

2012 LOUISIANA AGRICULTURAL TECHNOLOGY & MANAGEMENT CONFERENCE
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Soybean IPM Issues

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Insecticide Seed Treatments (ISTs)

Efficacy of ISTs dependent on several factors:

Growing conditions

Rainfall

Effective for ~30 days in soybean

Potential Targets of IST in Soybean

§ Thrips

§ Threecornered
alfalfa hopper

§ Grasshoppers

§ Bean leaf beetle

§ *Colaspis spp*

§ Banded cucumber
beetle



Insecticide Seed Treatments: Thrips Control 2010, 2011

Product	Company	Active Ingredient
Acceleron IX-409	Monsanto	imidacloprid (48.7%)
Cruiser 5FS	Syngenta Crop Protection	thiamethoxam (47.6%)
Gaucho 600	Bayer CropScience	imidacloprid (48.7%)
NipsIt INSIDE	Valent USA	clothianidin (47.8%)
Poncho/VOTiVO	Bayer CropScience	clothianidin (40.3%) and <i>Bacillus firmus</i> (8.1%)

Product	% Thrips Control (14 to 21 DAP)
Acceleron IX-409	90
Cruiser 5FS	98
Gaucho 600	95
NipsIt INSIDE	72
Poncho/VOTiVO	87

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Product	Yield (bu/A)
Untreated Check	40
Acceleron IX-409	41
Cruiser 5FS	48
Gaucho 600	45
NipsIt INSIDE	46
Poncho/VOTiVO	45

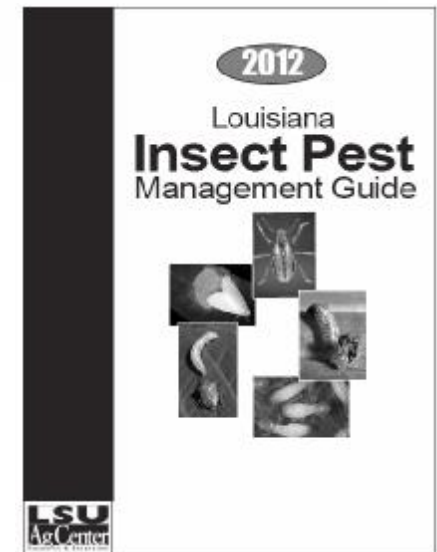
LOUISIANA RECOMMENDATIONS FOR CONTROL OF INSECTS ON SOYBEANS

<u>Insect</u>	<u>Insecticide</u>
Three-cornered alfalfa hopper	Asana XL (0.66)
	Karate Z (2.08)
	Declare (1.25)
	Cyfluthrin (2)
	Baythroid XL (1)
	Mustang Max/Respect(0.8)
	Orthene (Acephate)
	Hero (1.24)



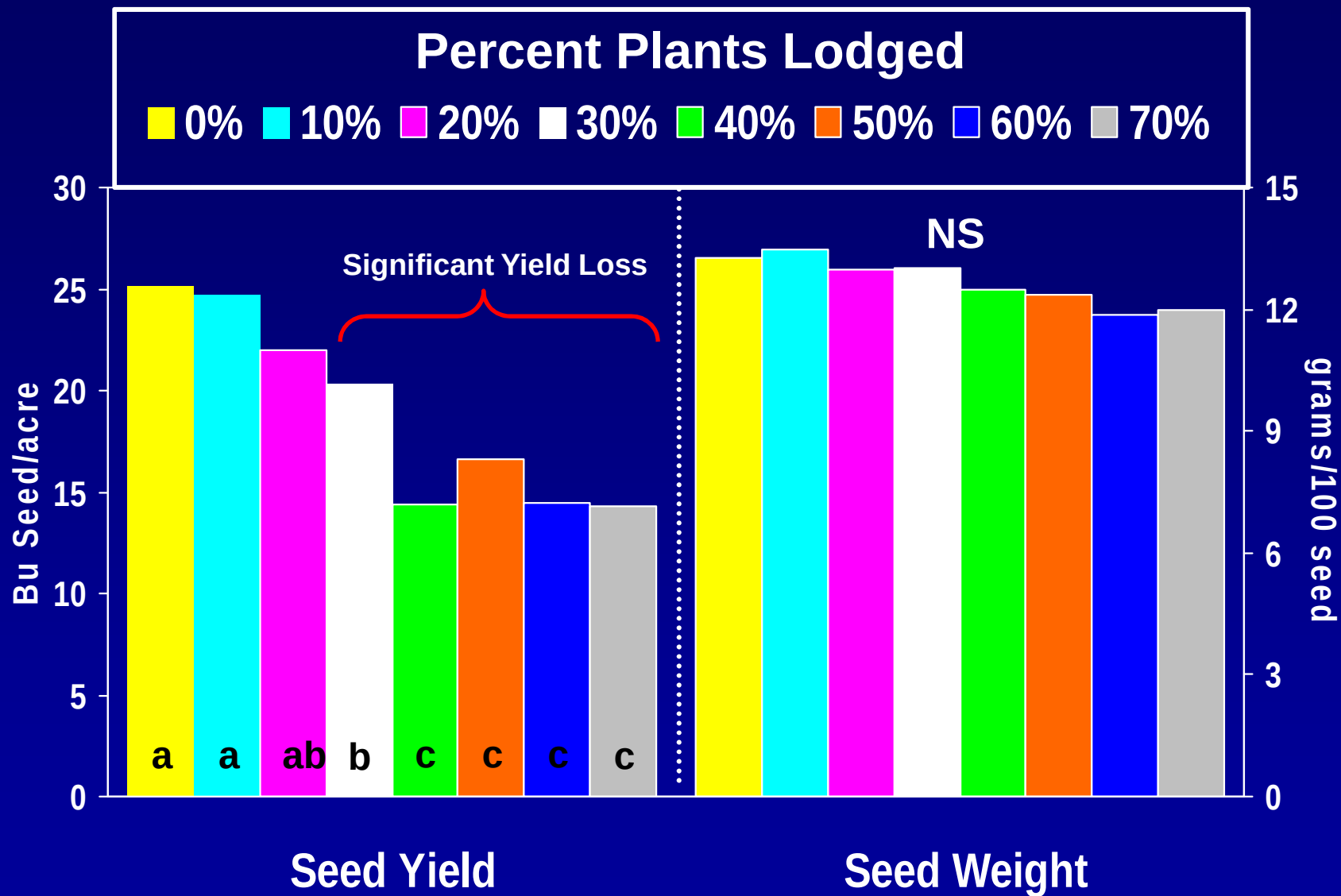
When to Treat (Economic threshold)

Starting at pod set, treat for 3 nymphs per row foot or 1 adult per sweep.





