

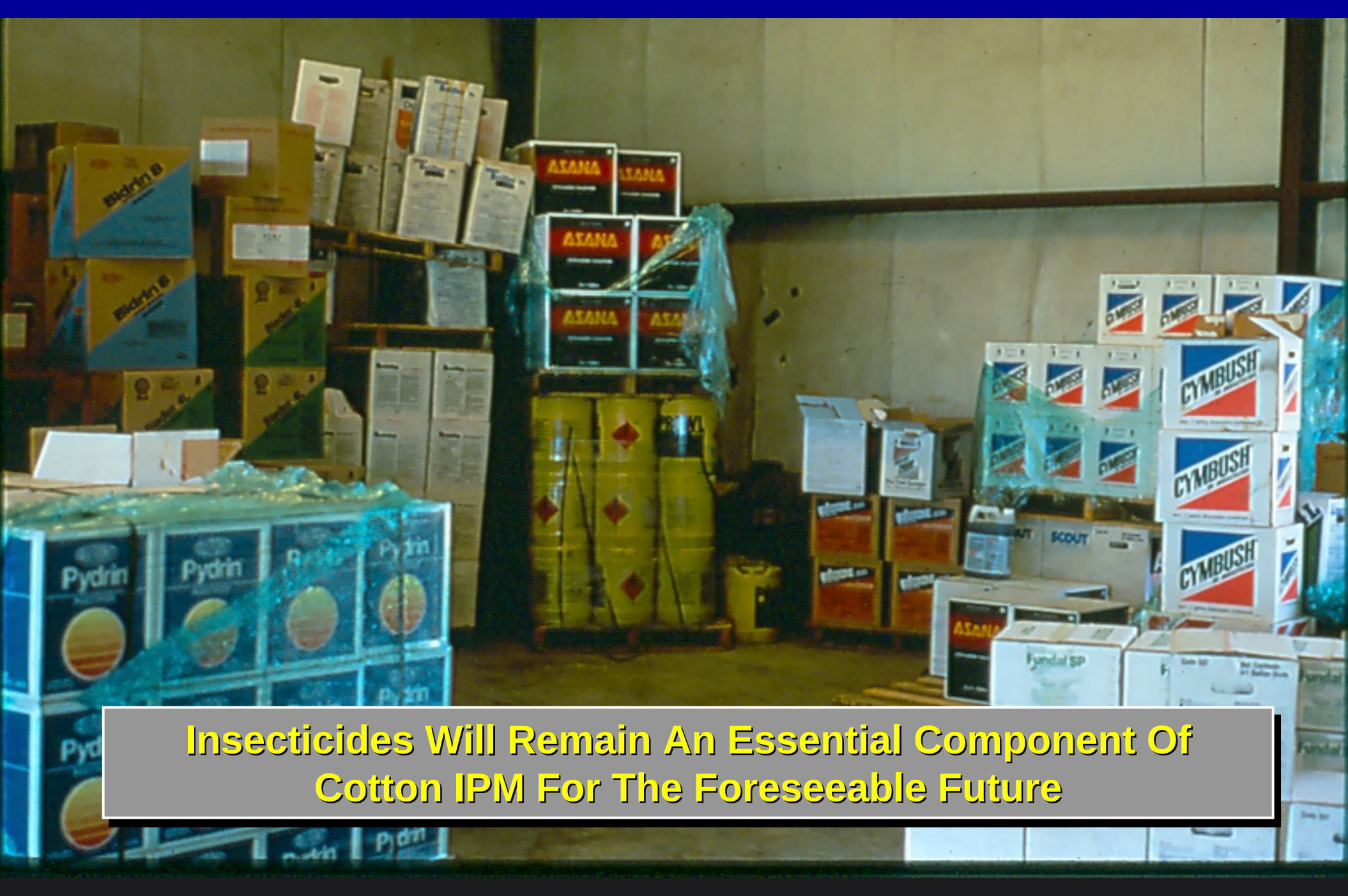
Arthropod Pest Management: What's in the Pipeline for Cotton Producers?

