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Redbanded Stink Bug FAQ

Dr. Jeff Davis
Field Crop Entomologist
(225)-747-0351
jeffdavis@agcenter.lsu.edu

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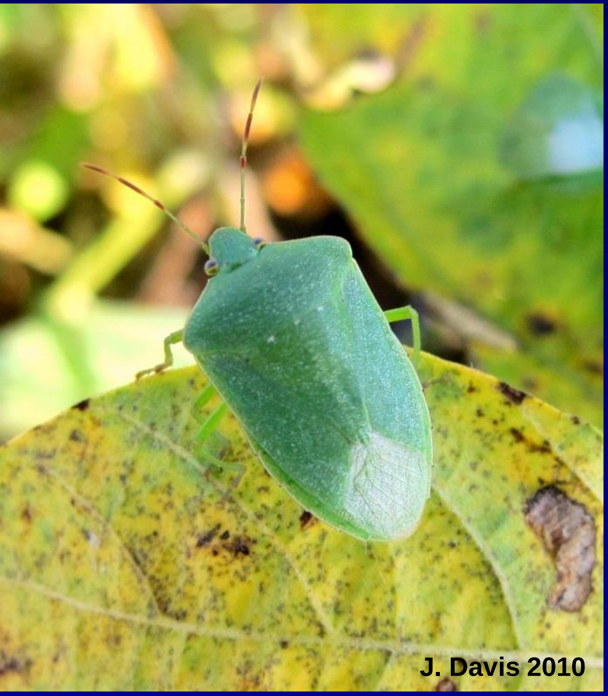
Mid-South Soybean Stink Bug Pest Complex



Nezara viridula

Chinavia hilaris

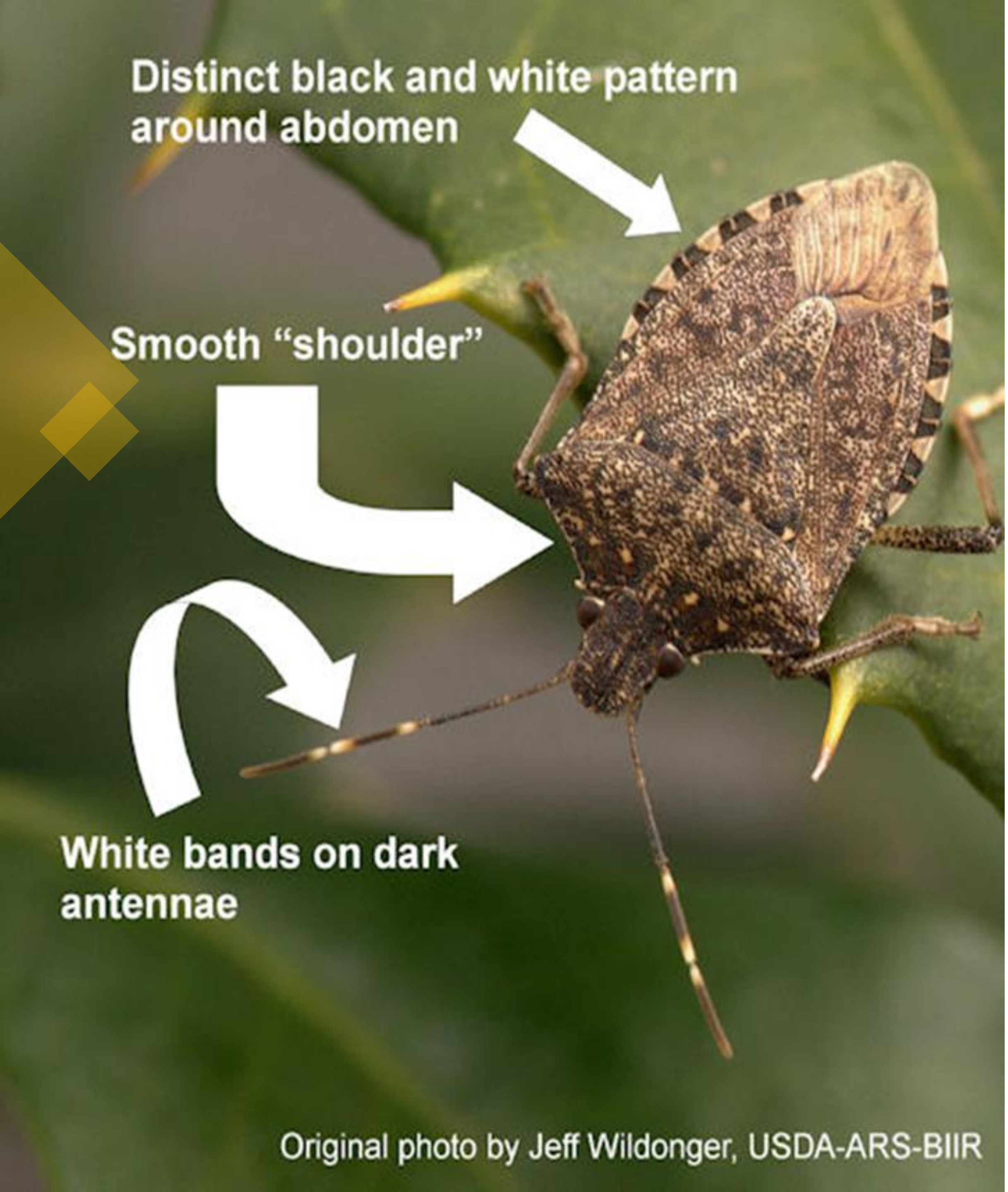
J. Davis 2010

Euschistus servus

Russ Ottens, University of Georgia, Bugwood.org

Euschistus quadrator

Brown marmorated stink bug (*Halyomorpha halys* Stahl)