Simulated TCAH Lodging at R5



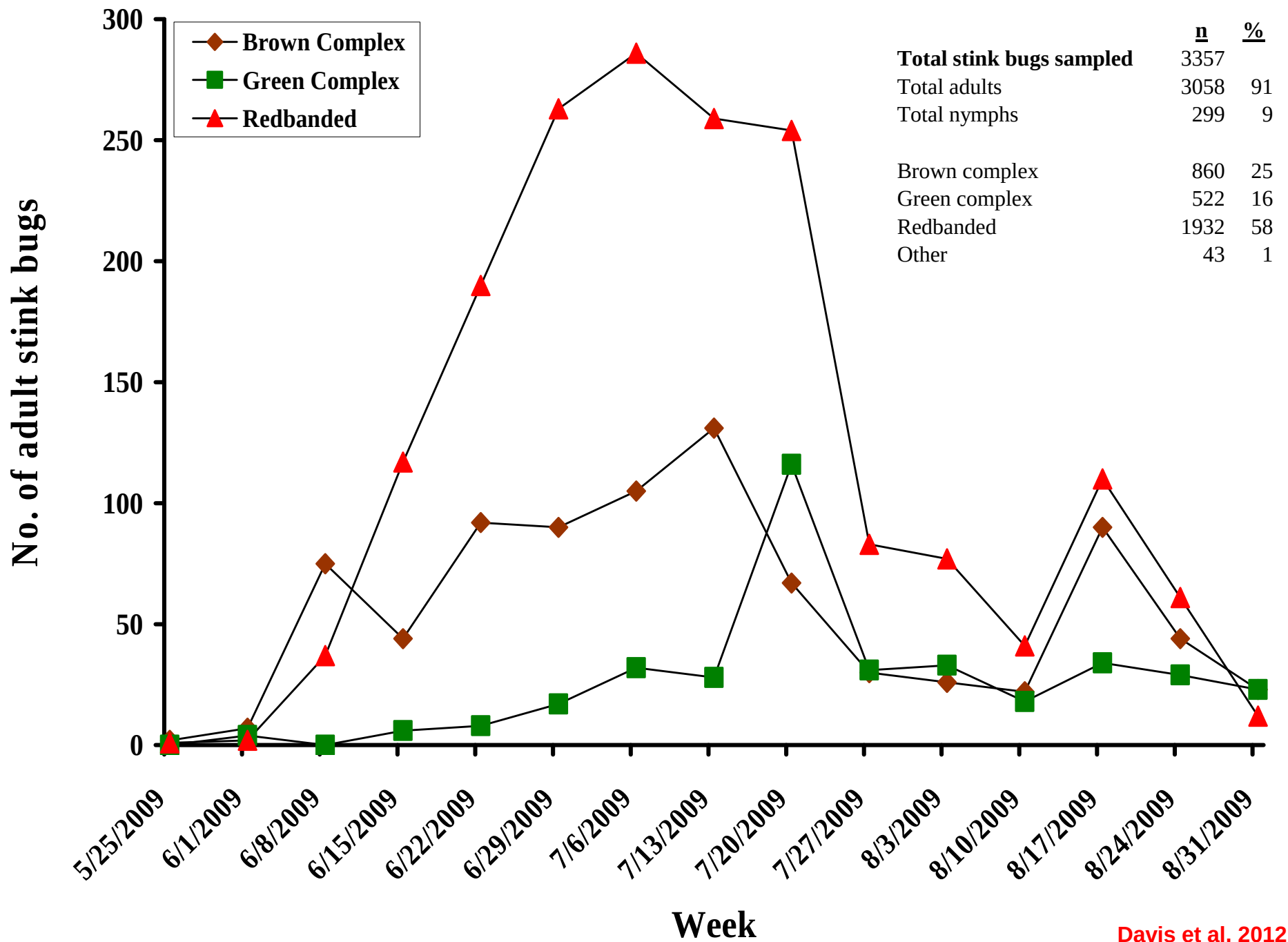
Foliar Insecticides:

Threecornered Alfalfa Hopper Control

Treatment/ formulation	Active Ingredient	% Control	
		2 DAT	8 DAT
Baythroid XL + Orthene 90S	<i>beta</i> -cyfluthrin + acephate	100	100
Endigo ZC	<i>lambda</i> -cyhalothrin + thiamethoxam	100	95
Hero 1.24EC	bifenthrin	98	95
Karate Z 2.08CS	<i>lambda</i> -cyhalothrin	96	90
Leverage 2.7SE	<i>beta</i> -cyfluthrin + imidacloprid	100	100
Orthene 90S	acephate	95	93