B. R. Leonard



Discussion Topics

- **Conventional Pesticides**
- **Transgenic Products**
- **Sampling Tools**
- **Application Systems**



**Insecticides Will Remain An Essential Component Of
Cotton IPM For The Foreseeable Future**

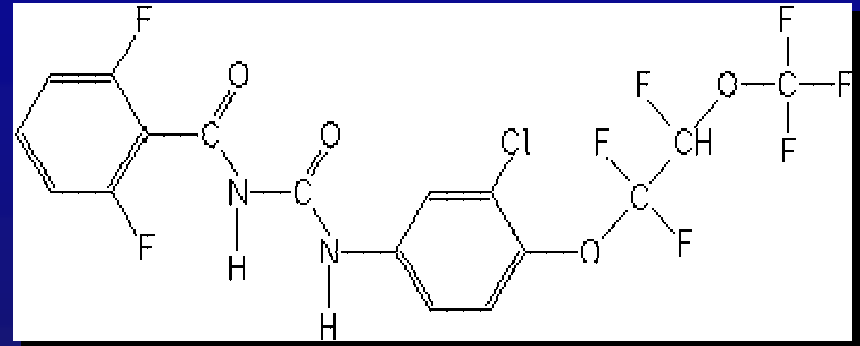
Choosing the Correct Insecticide is Challenging !!!

- **Cost**
 - **Efficacy on Target Pest**
 - **Non-Target Pest Spectrum**
 - **Residual Properties**
 - **Coincidental Impact on Beneficials**
-

Diamond 0.83EC

(Benzolphenyl Urea)

- Novaluron
- Chemtura
- MOA; IGR
- Moderate Rate Range
- Targets; Bugs, **Armyworms**
- Labeled 2004

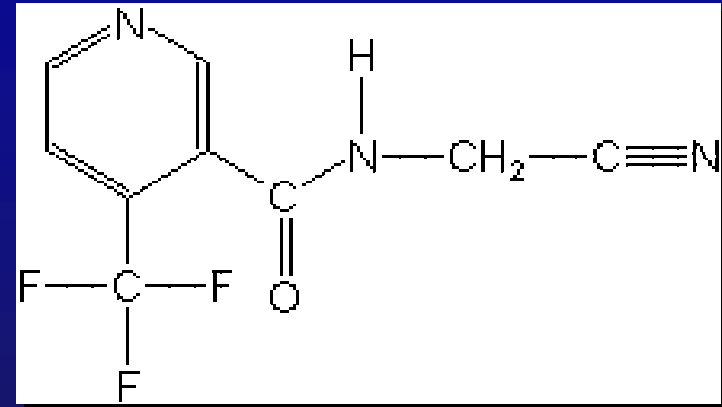


Key Notes: Active on Nymphs
Long residual
Ovicidal

Carbine 50WP

(Pyridine Carboxamide)

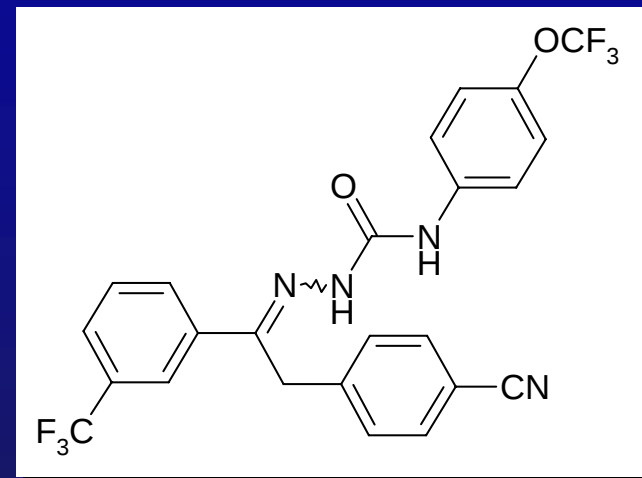
- Flonicamid; F-1785
- FMC; ISK
- MOA; Nervous System (Ca⁺)
- Low Rate Range
- Targets; Bugs, **Aphids**, Whiteflies
- Labeled 2006