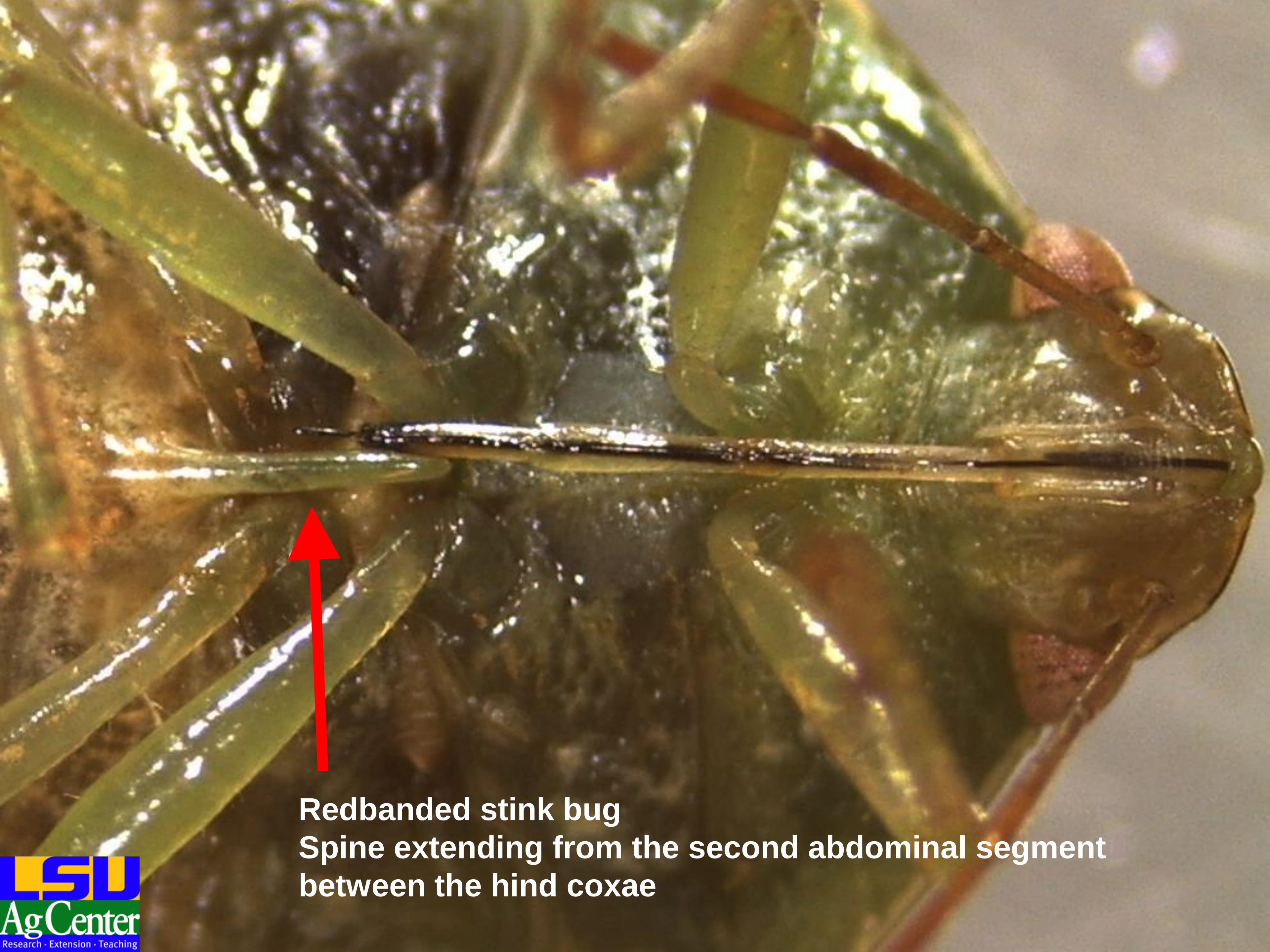
- **In June 2021, we confirmed a reproducing population at a property in Iberville Parish**

- **Range did not change this year and is not impacting row crops currently**

That red stink bug…

Redbanded Stink Bug

Red Shouldered Stink Bug


Redbanded stink bug
Spine extending from the second abdominal segment
between the hind coxae
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Proxys punctulatus

Not all stink bugs are bad

Podisus maculiventris (Say), spined soldier bug

Q1. When and where are redbanded stink bugs active?

Temperature is important to stink bug overwintering survival

Redbanded stink bug supercooling point is -4°F

Redbanded stink bug lethal temperatures (LT):

At 23°F, LT_{50} = 4 hr and LT_{90} = 7 hr

At 32°F, redbanded stink bug had to be exposed for 7 days to see 95% mortality

Temperature is important to stink bug overwintering survival

How well did redbanded stink bug survive this winter?

From November 1, 2022, to February 8, 2023, the weather station at Chase, LA has recorded 32 hr at 23°F.

