Thrips Management in Cotton
# At-Planting Insecticides

<table>
<thead>
<tr>
<th>Product</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temik 15G</td>
<td>aldicarb</td>
</tr>
<tr>
<td>Aeris</td>
<td>imidacloprid, thiodicarb</td>
</tr>
<tr>
<td>Avicta Complete Cotton</td>
<td>thiamethoxam, abamectin</td>
</tr>
<tr>
<td>Others: Gaucho, Cruiser, acephate IF, etc</td>
<td></td>
</tr>
</tbody>
</table>


Temik® Timeline

December 31, 2014 - last date of sale by Bayer CropScience

December 31, 2016 - last date of sales by distribution channel to the end user

August 31, 2018 - last use date by end user
Foliar Insecticides

acephate (*Orthene, Acephate, etc*)
dicrotophos (*Bidrin*)
dimethoate (*Dimethoate*)
spinetoram (*Radiant, [2ee]*)
Efficacy of At-Planting Insecticides

Delta Silt Loam

Thrips immatures / 5 plants

Imidacloprid

Temik

Non-Treated

0
10
20
30
40
50
60
70
80

a

b

b

a
Efficacy of At-Planting Insecticides

Delta Clay

Thrips immatures / 5 plants

- Imidacloprid
- Temik
- Non-Treated
Efficacy of At-Planting Insecticides

Macon Ridge Silt Loam

Thrips immatures / 5 plants

Imidacloprid

Temik

Non-Treated
Efficacy of At-Planting Insecticides Yield

Delta Silt Loam

<table>
<thead>
<tr>
<th>Treatment</th>
<th>First Harvest Yield</th>
<th>Percent First Harvest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imidacloprid</td>
<td>1550</td>
<td>a</td>
</tr>
<tr>
<td>Temik</td>
<td>1500</td>
<td>a</td>
</tr>
<tr>
<td>Non-Treated</td>
<td>1350</td>
<td>b</td>
</tr>
</tbody>
</table>

The graph shows the yield and percent first harvest for different treatments on Delta Silt Loam soil. The treatments include Imidacloprid, Temik, and Non-Treated.
Efficacy of At-Planting Insecticides Yield

Delta Clay

- Imidacloprid
- Temik
- Non-Treated

Yield Percent First Harvest

- Imidacloprid: a
- Temik: a
- Non-Treated: b
Efficacy of At-Planting Insecticides Yield

Macon Ridge Silt Loam

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Percent First Harvest</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imidacloprid</td>
<td>a</td>
<td>1450</td>
</tr>
<tr>
<td>Temik</td>
<td>a</td>
<td>1400</td>
</tr>
<tr>
<td>Non-Treated</td>
<td>b</td>
<td>1350</td>
</tr>
</tbody>
</table>

Note: Means sharing a letter are not significantly different.
<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Kerns</td>
<td>AgriLIFE EXTENSION, Texas A&amp;M System</td>
</tr>
<tr>
<td>Scott Stewart</td>
<td>Extension</td>
</tr>
<tr>
<td>Philip Roberts</td>
<td>The University of Georgia</td>
</tr>
<tr>
<td>Mike Toews</td>
<td>Mizzou University of Missouri</td>
</tr>
<tr>
<td>Kelly Tindall</td>
<td></td>
</tr>
<tr>
<td>Jeremy Greene</td>
<td>CLEMSON UNIVERSITY</td>
</tr>
<tr>
<td>Scott Akin</td>
<td>UNIVERSITY OF ARKANS DIVISION OF AGRICULTURE</td>
</tr>
<tr>
<td>Gus Lorenz</td>
<td></td>
</tr>
<tr>
<td>Glenn Studebaker</td>
<td></td>
</tr>
<tr>
<td>Jack Bacheler</td>
<td>VIRGINIA TECH.</td>
</tr>
<tr>
<td>Dominic Reisig</td>
<td>Agricultural Research Service</td>
</tr>
<tr>
<td>Angus Catchot</td>
<td>MISSISSIPPI STATE UNIVERSITY</td>
</tr>
<tr>
<td>Steve Micinski</td>
<td></td>
</tr>
<tr>
<td>Jeff Gore</td>
<td></td>
</tr>
<tr>
<td>Jack Reed</td>
<td></td>
</tr>
<tr>
<td>Don Cook</td>
<td></td>
</tr>
<tr>
<td>Ames Herbert</td>
<td></td>
</tr>
</tbody>
</table>
# Evaluation of Automatic Insecticide Applications for Thrips to Supplement At-Planting Insecticide Treatments

<table>
<thead>
<tr>
<th>At-Planting Treatment</th>
<th>Foliar Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temik 15G</td>
<td>1-2 Leaf</td>
</tr>
<tr>
<td>Aeris</td>
<td>3-4 Leaf</td>
</tr>
<tr>
<td>Non-Treated</td>
<td>1-2 Leaf + 3-4 Leaf</td>
</tr>
<tr>
<td>Avicta (optional)</td>
<td>Non-Treated</td>
</tr>
</tbody>
</table>
Efficacy of At-Planting Insecticides

2009 10-14 DAE

Thrips Immatures / 5 plants

- Aeris
- Temik
- Non-Treated

***

BC, LA E, NC J, TN K, AR R, AR Sta, MS Sto, MS S, VA T, GA T, GA W, LA
Efficacy of At-Planting Insecticides