Key Notes: Proposed new MOA
Feeding inhibition > damage reduction

Alverde SC/EC (Vegetables) (Metaflumizone)

- Semicarbazone
- BASF
- MOA; Nervous System (Na^+)
- Targets; Lepidoptera, “Bugs”, Beetles
- Low Rate Range
- Label in Cotton 2008 (Anticipated)



Novel Lepidopteran Insecticides

Common	Trade	Company
Chlorantraniliprole (Rynaxypyr)	Altacor	DuPont
Flubendiamide	Belt	Bayer CropScience

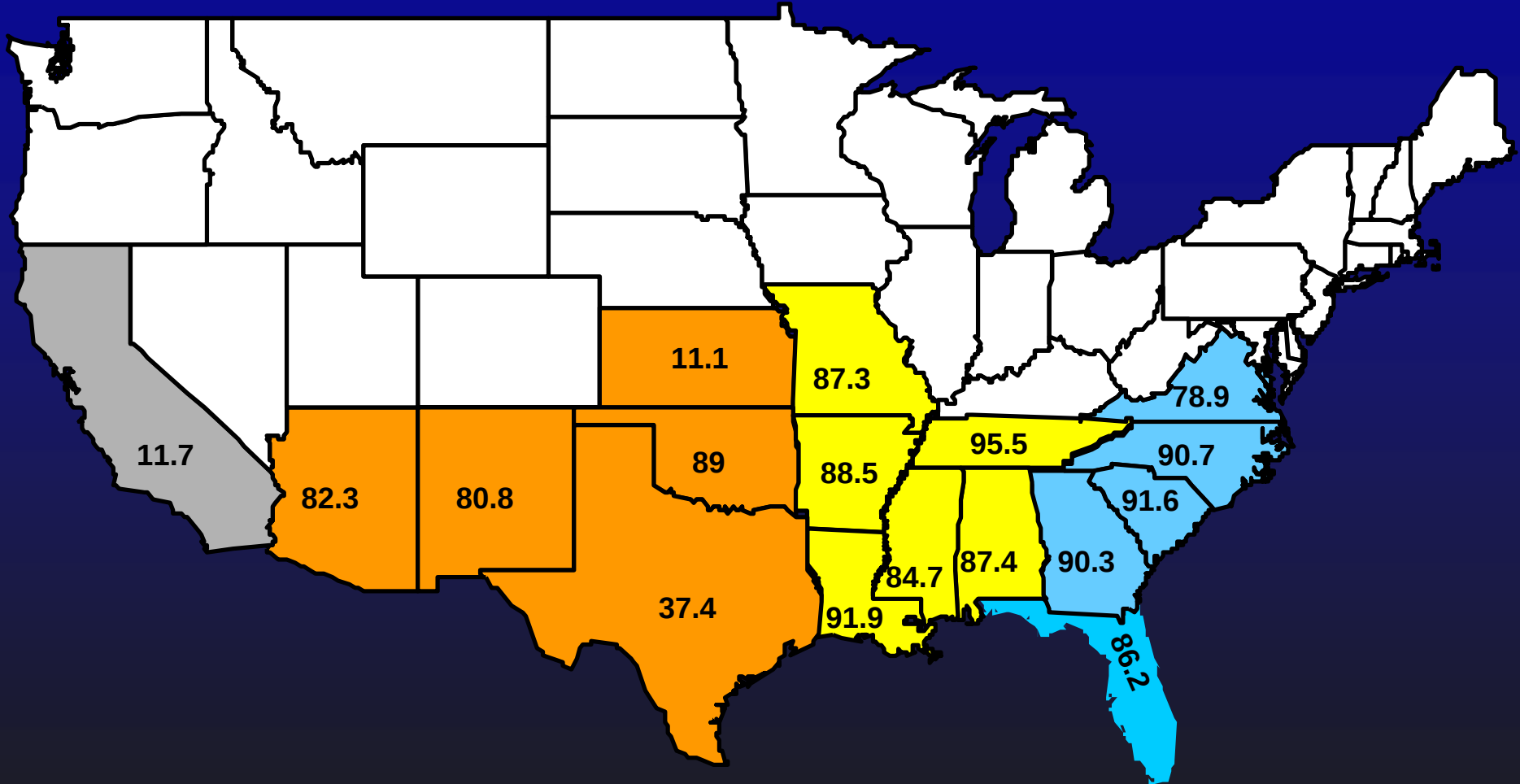
Novel Acaricide/Insecticides

Common	Trade	Company
Abamectin	Abba	Makhteshim Agan
Abamectin	Zephyr	Syngenta
Bifenazate	Acramite	Chemtura
Etoxazole	Zeal	Valent
Fenpyroximate	FujiMite	Nichino America, Inc