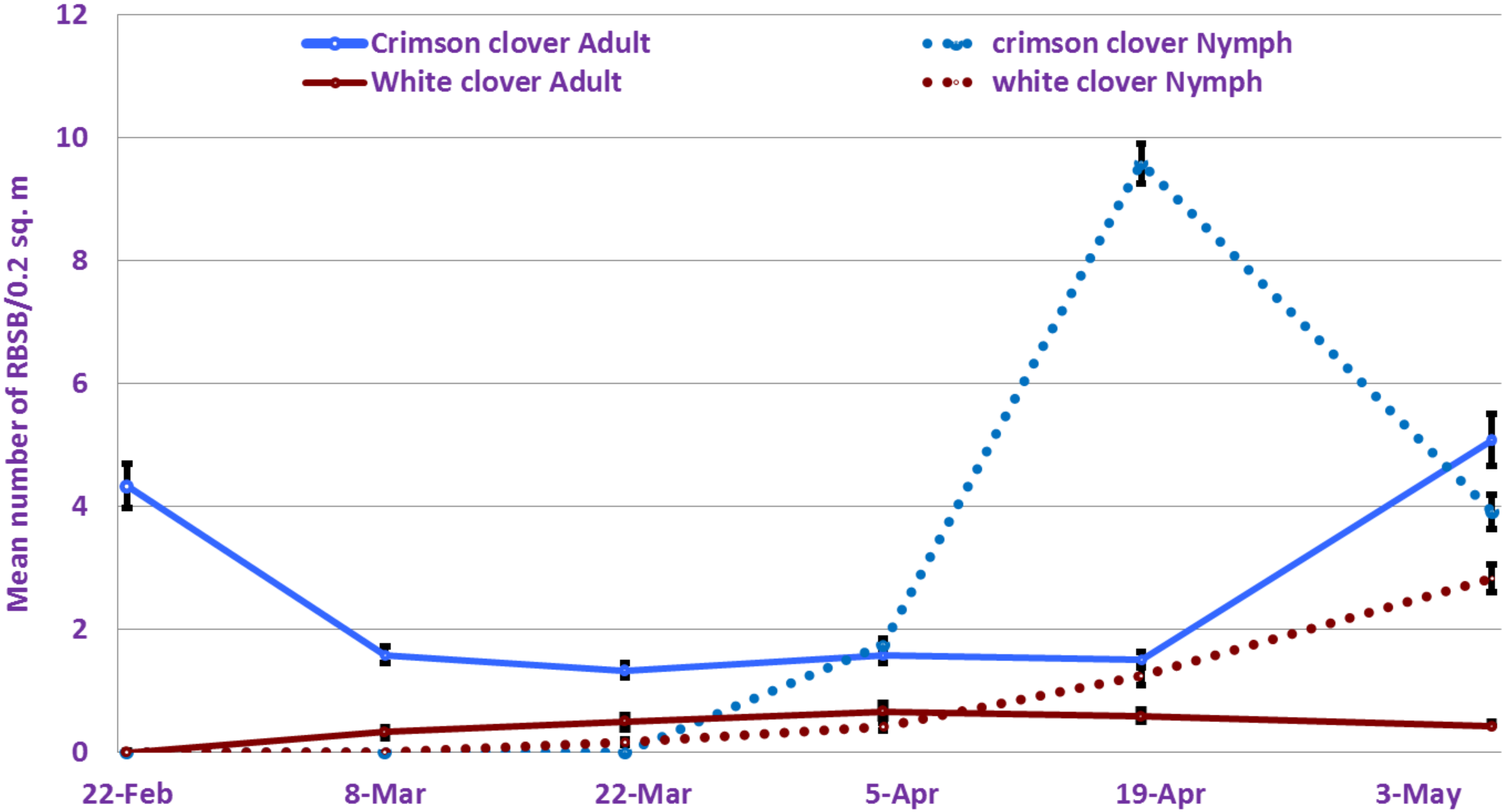
Lowest air temperature reached: 12°F

From November 1, 2022, to February 8, 2023, the weather station at Baton Rouge, LA has recorded 13 hr at 23°F.

Lowest air temperature reached: 20°F

When are redbanded stink bugs active?

All year



Where are redbanded stink bugs active? On weeds

Scientific name	Common name	Survivorship
Indigofera suffruticosa	Bush indigo	90%
Sesbania herbacea	Hemp sesbania	75%
Lotus corniculatus	Birdsfoot trefoil	70%
Ligustrum lucidum	Glossy privet	100%

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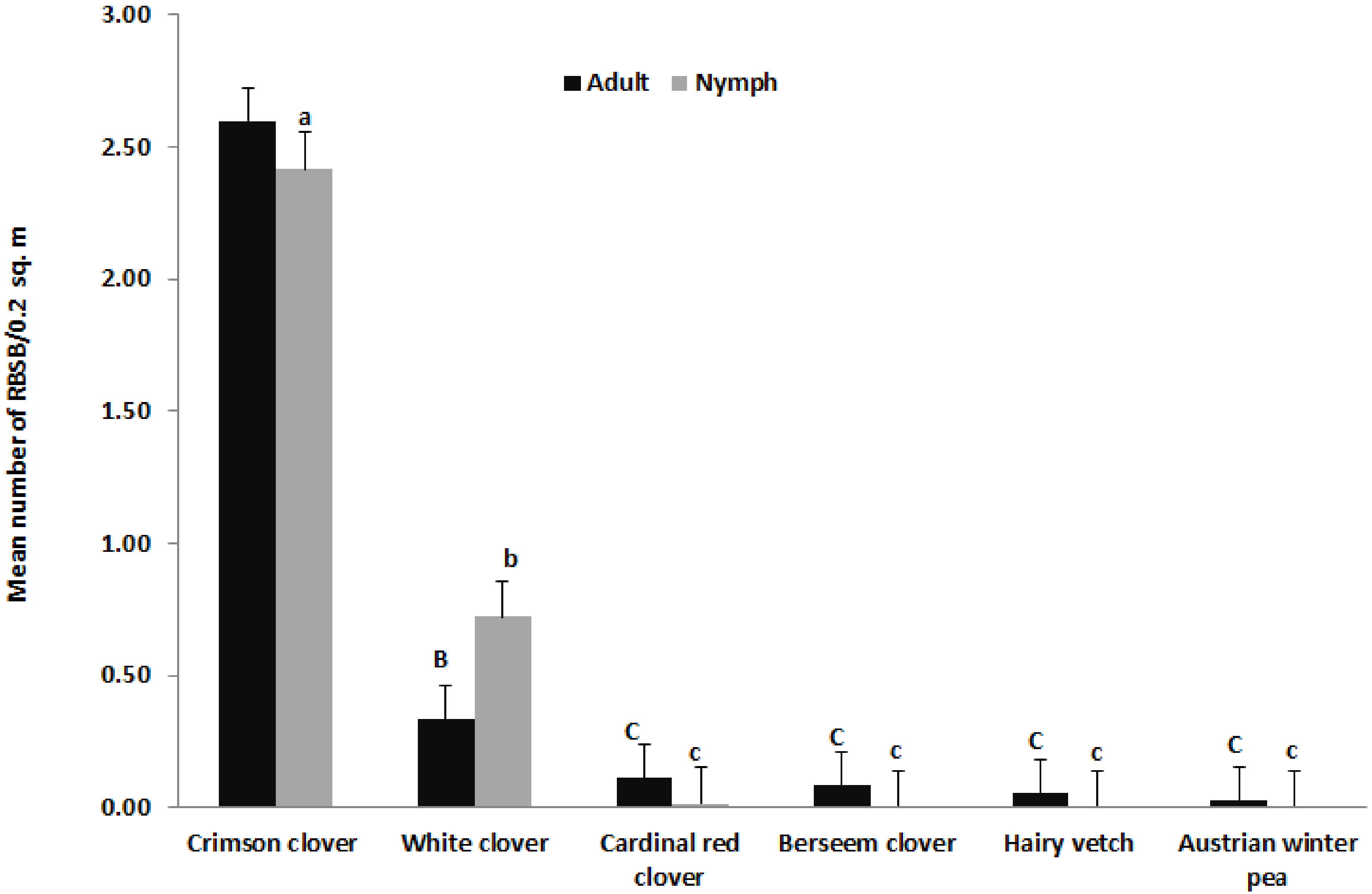
Photo credits: Larry Allain, U.S. Geological Survey
Data: Zerbino et al. 2015, 2020.