Stink Bugs





Redbanded Stink Bug Status 2009 to 2011

Weekly samples from
late May – early October

Red River Sta

2009: 848
2010: 118
2011: 3

Macon Ridge Sta

2009: 433
2010: 17
2011: 6

Dean Lee Sta

2009: 791
2010: 311
2011: 90

★ Cold temperatures

★ Drought

Ben Hur Sta

2009: 409
2010: 23
2011: 526

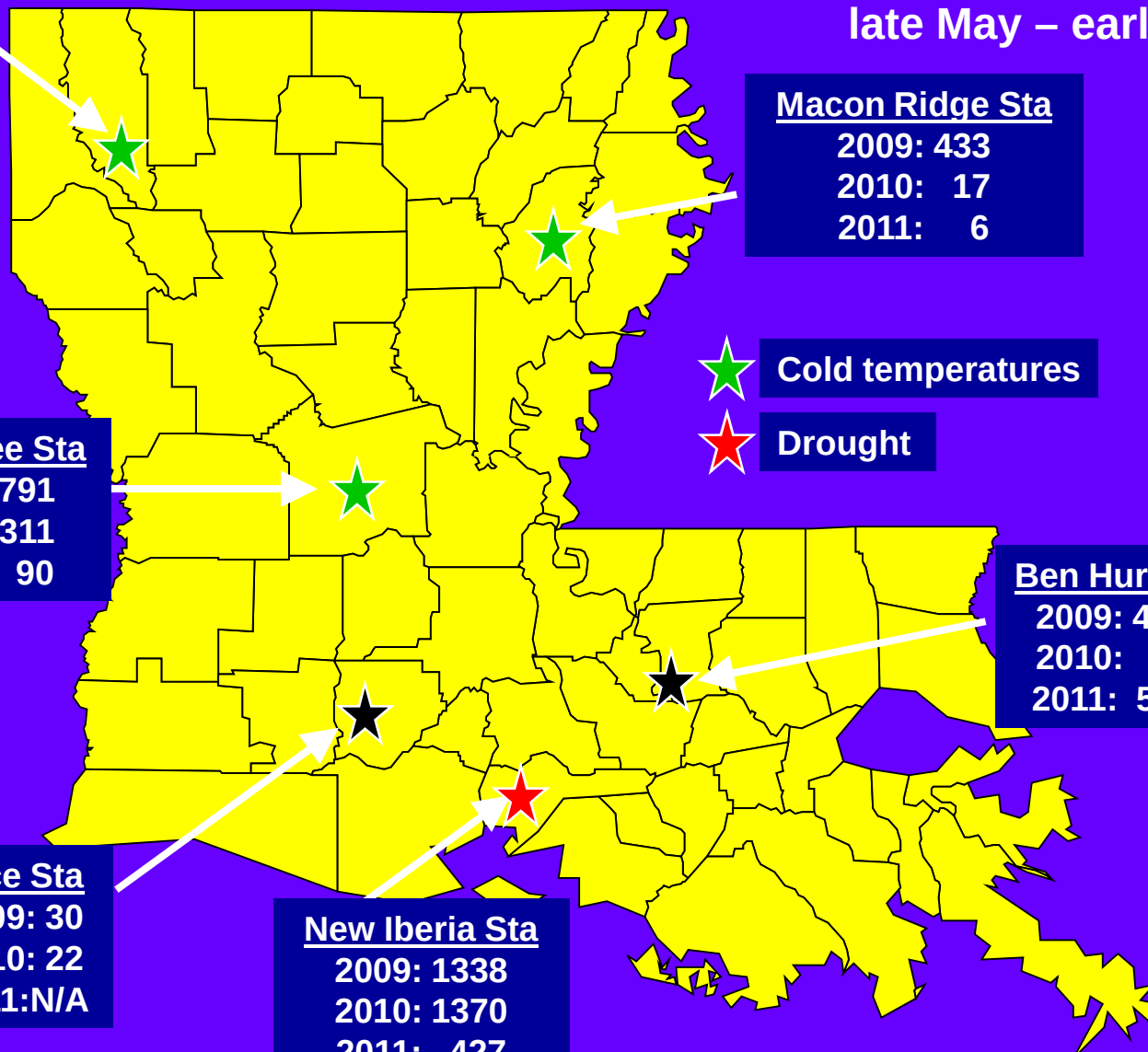
Rice Sta

2009: 30
2010: 22
2011: N/A

New Iberia Sta

2009: 1338
2010: 1370
2011: 427

10,000 sweeps per location



Why did redbanded stink bug populations decrease in 2010 and 2011?

<u>Research Station</u>	Hours at 20°F or less from October to June of each year				
	<u>2007 to 2008</u>	<u>2008 to 2009</u>	<u>2009 to 2010</u>	<u>2010 to 2011</u>	<u>2011 to 2012</u>
Ben Hur	0	0	10	0	0
Chase	0	0	14	11	0
Crowley	0	0	0	0	0
Dean Lee	0	0	5	4	0
New Iberia	0	0	0	0	0
Red River	1	0	18	12	0

Preliminary data indicates that for each hour below 20°F there is 8% decrease in population

R5 to R8

0 stink bugs/25 sweeps

3 stink bugs/25 sweeps



MACON RIDGE 2011

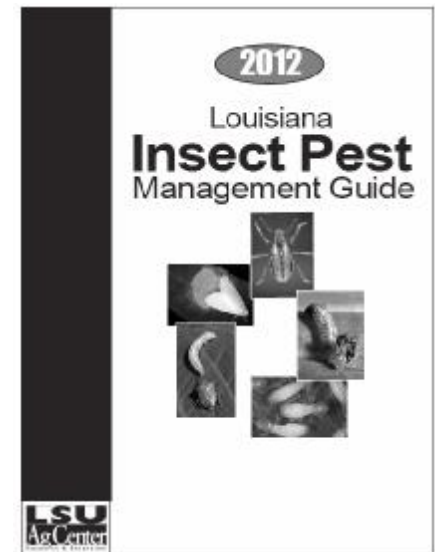


BEN HUR 2011

Action Threshold = 6 per 25 sweeps for redbanded stink bug

LOUISIANA RECOMMENDATIONS FOR CONTROL OF INSECTS ON SOYBEANS

Insect	Insecticide	When to Treat (Economic threshold)
Redbanded stink bug ⁴	<CONTROL> Orthene (Acephate) Endigo ZC Brigade (2) Hero (1.24) Leverage 360 <SUPPRESSION> Cyfluthrin (2)	Treat for 24 bugs in 100 sweeps.