Spiromesifen	Oberon	Bayer CropScience

Insecticide Combinations

Name	Compounds	Company
Aeris	Imidacloprid + Thiodicarb	Bayer CropScience
Endigo	Lambda-cyhalothrin + Thiamethoxam	Syngenta

U.S. Cotton Belt Bollgard & Bollgard II Planted Acreage (%) - 2006



Data Adapted from Agricultural Marketing Service Cotton Program, USDA-2006

Evolution of Commercialized Bt Cotton

1996
Bollgard
Single gene
cry1Ac
(endotoxin)

2003
Bollgard II
Stacked genes
cry1Ac + *cry2Ab*
(endotoxins)

2005
Widestrike
Stacked genes
cry1Ac + *cry1f*
(endotoxins)

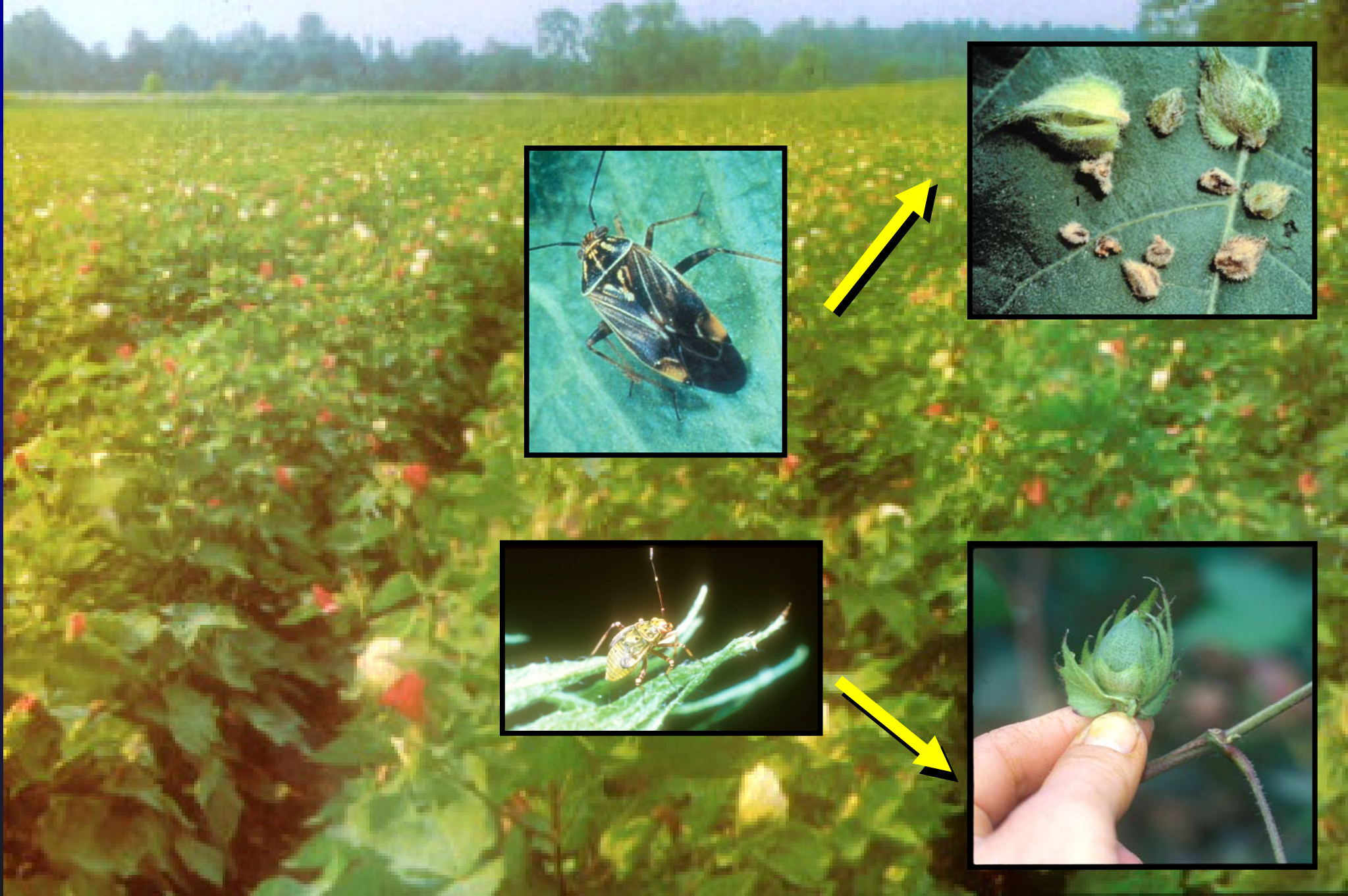
2008
VipCot
Novel Protein
Vip3A + *cry1Ac*
(exo/endotoxins)

