Challenges to IPM in the Farm Landscape

B. R. Leonard
Integrated Pest Management For Cotton

“INTEGRATE”

Nearly Every Production Decision is Capable of Influencing Another Decision Made Later in the Season

.....Yesterday vs Today (Costs and Available Tools)
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Making Profitable Pest Management Decisions Depend on an Individual Producer’s Management Style..... And the Ag Professional Making a Recommendation
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- The Cotton Industry – Troubled Times
  - Crop Input Costs vs Crop Value
  - Evolving Pest Problems (Emerging Issues and Resistance)
  - Limited Tools
  - Regulatory Issues
  - Are You The Real Decision Maker?
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- The Cotton Industry – Troubled Times
- Evolving Production Systems
Pre-Plant Vegetation Management Strategies
Evolution of Commercial Bt Corn & Cotton

1996
Bollgard
Single gene
Cry1Ac
(endotoxin)

1998
YieldGard
Single gene
Cry1Ab
(endotoxin)

2003
Herculex
Single gene
Cry1F
(endotoxin)

2003
Bollgard II
Stack genes
Cry1Ac +
Cry2Ab
(endotoxins)

2005
WideStrike
Stack genes
Cry1Ac +
Cry1F
(endotoxins)

2009
YieldGard VT
Pro
Stack genes
Cry1A.105 +
Cry2Ab +
Cry1F
(endotoxins)

2010
SmartStax
Stack genes
Cry1A.105 +
Cry2Ab +
Cry1F
(endotoxins)

2011
Viptera
(AgriSure 3111)
Stack genes
Novel Protein
Vip3A +
Cry1Ab
(exotoxin /
endotoxins)

2012
WideStrike
Advanced
Stack genes
Novel Protein
Vip3A +
Cry1Ac +
Cry1F
(exotoxin /
endotoxins)

2013
Bollgard III
Stack genes
Novel Protein
Vip3A +
Cry1Ac +
Cry2Ab
(exotoxin /
endotoxins)
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- The Cotton Industry – Troubled Times
- Evolving Production Systems

- Crop Rotations and the Farmscape

Annual Decisions – Profit Potential – Input Costs
Field Borders and Source Fields
Importance of Field Border Effects
Post-Harvest Fall Vegetation Issues
Integrated Pest Management For Cotton

- The Cotton Industry – Troubled times
- Evolving Production Systems Fast
- Crop Rotations and the Farmscape

- Best Management Practices (BMP’s)
  - Protection of the Environment
  - Soil Productivity
  - Sustainable Cropping Systems
  - Requirements in Some Federal Programs
Integrated Pest Management for Cotton

- The Cotton Industry – Troubled times
- Evolving Production Systems Fast
- Crop Rotations and the Farmscape
- Best Management Practices (BMP’s)

- Weed and Arthropod Insect Management
  - “Miss a Weed and Save an Insect”
  - Can’t plant/spray out of these problems
Weed Resistance and Herbicide Use Strategies
Costs of “Control”

Application Frequency
Evolution of Actual Use Rates
Product Costs (New vs Standard)
Integrated Pest Management For Cotton

- The Cotton Industry – Troubled times
- Evolving Production Systems Fast
- Crop Rotations and the Farmscape
- Best Management Practices (BMP’s)
- Weed and Arthropod Management

- Who is making the decisions?
  - Basic Companies, Dealers, Applicators, etc.
  - Producer (the one who pays)
FINAL DECISIONS ON THE SPECIFIC INSECTICIDE TREATMENT SHOULD BE A JOINT DECISION BETWEEN THE AG CONSULTANT AND THE PRODUCER!
** It is rare that Agricultural Consultants can recommend products to control a single pest.
Integrated Pest Management For Cotton

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- Best Management Practices (BMP’s)
- Weeds and Arthropod Management
- Who is Making the Decisions?

- Are You Getting What You Want and Pay For?
  - Seed, Traits, ST’s, Sprays
Bt Traits and Herbicide Resistance
The Seed Treatment Revolution
DP 488 BG/RR

LOT # 466-E-4571-H62A 0084 ORIGIN AZ

TEST DATE 04/06 U.S. PATENT NUMBER 6927325

04-01-06 U.S. PROTECTED VARIETY - PVPA 1994

APPROX SEED PER BAG 250,000

APPROX SEED PER LB 5289

NET WT. 47.41 LB 21.5 KG
### Table 1. A list of common and trade names for selected basic and generic insecticides used in LA row crops

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<th>Common Name</th>
<th>Trade name</th>
<th>Formulation</th>
<th># or % Al</th>
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<td>CS</td>
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<td>Agrilliance</td>
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<td>WG</td>
<td>24%</td>
<td>Nufarm</td>
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<td>Karate-Z</td>
<td>CS</td>
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- Weeds and Arthropod Management
- Who is Making the Decisions
- Are You Getting What You Want and Pay For

- IPM Should Not be a Covert Activity!
  - Cotton Industry - Good Stewards
  - Nobody Knows – Publications and People
Successful and Sustainable Pest Management

Regardless of Crop...
depends on integration
Integrated Pest Management
For Cotton

What To Do – Easier Said Than Done!

- Make an IPM Plan and Stick to It
- Recognize “Weed to Bug“ Problems
- Use All Available Information
- If It Does Not Fit, Do Not Buy It
- Take Action Before Someone Else Does

“INTEGRATE”
• Equipment / Handling
• Application Timing
• Application Patterns
• Soil Moisture
Louisiana Cotton Producers Association

COTTON INCORPORATED

Building Markets For Cotton And Cotton Products