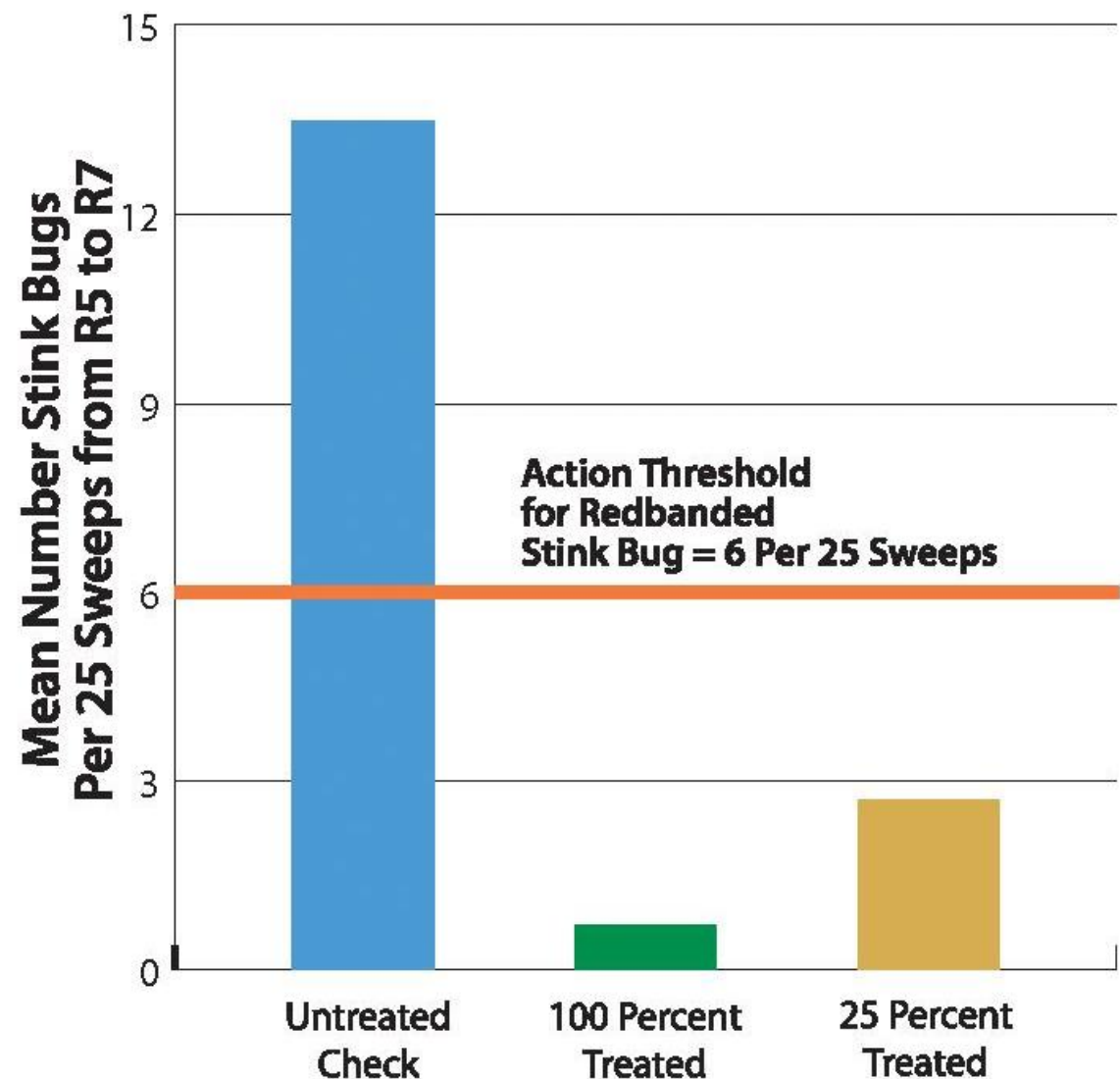
Foliar Insecticides: Redbanded Stink Bug Control

Treatment/ formulation	Active Ingredient	% Control	
		2 DAT	7 DAT
Baythroid XL + Orthene 90S	<i>beta</i> -cyfluthrin + acephate	100	84
Belay	clothianidin	80	68
Belay + Orthene	clothianidin + acephate	100	80
Besiege	chlorantraniliprole + <i>lambda</i> -cyhalothrin	80	65
Brigade	bifenthrin	94	79
Brigadier	bifenthrin + imidacloprid	100	63
Centric	thiamethoxam	60	50
Endigo ZC	<i>lambda</i> -cyhalothrin + thiamethoxam	87	72
Hero 1.24EC	bifenthrin	81	60
Karate Z 2.08CS	<i>lambda</i> -cyhalothrin	54	23
Leverage 2.7SE	<i>beta</i> -cyfluthrin + imidacloprid	66	37
Orthene 90S	acephate	97	68