Where are stink bugs active? In cover crops

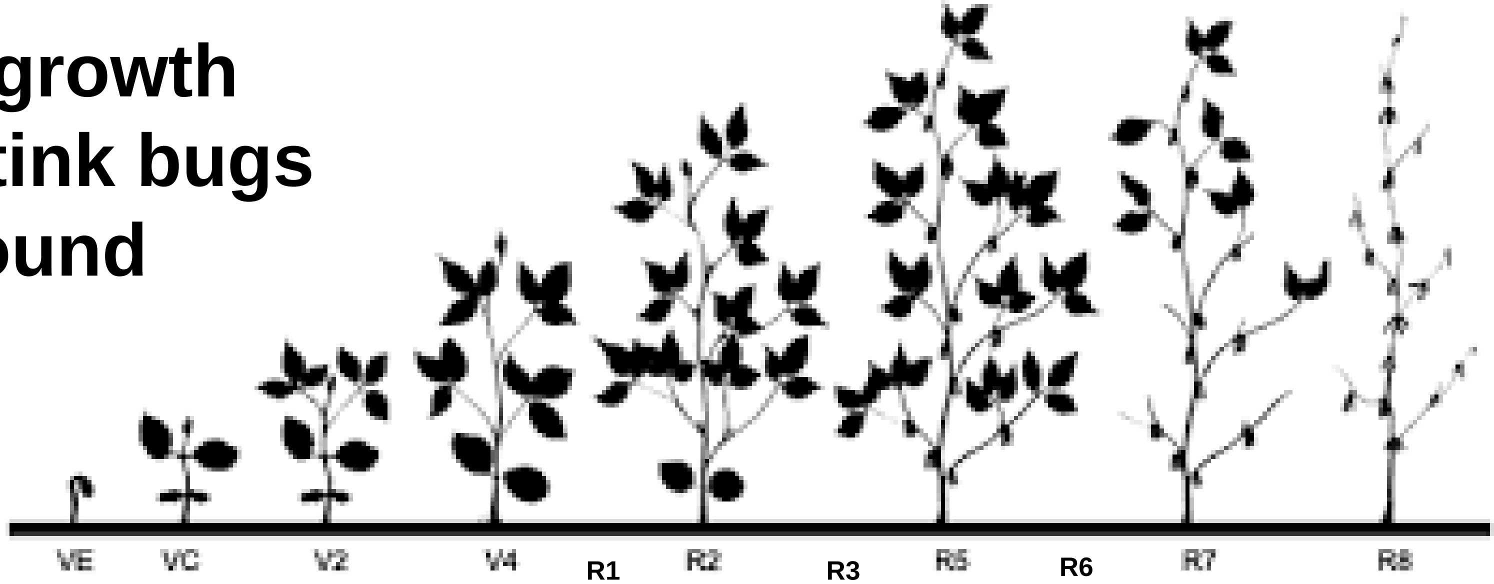


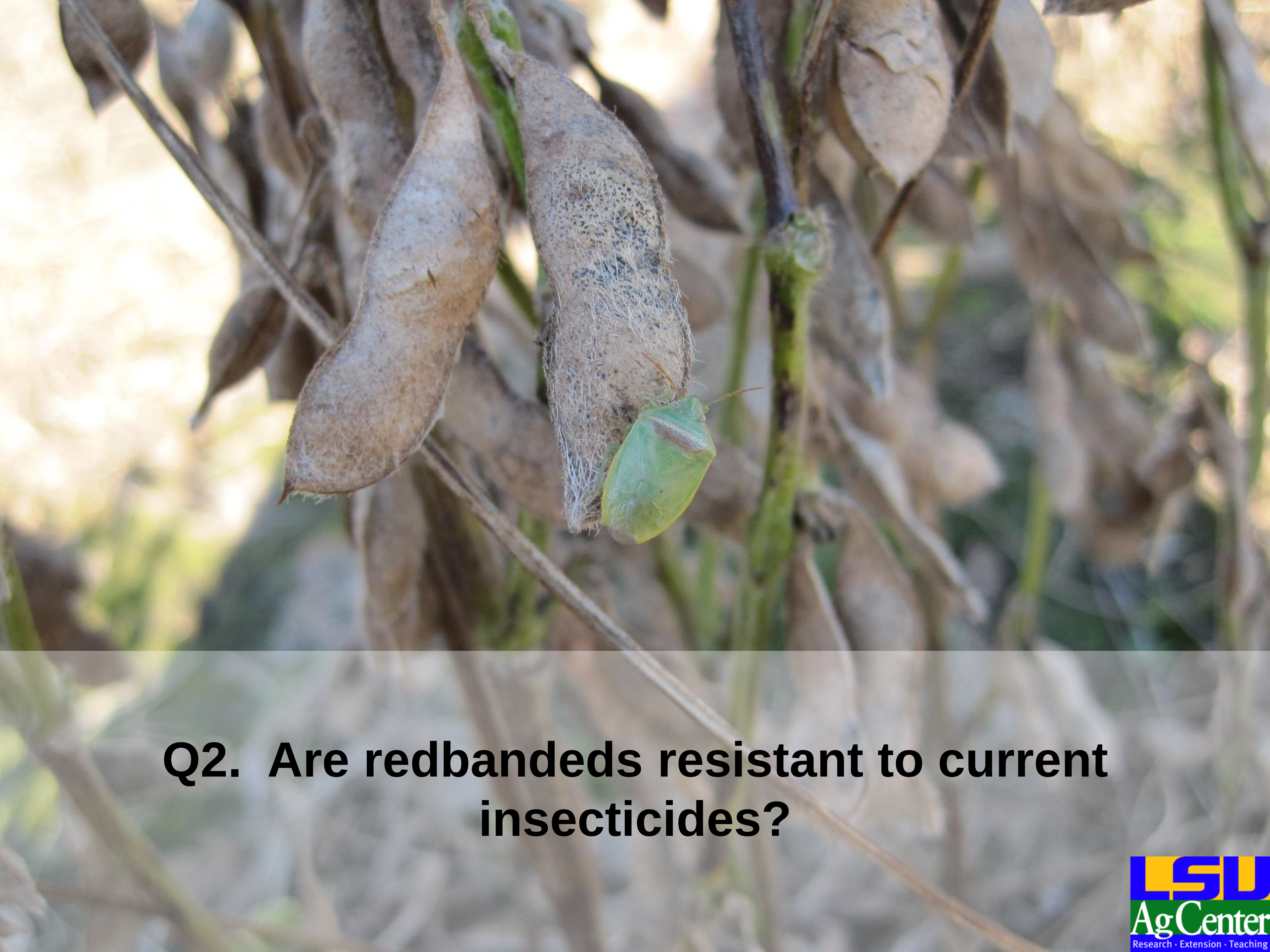

WRONG
WAY

Stink bugs are in cover crops

- **Based on mean nymphal production over 3 years, a single acre of crimson clover can produce 570,000 RBSB in a 12-week period**
- **In comparison, a single acre of soybeans produces 35,000 RBSB, 16 times less.**

Specific growth stages stink bugs can be found





Q2. Are redbandeds resistant to current insecticides?

Resistance to current chemistries?

Insecticide resistance monitoring for redbanded stink bug

Acephate (Orthene)

2022: LC_{50} 10.0 ppm
2021: LC_{50} 10.0 ppm
2020: LC_{50} 10.0 ppm
2015: LC_{50} 10.0 ppm