2009 10-14 DAE

Thrips Immatures / 5 plants

- Aeris
- Temik
- Non-Treated

Locations:
- BC, LA
- R, AR
- Sto, MS
- W, LA
Efficacy of At-Planting Insecticides

2010 10-14 DAE

Thrips Immatures / 5 plants

Aeris
Temik
Non-Treated

B, SC
BC, LA
E, NC
J, TN
L, AR
P, MO
R, AR
Sta, MS
Sto, MS
T, GA
T, GA
W, LA

0
10
20
30
40
50
60
70
80
90
100

***
374

***
162
Efficacy of At-Planting Insecticides

2010 10-14 DAE

Thrips Immatures / 5 plants

- Aeris
- Temik
- Non-Treated

BC, LA: 374
W, LA: 162
Efficacy of At-Planting Insecticides
19 DAE 2009

Thrips Immatures / 5 plants

Aeris
Avicta
Temik
Non-Treated

A
b
b
b
Efficacy of At-Planting Insecticides

13 DAE 2010

![Bar graph showing the efficacy of different insecticides against thrips immatures. The graph compares Aeris, Avicta, Temik, and Non-Treated samples. The Non-Treated sample shows significantly higher thrips immatures compared to the treated ones.]
Impact of At-Planting Insecticides on Plant Height
3-5 days after 3-4 Leaf 2009

Inches

Aeris | Temik | Non-Treated
--- | --- | ---
a | a | b
Impact of At-Planting Insecticides on Plant Height

3-5 days after 3-4 Leaf 2009

Inches

<table>
<thead>
<tr>
<th></th>
<th>1-2 Leaf</th>
<th>3-4 Leaf</th>
<th>1-2 + 3-4 Leaf</th>
<th>Non-Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>
Impact of At-Planting Insecticides on Plant Height
4 Leaf, Stoneville 2009

13.5 in rainfall
Impact of At-Planting Insecticides on Yield

2009

Impact of At-Planting Insecticides on Yield

Aeris
Temik
Non-Treated

BC, LA
E, NC
J, TN
K, AR
R, AR
Sta, MS
Sto, MS
S, VA
T, GA
W, LA

lb lint / acre

***

0
300
600
900
1200
1500
Impact of At-Planting Insecticides on Yield

2009

Aeris

Temik

Non-Treated

lb lint / acre

BC, LA

R, AR

Sto, MS

W, LA
Impact of At-Planting Insecticides on Yield

2010

Aeris
Temik
Non-Treated


0  400  800  1200  1600

lb lint / acre

***

The chart shows the impact of At-Planting Insecticides on yield in 2010. Various locations are listed along the x-axis, and the yield in lb lint per acre is shown along the y-axis. The chart compares the yields for Aeris, Temik, and Non-Treated treatments.
Impact of At-Planting Insecticides on Yield

2010

<table>
<thead>
<tr>
<th>Location</th>
<th>Aeris</th>
<th>Temik</th>
<th>Non-Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>BC, LA</td>
<td>360</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>R, AR</td>
<td>900</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Sto, MS</td>
<td>1200</td>
<td>1300</td>
<td>1300</td>
</tr>
<tr>
<td>W, LA</td>
<td>900</td>
<td>1100</td>
<td>1100</td>
</tr>
</tbody>
</table>

(lb lint / acre)
Impact of At-Planting Insecticides on Yield
Stoneville 2009

Lb lint / acre

Aeris | Avicta | Temik | Non-Treated

- Aeris: b
- Avicta: ab
- Temik: a
- Non-Treated: b
Impact of At-Planting Insecticides on Yield

Stoneville 2009

- 1000 lb lint / acre
- 1100 lb lint / acre

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Lb lint / acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 Leaf</td>
<td>900</td>
</tr>
<tr>
<td>3-4 Leaf</td>
<td>950</td>
</tr>
<tr>
<td>1-2 + 3-4 Leaf</td>
<td>1000</td>
</tr>
<tr>
<td>Non-Treated</td>
<td>1050</td>
</tr>
</tbody>
</table>
Impact of At-Planting Insecticides on Yield

Stoneville 2010

<table>
<thead>
<tr>
<th>Insecticide</th>
<th>Yield (lb lint / acre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aeris</td>
<td>1150</td>
</tr>
<tr>
<td>Avicta</td>
<td>1050</td>
</tr>
<tr>
<td>Temik</td>
<td>950</td>
</tr>
<tr>
<td>Non-Treated</td>
<td>850</td>
</tr>
</tbody>
</table>
Impact of At-Planting Insecticides on Yield

Stoneville 2010

<table>
<thead>
<tr>
<th>Treatment</th>
<th>1-2 Leaf</th>
<th>3-4 Leaf</th>
<th>1-2 + 3-4 Leaf</th>
<th>Non-Treated</th>
</tr>
</thead>
<tbody>
<tr>
<td>lb lint / acre</td>
<td>1050</td>
<td>1150</td>
<td>1050</td>
<td>1150</td>
</tr>
</tbody>
</table>

1-2 Leaf: 1050 lb lint / acre
3-4 Leaf: 1150 lb lint / acre
1-2 + 3-4 Leaf: 1050 lb lint / acre
Non-Treated: 1150 lb lint / acre
Tobacco thrips
Western flower thrips
Flower thrips
Soybean thrips
Onion thrips

Reed et al. 2010