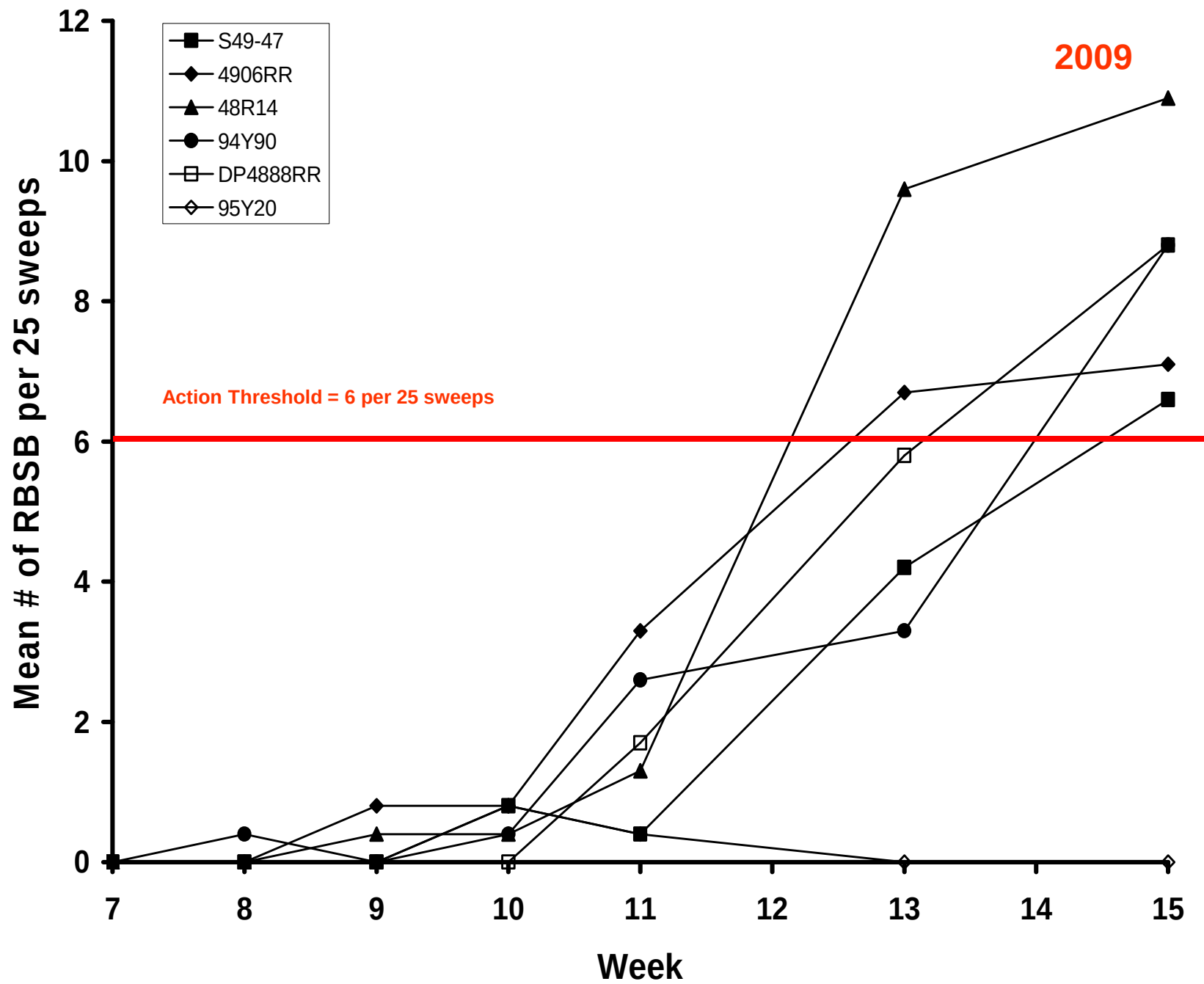
Perimeter Applications

- ▼ Site-specific targeted insecticide applications

Figure 2. Perimeter insecticide applications keep stink bug numbers below the action threshold.



Davis et al. 2011



2009 Stink bug Screening Results

<u>Variety</u>	<u>RBSB CID</u>	<u>% Dmg Seed</u>	<u>Yield (bu/A)</u>
S49-47	148 b	50 b	65 a
4906RR	222 ab	63 a	75 a
48R14	305 a	55 ab	50 bc
94Y90	187 b	51 b	65 ab
4888RR/S	212 ab	56 ab	48 c
95Y20	14 c	19 c	76 a
<i>P</i> -value	<0.0001	<0.0001	<0.0001

Conclusions

- V** Current soybean varieties differ in their susceptibility to the redbanded stink bug
- V** Pioneer 95Y20 had the lowest redbanded stink bug CID and least amount of stink bug damage
- V** These varieties are MG appropriate and yield well under various environmental conditions

v Lepidopteran
Defoliators



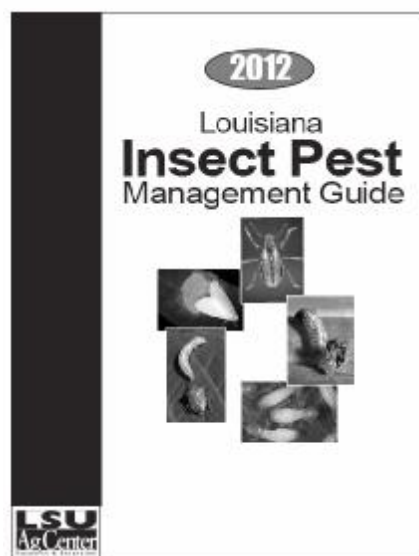
LOUISIANA RECOMMENDATIONS FOR CONTROL OF INSECTS ON SOYBEANS

Insect	Insecticide	When to Treat (Economic threshold)
Velvetbean Caterpillar ³	Methyl parathion (4) Sevin (carbaryl) (4) Tracer (4) Lorsban/chlorpyrifos (4) Larvin (3.2) Belt (4) Karate Z (2.08) Declare (1.25) Cyfluthrin (2) Baythroid XL (1) Mustang Max/Respect(0.8) Intrepid (2) Lannate (2.4) Hero (1.24) Dimilin (2)	Treat for 8 worms, ½ inch or longer, per row foot or 300 worms in 100 sweeps.



LOUISIANA RECOMMENDATIONS FOR CONTROL OF INSECTS ON SOYBEANS

<u>Insect</u>	<u>Insecticide</u>	<u>When to Treat (Economic threshold)</u>
Soybean looper ³	Larvin (3.2) Lannate ⁶ (2.4) Tracer ⁷ (4) Steward (1.25) Intrepid (2) Belt (4)	Treat for 8 worms, ½ inch or longer, per row foot or 150 worms in 100 sweeps.



Insecticide Control Options

Belt

Intrepid

Larvin

Steward

Tracer

Prevathon (Coragen) - 2012

Thresholds

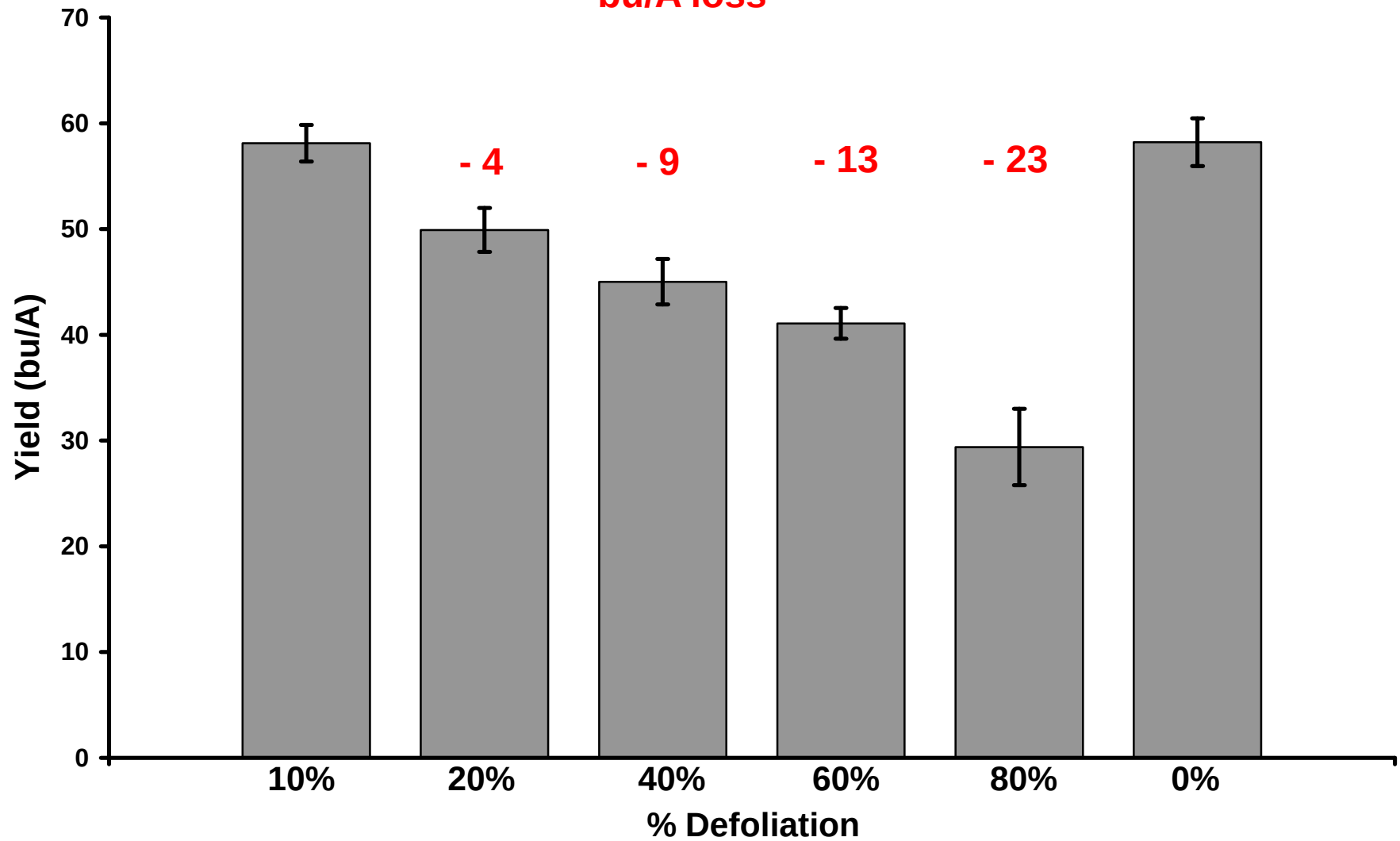
Defoliation should not exceed 20% (R1-R5)

