Temik and Seed Treatments, 28 Trials (2000-2006)
(3.5-5 lbs) (Gaucho Grande/Cruiser/Avicta Complete Pak)

Roberts et al. (University of Georgia)

- 2WAP
- 3WAP
- 4WAP

Temik
- 16%
- 28%
- 40%

Seed Trt
- 0%
- 20%
- 40%

Percent Control
Thrips Trials - Yield (Lb Lint/Acre)

Stewart (UT) and Lorenz (UA)
14 Trials from 2003-2007, WTES and Arkansas

N = 8 in TN, 6 in AR  P < 0.05
Yield Response to Thrips Control
Temik and Seed Treatments, 20 Trials (Roberta, GA 2001-2009)
(3.5-5.0 lbs/acre) (Cruiser/Avicta and Gaucho/Aeris)

Average increase = 329 lb lint/acre in high-risk environments

At-planting treatments are not always necessary but are also not always enough (especially seed treatments)
Regional Thrips Project
Akin, Toews, et al. (2009-2011)

- 3 x 4 factorial, 4 reps

- At-plant insecticide
  - None (UTC)
  - Temik
  - Aeris

- Foliar application of 0.2 lb ai/acre acephate
  - Unsprayed
  - 1-2 leaf stage
  - 3-4 leaf stage
  - 1-2 and 3-4 leaf stages
Seedcotton Yield, 2009

Across all locations and at-planting treatments

![Graph showing Seedcotton yield (lb per acre) across different treatments: Untreated, 1-2 Leaf, 3-4 Leaf, 1-2 + 3-4 Leaf. The graph indicates a statistically insignificant effect with F = 1.96, df = 3, 418.4, P = 0.119.]
Regional Thrips Trial (TN, 2011)
At-Planting and Acephate Applications (1st, 3rd or 1st + 3rd Leaf)

Seedcotton (Lb/A)
Foliar Options
Thrips Trial in Cotton (TN, 2012)

Number per 5 Plants

- Quadris (6)
- Quadris (6) + Acephate 90 (4)
- Acephate 90 (4)
- Benevia, HG85 (10)
- Radiant (1.5)
- Untreated

All with Dyne-Amic (0.625% v/v)
Foliar Options

Immature Thrips – Selected Treatments (Herbert, 2012, VA)

Treatments were applied on May 14 and May 21.

- Untreated
- Orthene 97 @ 4 oz
- Benevia @ 20.6 oz
- Radiant SC @ 6 oz
- Karate Z @ 1.28 oz
- Dimethoate 4EC @ 8 oz

Graph showing the number of immature thrips per 5 plants from 15-May to 5-Jun.
Foliar Options

Plant Injury – Selected Treatments (Herbert, 2012, VA)

0 = no injury, 5 = dead plants

- Orthene 97 @ 4 oz
- Benevia @ 20.6 oz
- Radiant SC @ 6 oz
- Karate Z @ 1.28 oz
- Dimethoate 4EC @ 8 oz

DON’T USE PYRETHROID INSECTICIDES FOR THRIPS CONTROL
Foliar Sprays for Thrips (4 DAT)

<table>
<thead>
<tr>
<th>Product</th>
<th>Adults</th>
<th>Immatures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Untreated</td>
<td>0</td>
<td>ab</td>
</tr>
<tr>
<td>Radiant 1.5 floz</td>
<td>a</td>
<td>cd</td>
</tr>
<tr>
<td>Radiant 3.0 floz</td>
<td>d</td>
<td>b</td>
</tr>
<tr>
<td>Acephate 3.2 oz</td>
<td>d</td>
<td>b</td>
</tr>
<tr>
<td>Acephate 8 oz</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td>Dimethoate 3.2 floz</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td>Dimethoate 4 floz</td>
<td>b</td>
<td>d</td>
</tr>
<tr>
<td>Bidrin 3.2 floz</td>
<td>b</td>
<td>d</td>
</tr>
<tr>
<td>Lannate 0.25 LAA</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td>HGW 0.134 LAA</td>
<td>d</td>
<td>d</td>
</tr>
<tr>
<td>Radiant 1.5 + Acephate 3.2 oz</td>
<td>ab</td>
<td>ab</td>
</tr>
</tbody>
</table>

50:50 WFT:TT

Radiant included Dyne-Amic 0.5% v/v
HGW086 (20 oz) included MSO 0.25% and Buffer Xtra 0.125%

David Kerns
LSU AgCenter 2012
Alternatives to Temik

Plant Injury Ratings – High Rates (Herbert, 2012, VA)

0 = no injury, 5 = dead plants

All treatments applied in-furrow (at planting)
Seed treatments vs Infurrow Sprays for Thrips (13 DAE)

- Untreated
- Admire Pro INF 9.3 fl oz
- Gaucho ST
- Centric INF 18.87 oz
- Cruiser ST
- Temik INF 3.5 lbs

Thrips per 10 plants

Adults
Immatures

50:50 WFT:TT

David Kerns
LSU AgCenter 2012
Seed treatments vs Infurrow Sprays for Thrips (21 DAE)

50:50 WFT:TT

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Adults</th>
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<tbody>
<tr>
<td>Untreated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Admire Pro INF 9.3 fl oz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gaucho ST</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centric INF 18.87 oz</td>
<td>bc</td>
<td></td>
</tr>
<tr>
<td>Cruiser ST</td>
<td>bc</td>
<td></td>
</tr>
<tr>
<td>Temik INF 3.5 lbs</td>
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David Kerns
LSU AgCenter 2012
Seed treatments vs Infurrow Sprays for Thrips (25 DAE)

50:50 WFT:TT

Damage (1-5 Scale)

Untreated
Admire Pro INF 9.3 fl oz
Gaucho ST
Centric INF 18.87 oz
Cruiser ST
Temik INF 3.5 lbs

David Kerns
LSU AgCenter 2012
Thrips Injury

- Untreated + Foliar
- Gaucho + Foliar
- Cruiser + Foliar

imidacloprid (Stoneville)  (thiamethoxam? (Phytogen))
Thrips per 5 Plants (22 DAP)
Midsouth Regional Cotton IST (Tennessee, 2012)

... but not a lot of thrips

Very high pre-emerge herbicide rates
Thrips Injury (27 DAP)
Midsouth Regional Cotton IST (Tennessee, 2012)

Very high pre-emerge herbicides rates
Thrips Management Summary

- Use an at-planting systemic insecticide
- Consider aggravating factors
  - Planting date, tillage practices, thrips pressure and plant stress (weather, herbicide risks)
    - Early planting, conventional tillage, and cool and dry weather is a high risk scenario
- Scout and treat
  - Most data shows that the any maximum benefit of a foliar application occurs when it is made before the 2nd true leaf
    - Pay close attention to injury on the emerging 1st true leaf
      - Presence of immatures is a warning sign
    - Use Radiant if predominant species is western flower thrips
    - Two foliar applications over at-planting seed treatment is RARELY justified unless....