2011: LC_{50} 6.0 ppm
2010: LC_{50} 3.5 ppm

No change since 2015

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Resistance to current chemistries?

Insecticide resistance monitoring for redbanded stink bug

<u>Bifenthrin (Brigade)</u>

2022: LC_{50} 2.5 ppm

2020: LC_{50} 2.5 ppm

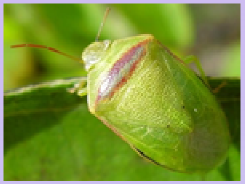
2010: LC_{50} 0.5 ppm

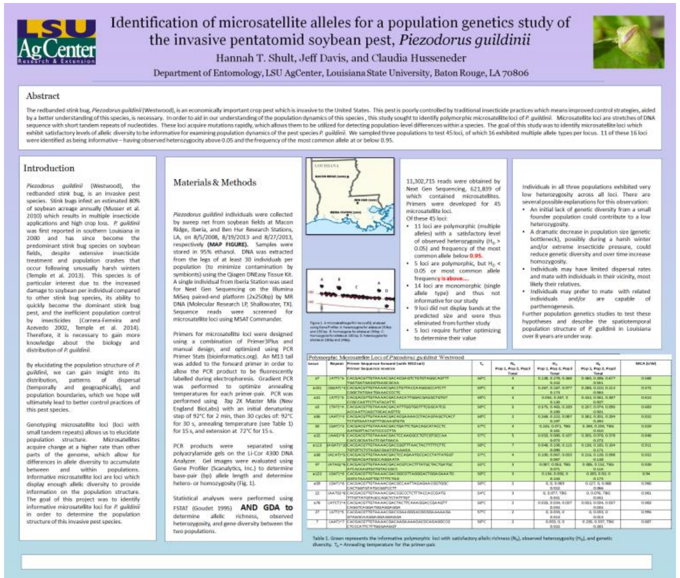
5X increase over 10 years

Identification of microsatellite alleles for a population genetics study of the invasive pentatomid soybean pest, *Piezodorus guildinii*

Hannah T. Shult, Jeff Davis, and Claudia Husseneder

Department of Entomology, LSU AgCenter, Louisiana State University, Baton Rouge, LA 70806