Non-treated

A photograph of a soybean field. A bright yellow diagonal line runs from the bottom left towards the top right, dividing the field into two sections. The section to the left of the line contains healthy, dense green soybean plants. The section to the right of the line shows plants that are heavily damaged, with many leaves missing or eaten, leaving a sparse, brownish-green field. In the bottom right corner, the text "Non-treated" is written in yellow on a dark blue background.

Yield loss due to VBC and SBL 2010

bu/A loss



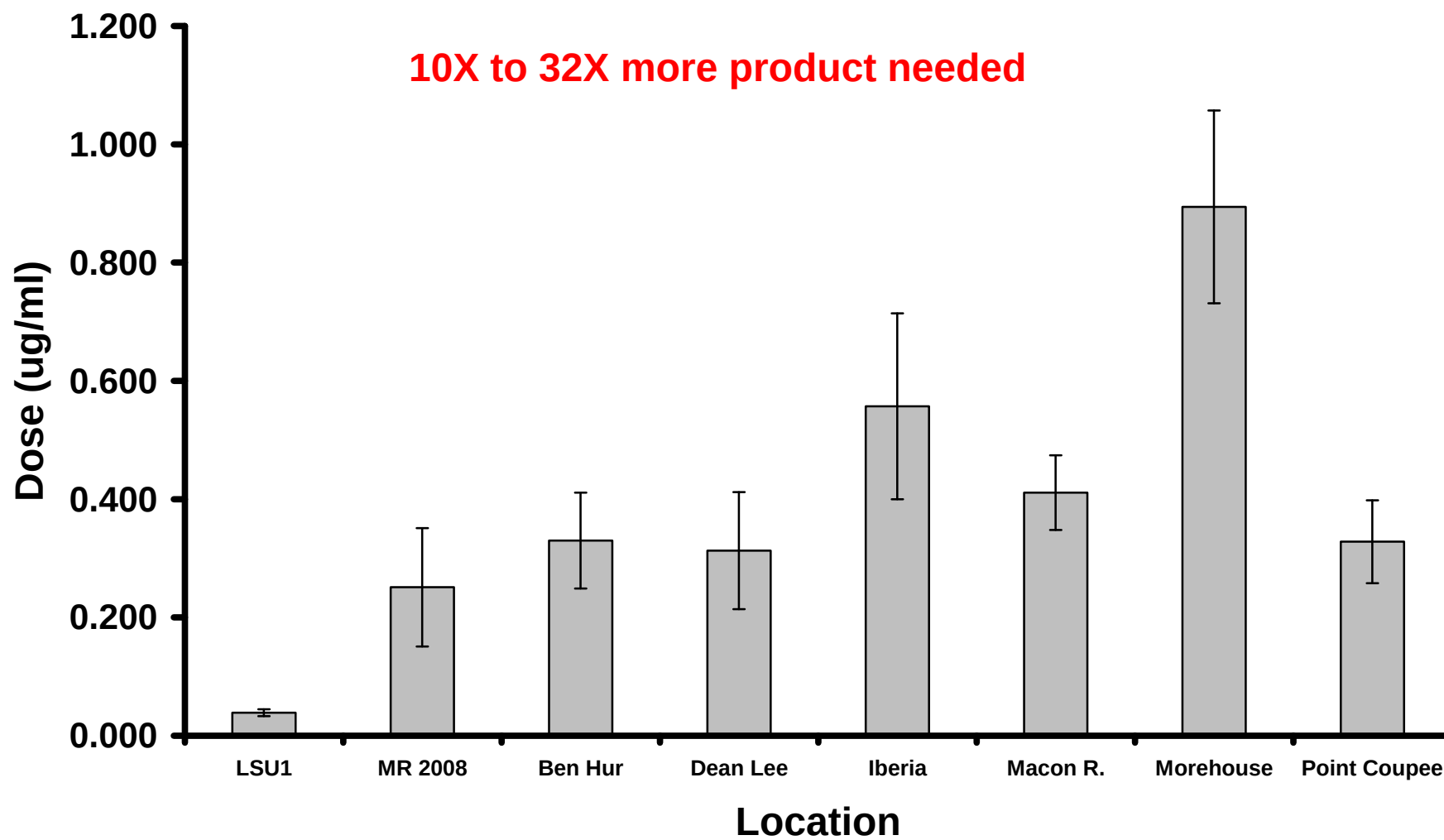
Foliar Insecticides: Soybean Looper Residual Control

Treatment/ formulation	Active Ingredient	% Control		
		7 DAT	14 DAT	21 DAT
Belt SC	flubendiamide	100	88	76
Coragen SC	chlorantraniliprole	100	91	76
Dimlin 2L	diflubenzuron	29	9	0
Dimlin 2L + Intrepid 2F	diflubenzuron + methoxyfenozide	71	64	10
Dimlin 2L + Karate 2.08 CS	diflubenzuron + <i>lambda</i> -cyhalothrin	29	9	0
Dimlin 2L + Tracer	diflubenzuron + spinosad	85	64	15
Intrepid 2F	methoxyfenozide	70	52	35
Larvin	thiodicarb	65	3	0
Steward 1.25EC	indoxacarb	80	55	19