2009
Bayer BTX
Stacked
genes
Cry Proteins



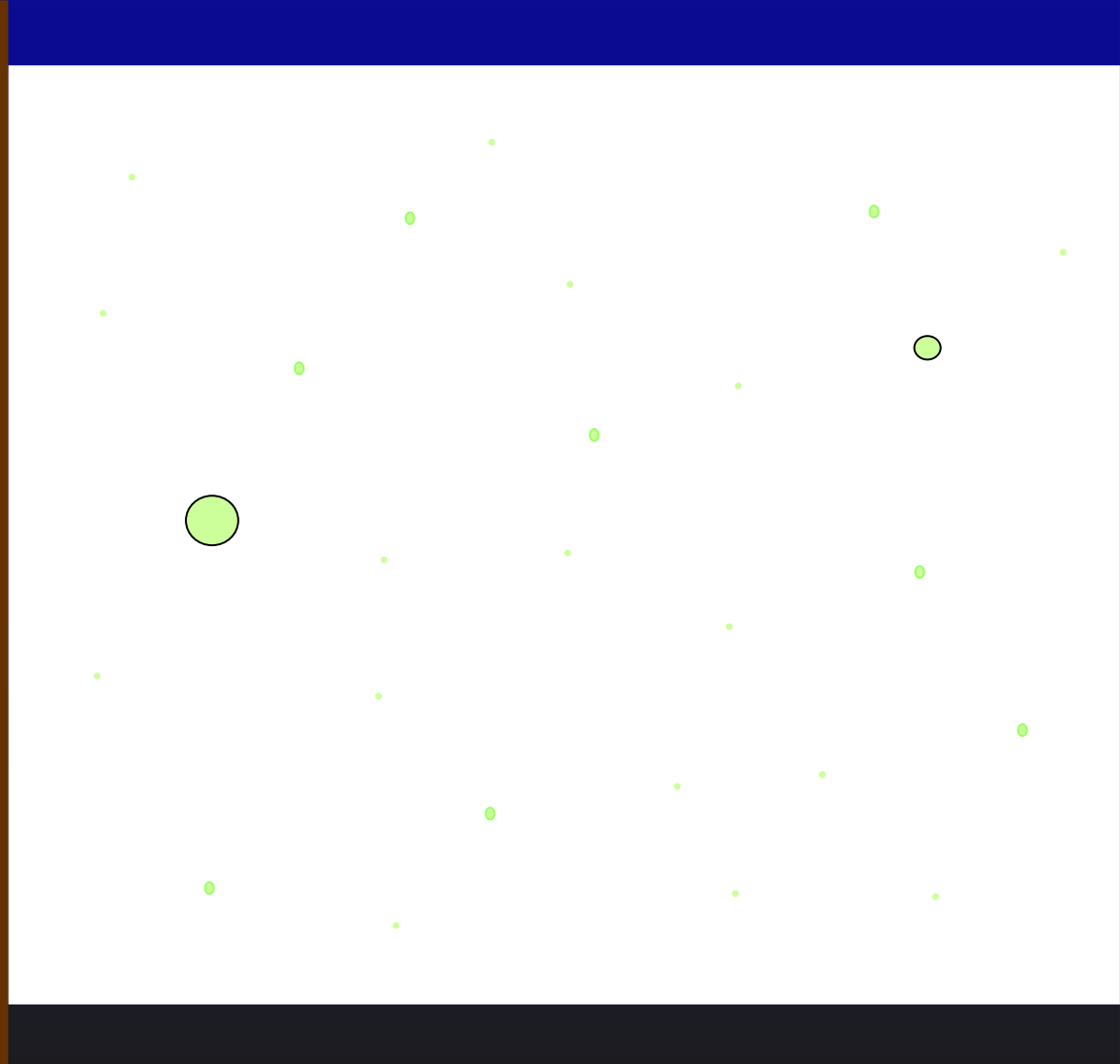
+







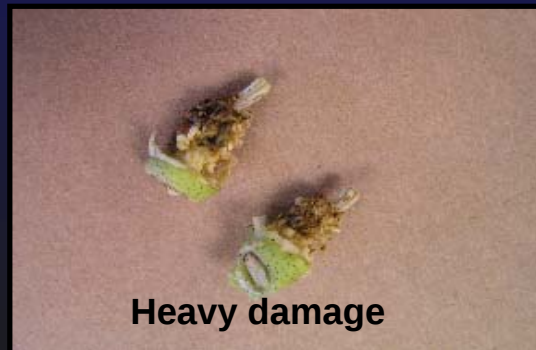