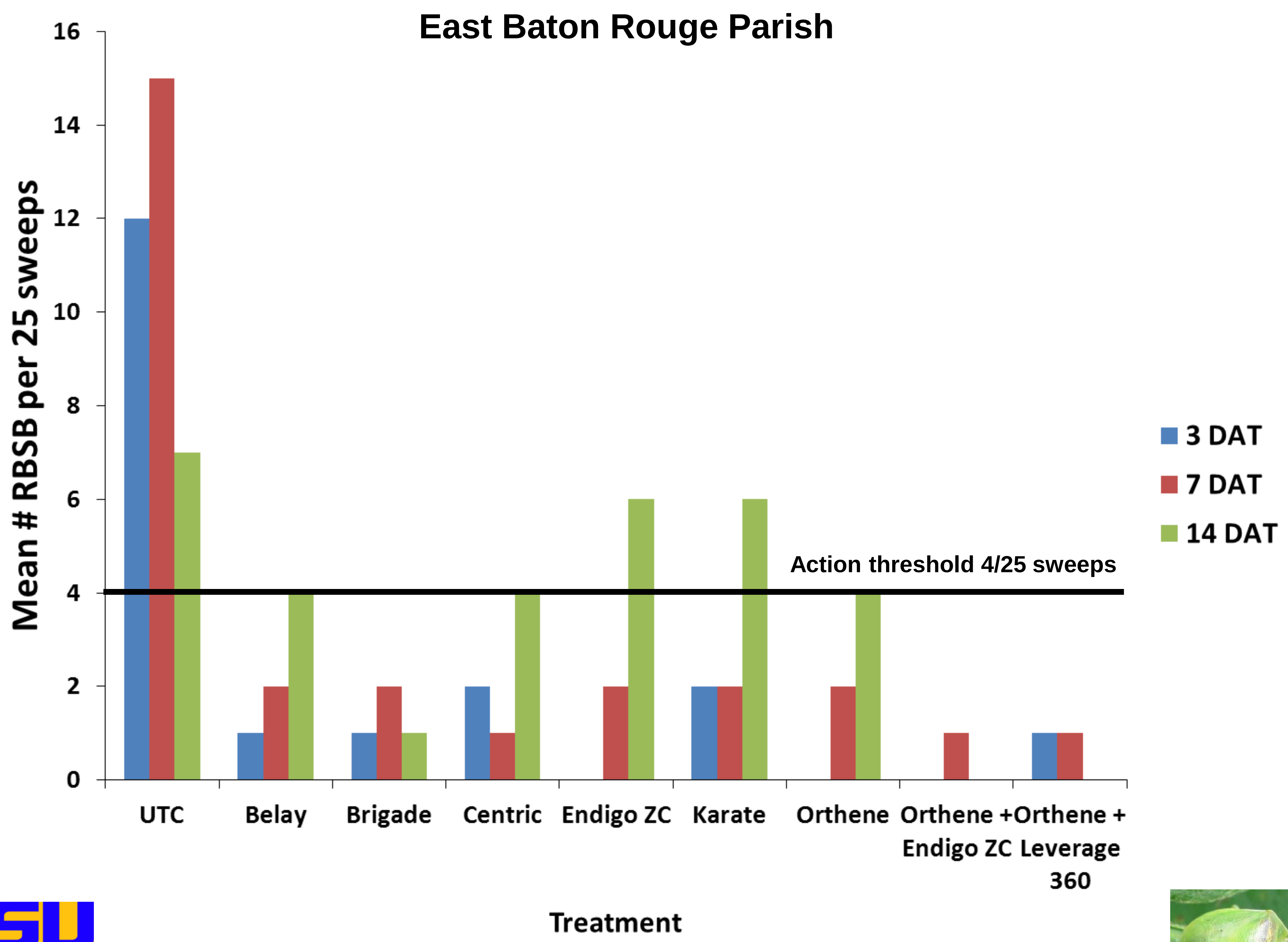


- **Small founder population with limited genetic diversity.**

- **Harsh winters and/or extreme insecticide pressure are reducing genetic diversity.**

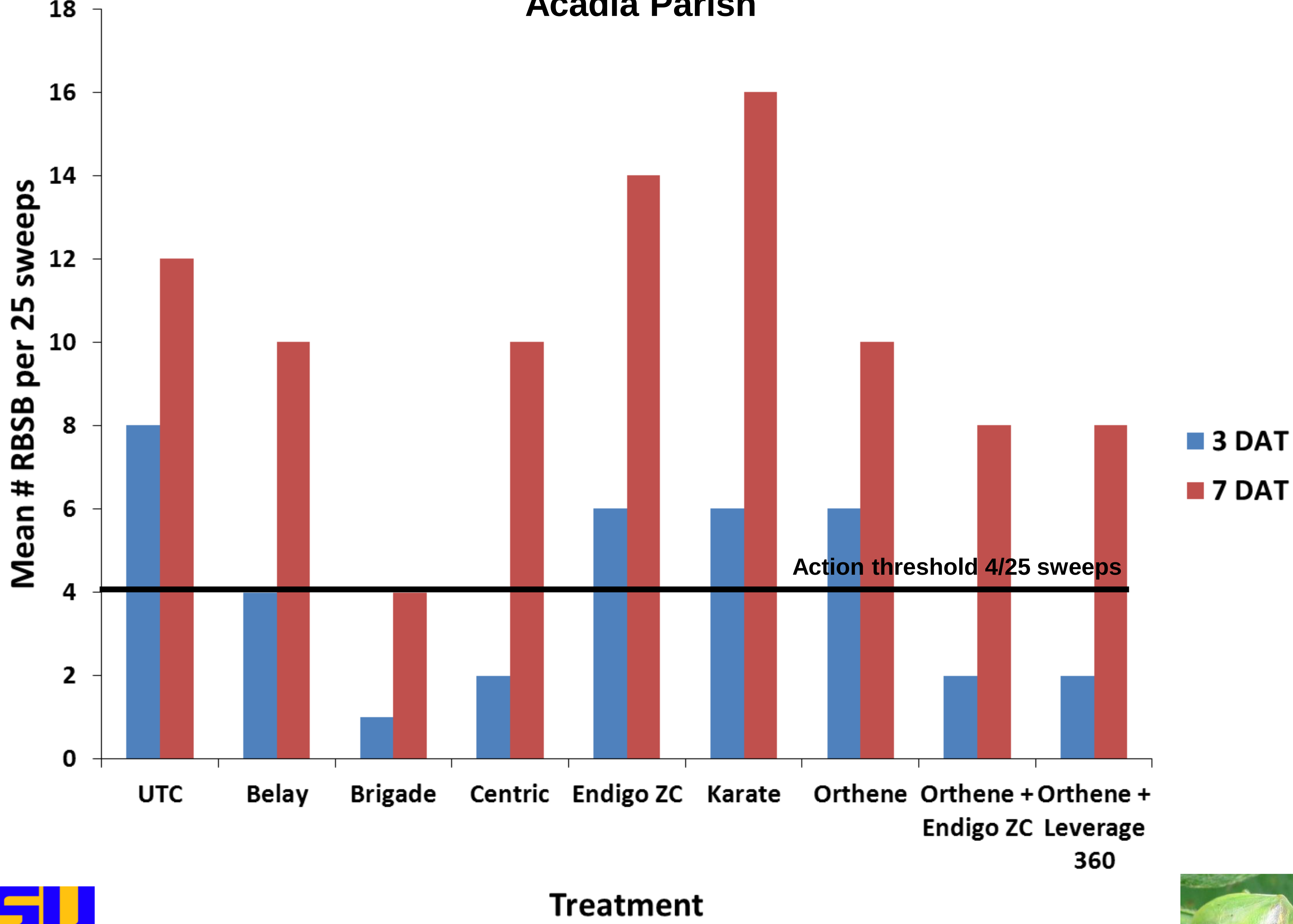
- **RBSB has limited dispersal rates and mate with individuals in their vicinity, most likely their relatives.**

- **Resistance will be localized but will be permanent**



East Baton Rouge Parish
Mean # RBSB per 25 sweeps
16
14
12
10
8
6
4
2
0
Action threshold 4/25 sweeps
UTC
Belay
Brigade
Centric
Endigo ZC
Karate
Orthene
Orthene + Endigo ZC
Orthene + Leverage 360
Treatment
3 DAT
7 DAT
14 DAT

Acadia Parish



Q3. When can I terminate stink bug control?