Foliar Insecticides: Soybean Looper Defoliation

Treatment/ formulation	% Defoliation 21 DAT
Untreated check	27
Belt SC	4
Coragen	4
Dimlin 2L	20
Dimlin 2L + Intrepid 2F	8
Dimlin 2L + Karate 2.08	18
Dimlin 2L + Tracer	6
Intrepid 2F	6
Larvin	10
Steward EC	14

Soybean Looper Intrepid LD₉₅ 2010



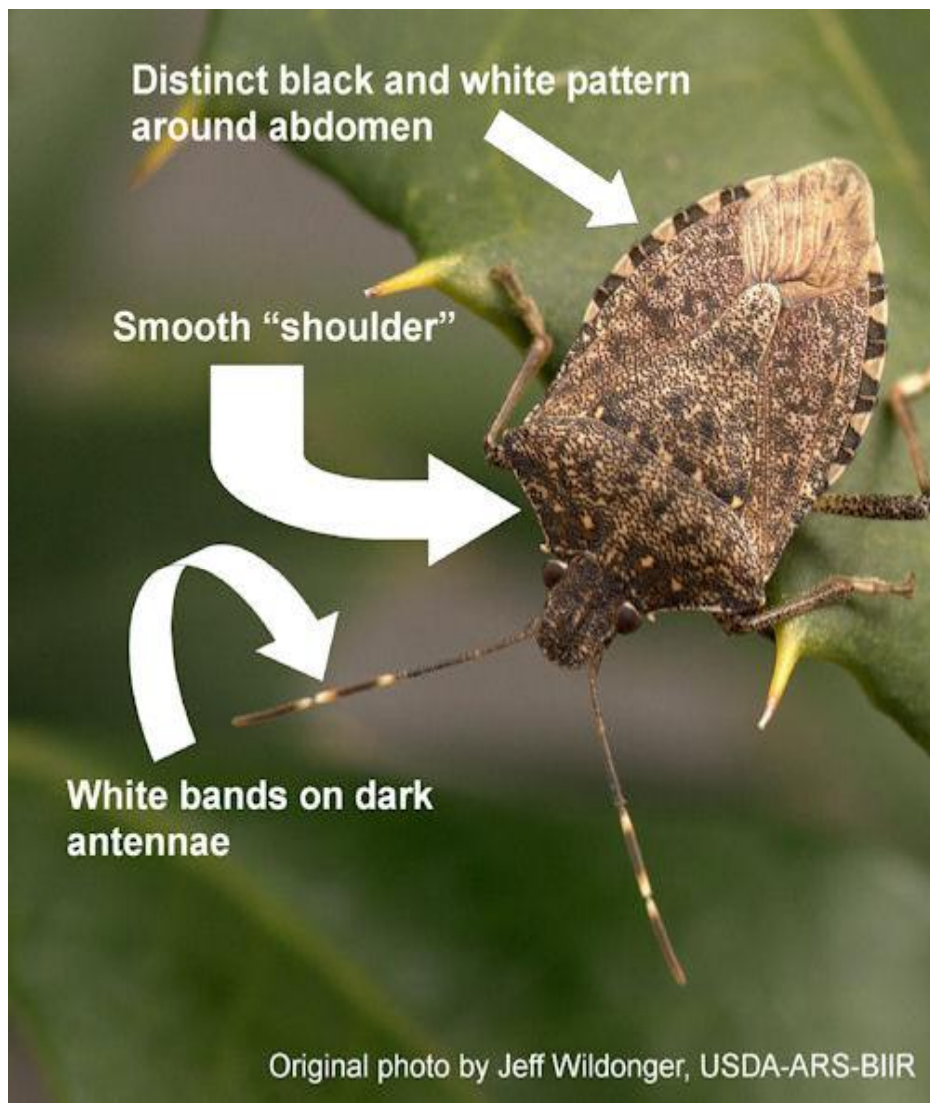
Monitoring for Soybean Looper Tolerance to Intrepid 2F Results

- V Resistance to Intrepid exists in Louisiana soybean looper populations**
- V Do not use low volumes and low rates (4 oz/A)**
There have been reports of 2 oz/A being used. This is NOT a labeled rate
- V Use high rates (6 to 8 oz/A)**
- V Use other products**
Belt = \$12 to \$16 per acre
Intrepid = \$10 per acre