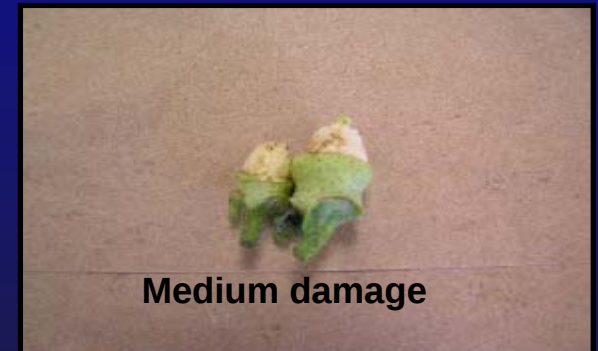
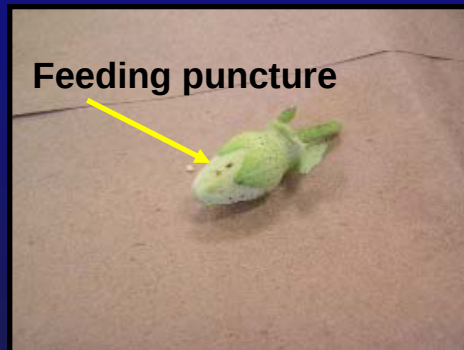
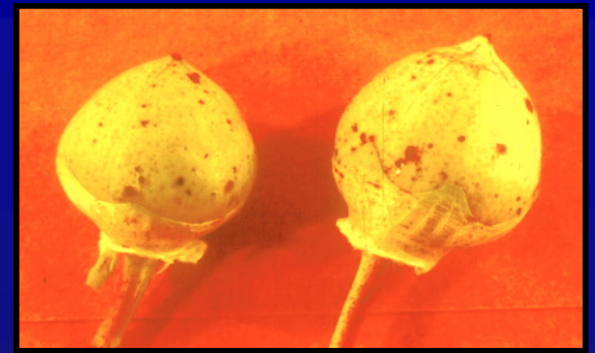
Drop Cloth Samples