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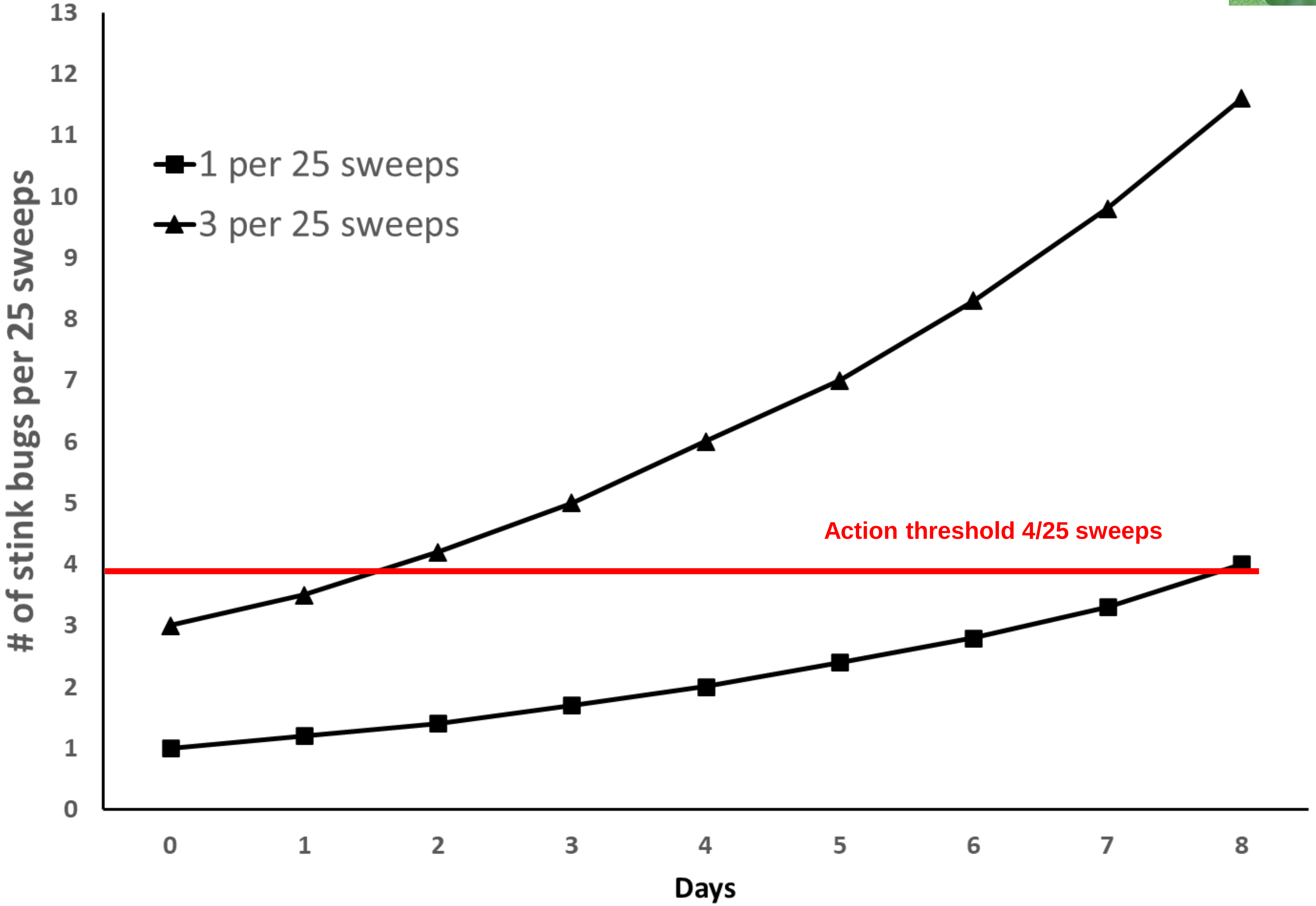
Redbanded stink bug population growth curve



Losses can occur even at R8

Effect of stink bug feeding on MGV soybean

	% wt loss (g) due to stink bug feeding			
Stink bug spp.	**1 DAT**	**5 DAT**	**10 DAT**	**15 DAT**
C. hilaris	0.0 a	0.0 a	0.0 a	0.0 a
E. quadrator	0.0 a	0.0 a	0.0 a	0.0 a
N. viridula	1.1 a	5.0 b	6.4 b	8.2 b
P. guildinii	3.5 a	7.5 b	12.8 b	10.3 b
P-value	0.5594	0.0274	0.0009	0.0181