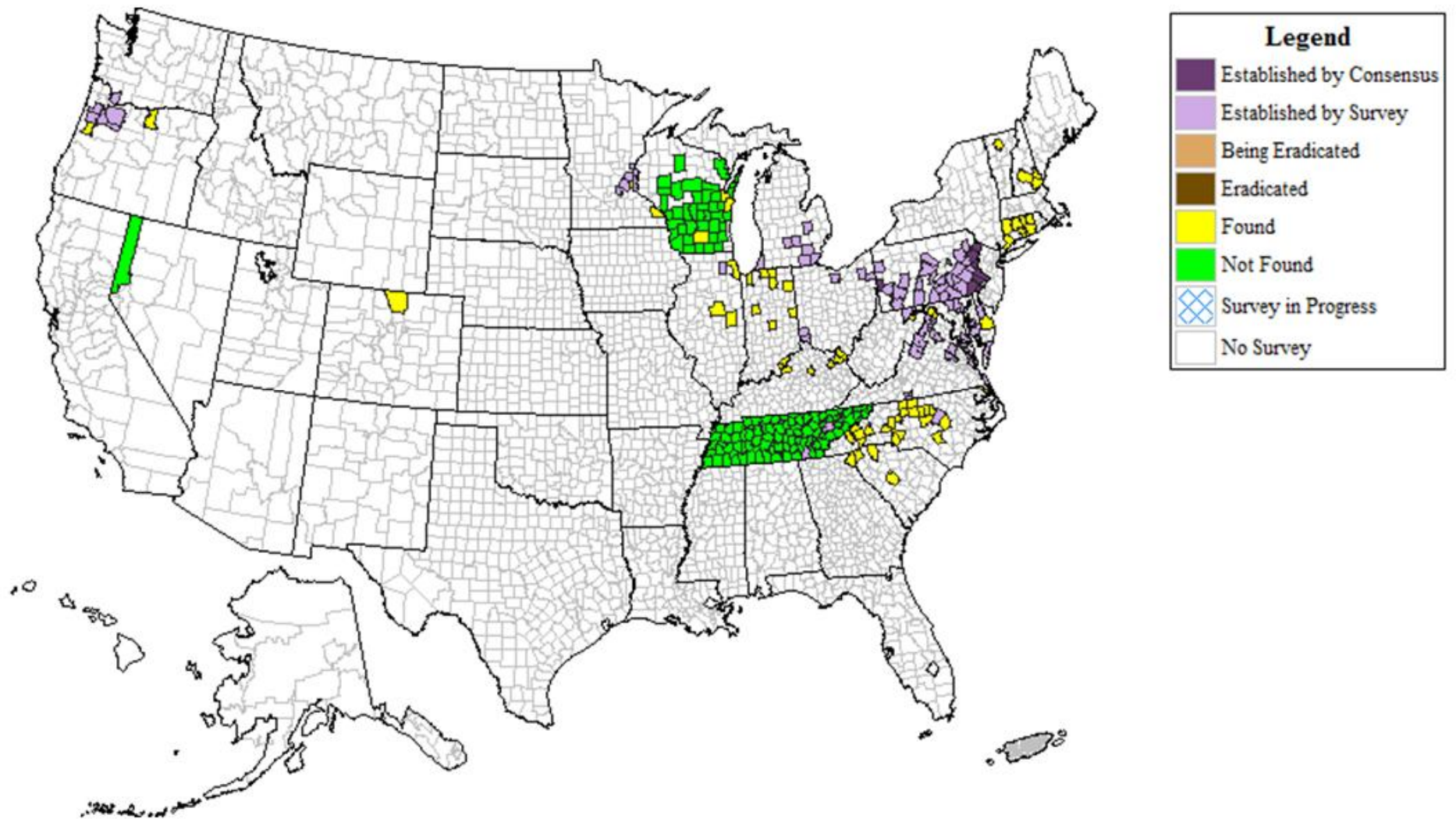
Brown marmorated stink bug

(Halyomorpha halys Stahl)





Survey Status of **Brown Marmorated Stink Bug** - *Halyomorpha halys* 2008 to present



Kudzu Bug





Kudzu Bug Occurrence

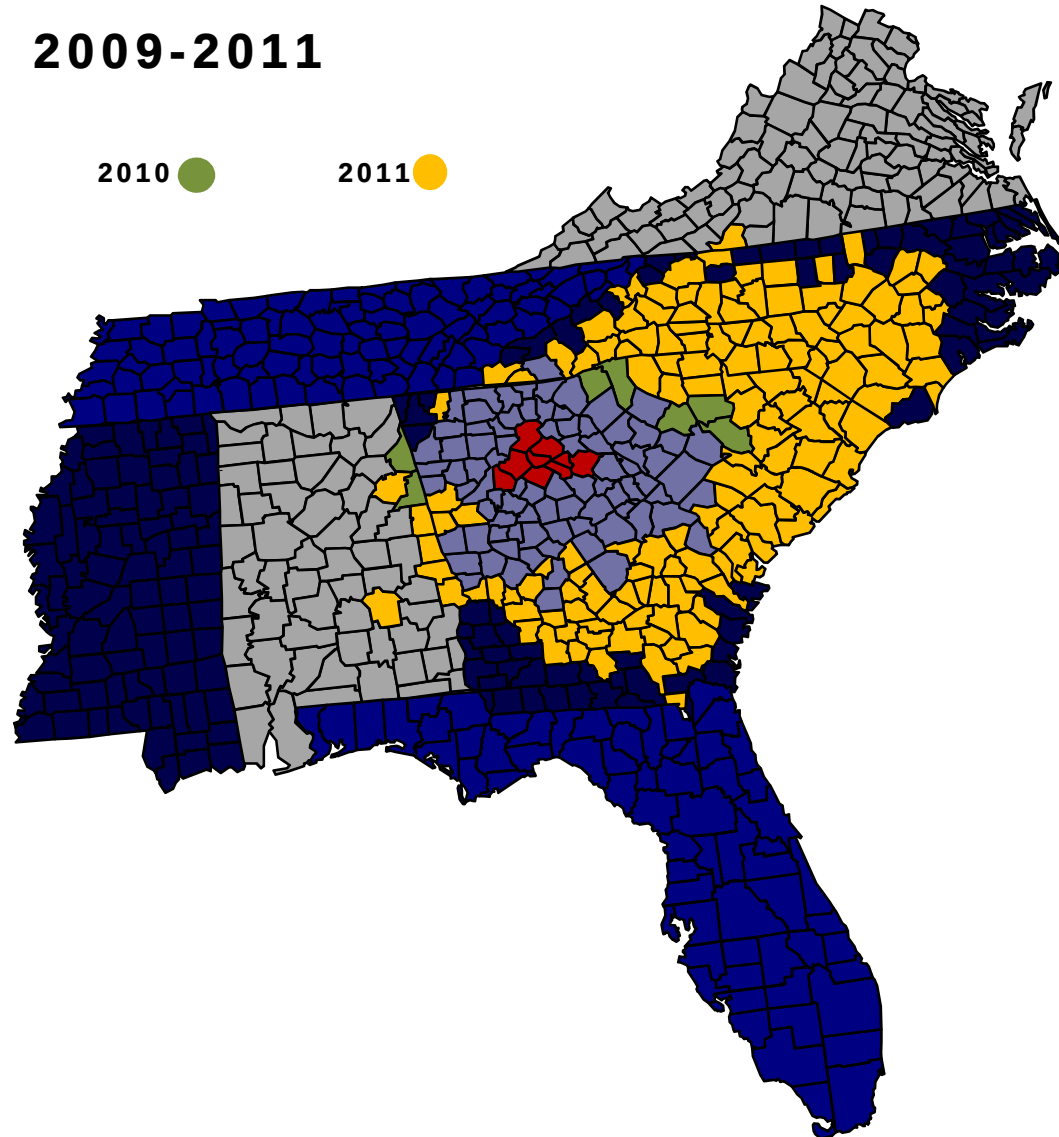
Southern United States

2009-2011

2009 ●

2010 ●

2011 ●



Questions?

Thank you

ACKNOWLEDGEMENTS:

This work was funded in part by the Louisiana Soybean and Grain Research and Promotion Board.