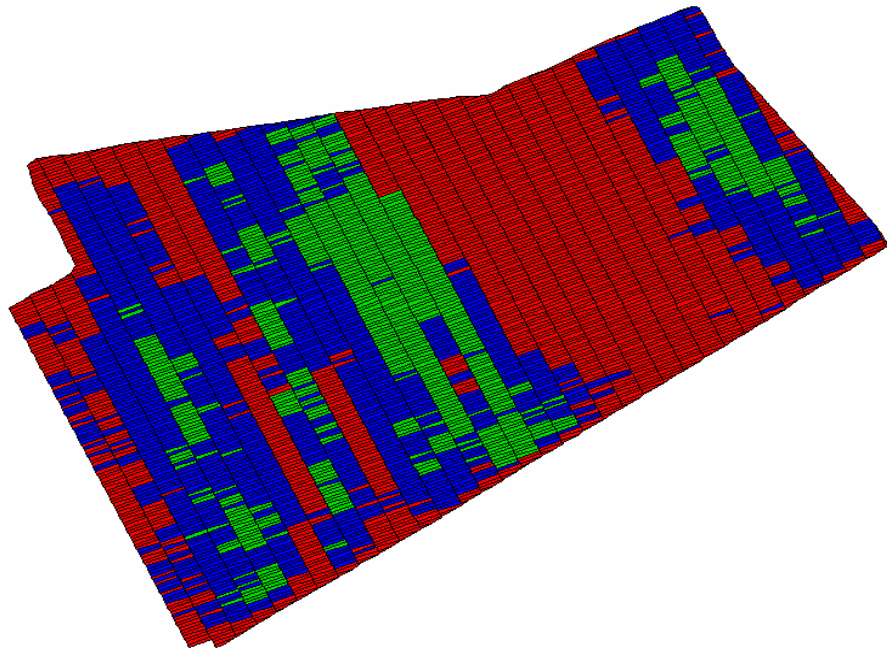
Drop Cloth Samples



Square and Boll Injury Ratings



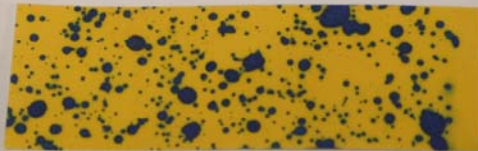
Variable Rate Pesticide/Fertilizer Applications



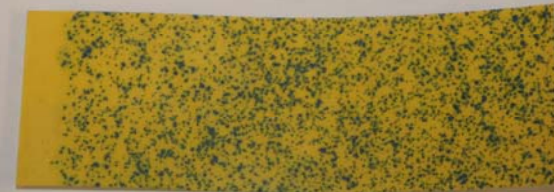
Herbicide - Insecticide Co-Applications



TeeJet AI11003



ConeJet TX-12





Air Speed and Actual Applied Rate



Liquid Flow Controller



Air Speed and Actual Applied Rate



Summary

- **Continued Pesticide Development**
- **More Options for Transgenes**
- **Improved Sampling and Thresholds**
- **Application Methods are Evolving**

Louisiana Cotton Producers Association



COTTON INCORPORATED



**Building Markets For Cotton And
Cotton Products**