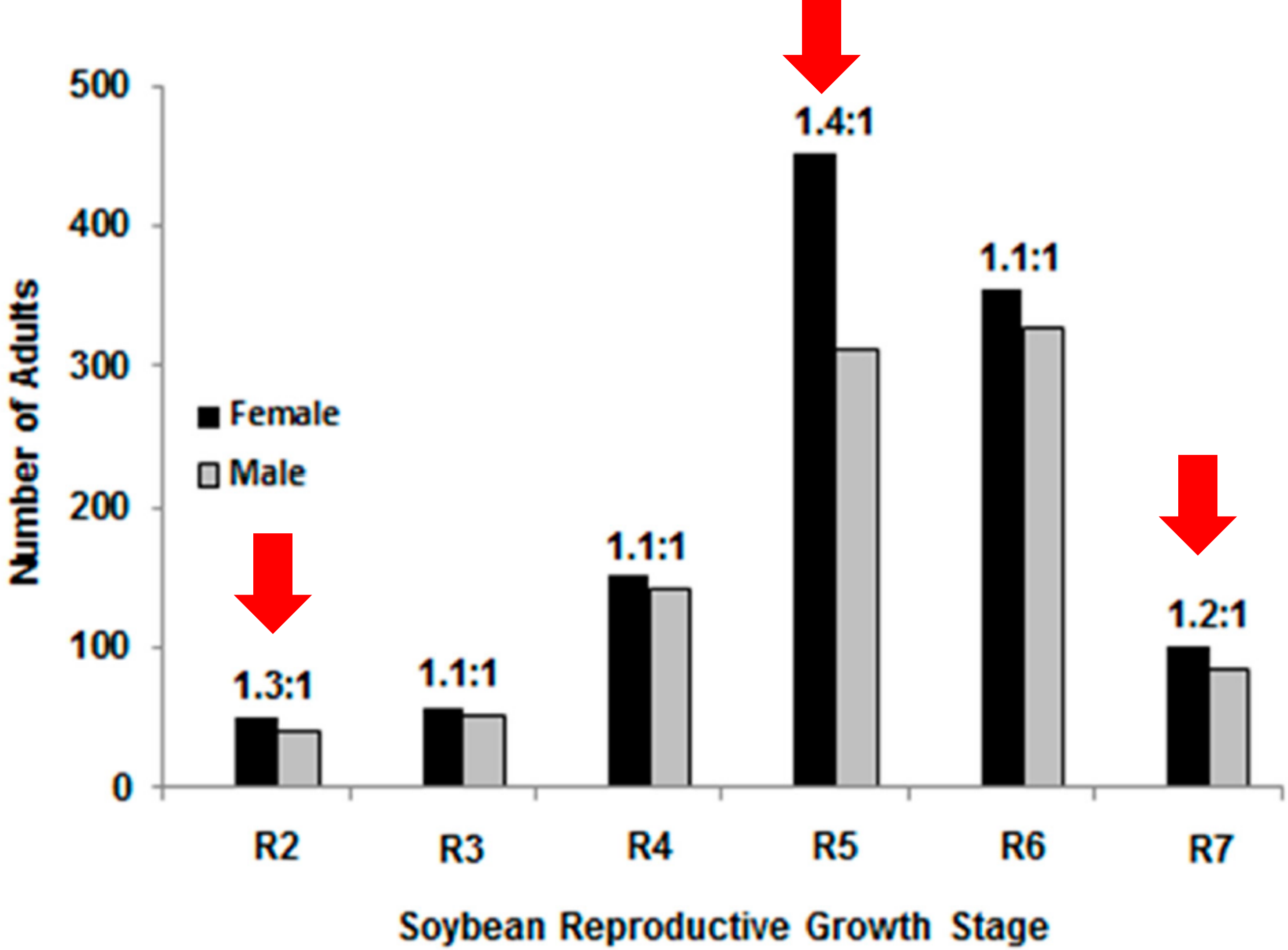


Figure 3. Redbanded stink bug sex ratio during soybean reproductive growth stages.

More females at R2, R5, and R7 = more eggs

More eggs = more stink bugs

It's important to have a small stink bug population on your farm at the end of the year

Month	Initial pop. 100	Initial pop. 5	Cold event
Oct.	100	5	5
Nov.	432	22	22
Dec.	1,867	93	8
Jan.	8,073	403	35
Feb.	34,891	1,744	150
Mar.	150,797	7,539	645
Apr.	651,739	32,586	2,791

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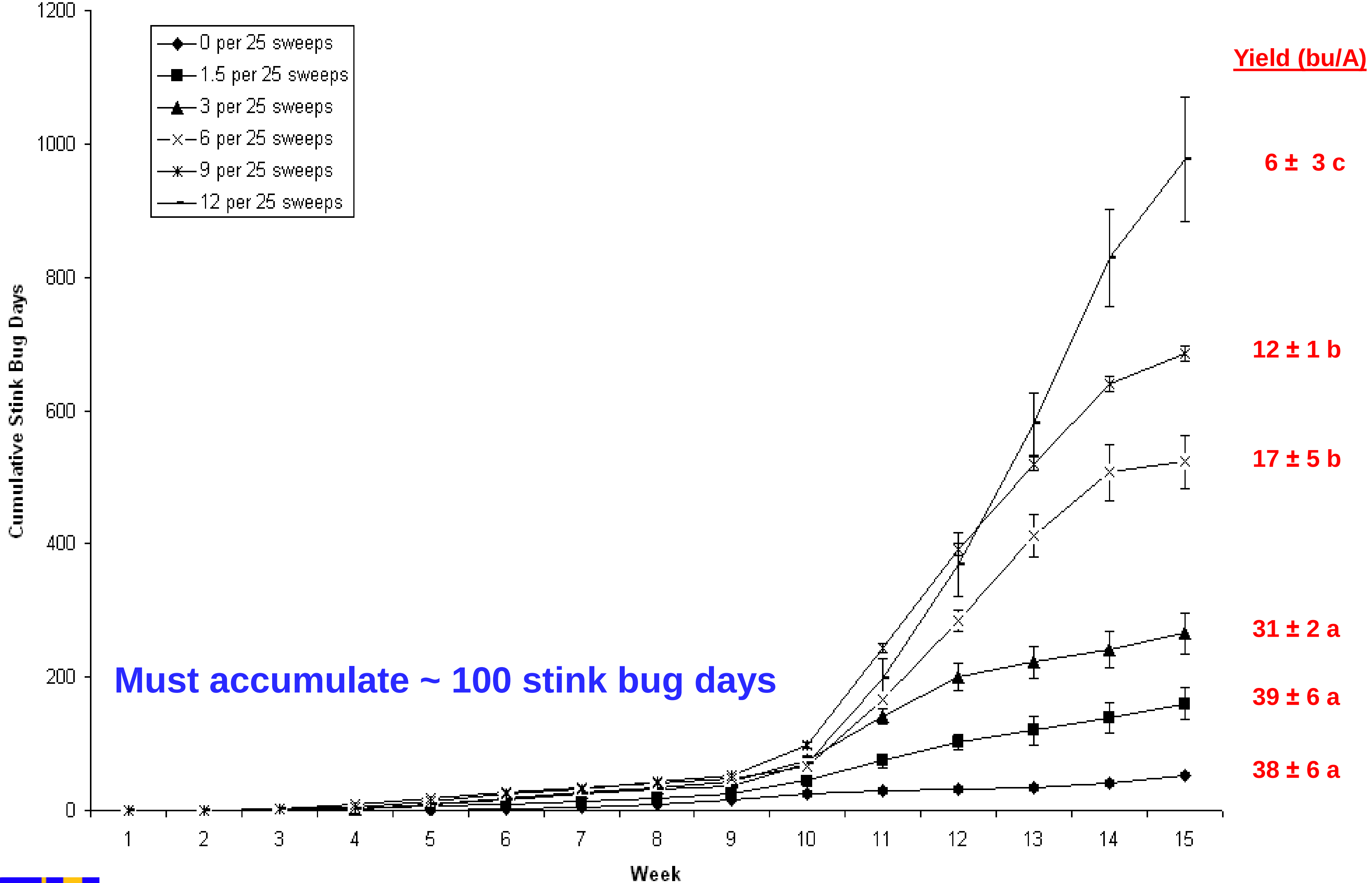
Q4. Subthreshold levels over an extended period of time?

Sub-threshold levels of stink bugs over an extended period?



Means followed by the same letter are not significantly different (REGWQ; *P*>0.05).

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Thank you

Questions?