New Technologies/
New Use Patterns for Current Products
in Cotton IPM

Crop Management Seminar
Wednesday, November 10, 2010

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University of Arkansas Cooperative Extension Service
New Technology

BELT™

Coragen®
insecticida
powered by RYNAXYPYR

Transform™
Insecticide
WG

TwinLink®
BT COTTON

™Trademark of Dow AgroSciences LLC
Efficacy of *Belt*® and *Coragen*® (15 DAT)

Grady, AR (Lorenz) – 8/4/2009

![Bar chart showing percent damaged fruiting structures for various treatments.](chart.png)

- UTC
- Tracer 2 fl oz
- Hero 5.2 fl oz
- Brigadier 10.24 fl oz
- Declare 4.1 fl oz
- Brigadier 10.24 fl oz + Tracer 2 fl oz
- Declare 4.1 fl oz + Tracer 2 fl oz
- Hero 5.2 fl oz + Tracer 2 fl oz
- Belt 3 fl oz
- Coragen 0.088 lb ai/A

Percent Damaged Fruiting Structures

α=0.05
Efficacy of Coragen® and Belt® (15 DAT)

Tillar, AR (Lorenz) – 8/4/2009

UTC
Tracer 2 fl oz
Brigadier 10.24 fl oz + Tracer 2 fl oz
Hero 5.2 fl oz
Brigadier 10.24 fl oz
Declare 4.1 fl oz
Declare 4.1 fl oz + Tracer 2 fl oz
Hero 5.2 fl oz + Tracer 2 fl oz
Belt 3 fl oz
Coragen 0.088 lb ai/A

Total Larvae Found

α=0.05
Evolution of Commercialized Bt Cotton

1996
Bollgard®
Single-gene
cry1Ac
(endotoxin)

2003
Bollgard II®
cry1Ac+cry2Ab
(endotoxins)

2005
WideStrike®
cry1Ac+cry1F
(endotoxins)

?2013?
TwinLink®
Cry1Ab + Cry2Ae
(endotoxins)

???
VipCot®
Novel protein
cry1Ab+Vip3A
(endo+exotoxin)
TwinLink® Cotton
Tillar, AR (Lorenz) – 8/3/2010

% Damaged Squares

<table>
<thead>
<tr>
<th>Treatment</th>
<th>% Damaged Squares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glytol Only (Non-Bt)</td>
<td>a</td>
</tr>
<tr>
<td>Glytol Only (Non-Bt) + Belt</td>
<td>a</td>
</tr>
<tr>
<td>BCSX1518 Twinlink x GlyTol B</td>
<td>ab</td>
</tr>
<tr>
<td>Coker Twinlink x GlyTol A</td>
<td>b</td>
</tr>
<tr>
<td>BCSX1518 Twinlink x GlyTol B + Belt</td>
<td>b</td>
</tr>
<tr>
<td>Coker Twinlink x GlyTol A + Belt</td>
<td>b</td>
</tr>
</tbody>
</table>

α = 0.05
Bollworm Efficacy from Twinlink®?

Bollgard®
(cry1Ac)

Bollgard II®
(cry1Ac+cry2Ab)

Fair control

Good control

WideStrike®
(cry1Ac+cry1F)

‘TwinLink’
(Cry1Ab + Cry2Ae)

Still have to be scouted carefully!
New Uses for Current Products?
Creativity is key!
Impact of Side-dressed Temik® on Yield

**Cook et al. 2008-09**

<table>
<thead>
<tr>
<th>Year</th>
<th>Untreated</th>
<th>Temik 10 lb/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>800</td>
<td>900 (+78 lbs)</td>
</tr>
<tr>
<td>2009</td>
<td>78 lb</td>
<td>900 (+65 lbs)</td>
</tr>
</tbody>
</table>

P>F = 0.01
**Program 1**

1. **Diamond 6 fl oz**
2. **Diamond 6 fl oz**
3. Bidrin 6 fl oz + Bifenthrin 6 fl oz
4. Carbine 2.5 oz
5. Orthene 1 lb ai

**Program 2**

1. **Diamond 9 fl oz**
2. Endigo 5 fl oz
3. Bidrin 6 fl oz + Bifenthrin 6 fl oz
4. Carbine 2.5 oz
5. Orthene 1 lb ai

**Program 3**

1. Orthene 1 lb ai
2. Endigo 5 fl oz
3. Bidrin 6 fl oz + Bifenthrin 6 fl oz
4. Carbine 2.5 oz
5. Orthene 1 lb ai

Application #1 made 2nd week of bloom
Applications made weekly (as needed)
RCB, 6 reps / 32 rows x 100 ft plots
Kelso, AR -- Steve Stevens Farm
Diamond Program Trial Yield

Kelso, AR – Harvested 9/21/10

α = 0.05, nsd

Program 1: Diamond 6 + Diamond 6
Program 2: Diamond 9
Program 3: No Diamond

Lbs lint/A
Diamond was applied alone at 9 oz./A during the third week of squaring to half of the field and Centric was applied to the other half of the field on the same date.
No. TPB nymphs per 10 row feet (7 DAT)
Marianna, AR-- 2008

$\alpha = 0.05$

- Untreated
- Acephate (0.5 lb ai)
- Bidrin (5 fl oz)
- Bifenthrin (5 fl oz) + Bidrin (5 fl oz)
- Bifenthrin (5 fl oz) + Acephate (0.5 lb ai)

Akin & Lorenz 2008