

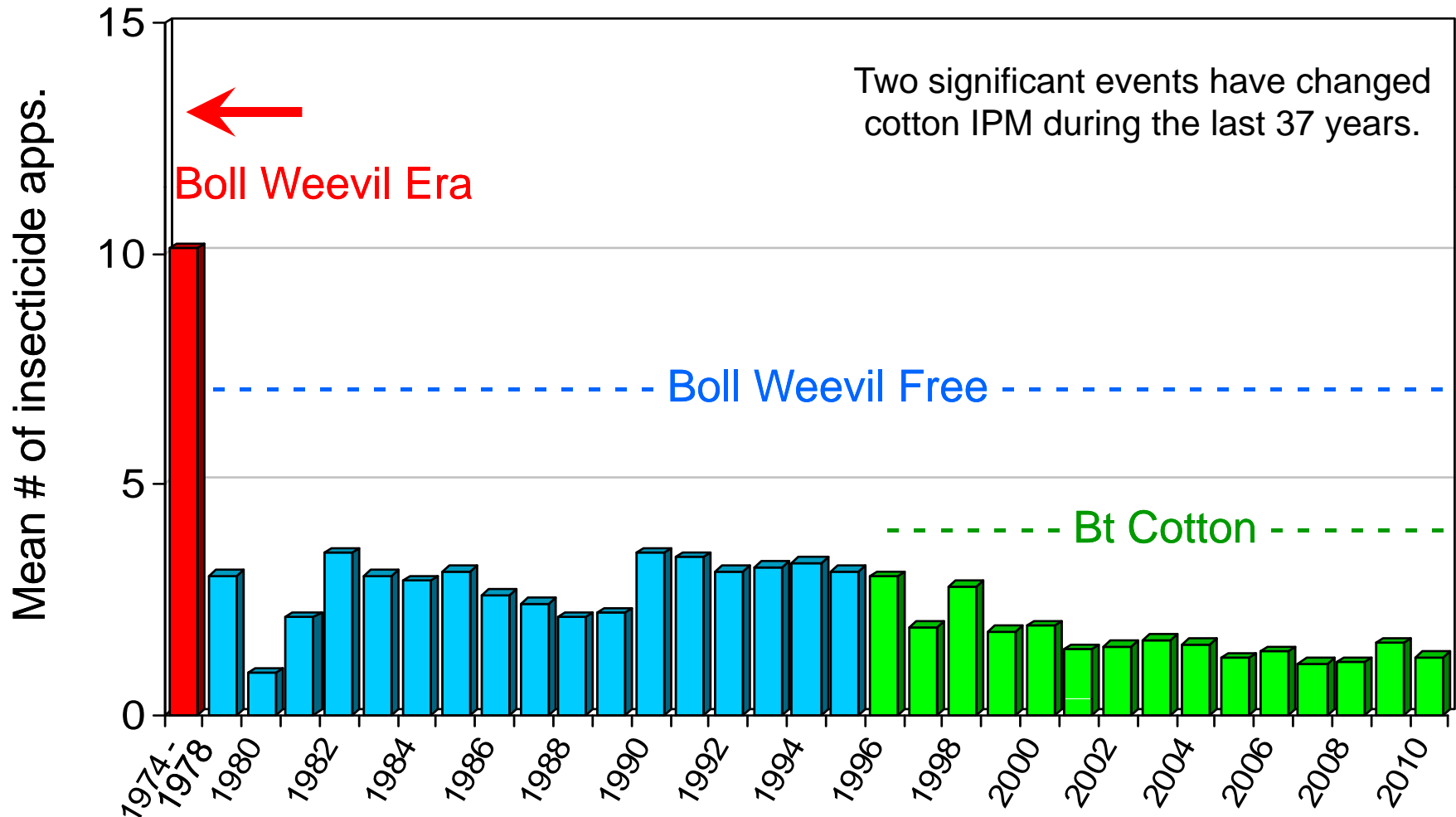
# Stink Bug Management in the Southeast

2010 Cotton Incorporated  
Crop Management Seminar

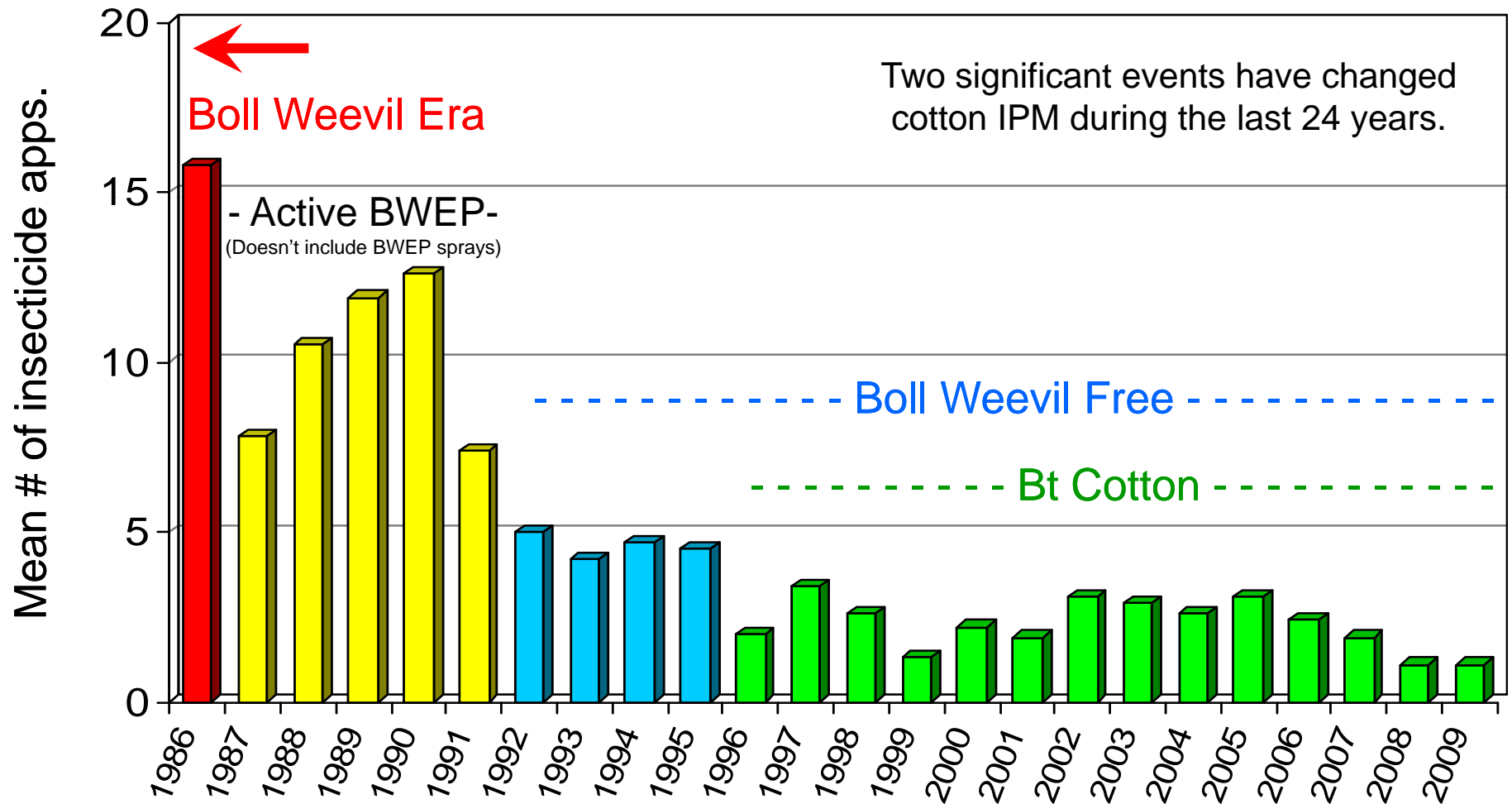


Jack Bacheler  
NCSU

# Insecticide Applications per Acre North Carolina Cotton, 1974-2010



# Insecticide Applications per Acre Georgia Cotton, 1986-2009



# Plant bug treatments

*2004-2010 NC cotton insecticide use survey*

Year	% treated
04	12.2
05	7.4
06	3.2
07	1.6
08	1.9
09	4.8
10	12.4







Treated

Untreated



# North Carolina's major boll damaging stink bug species



nymph



adult

Green stink bug



nymph

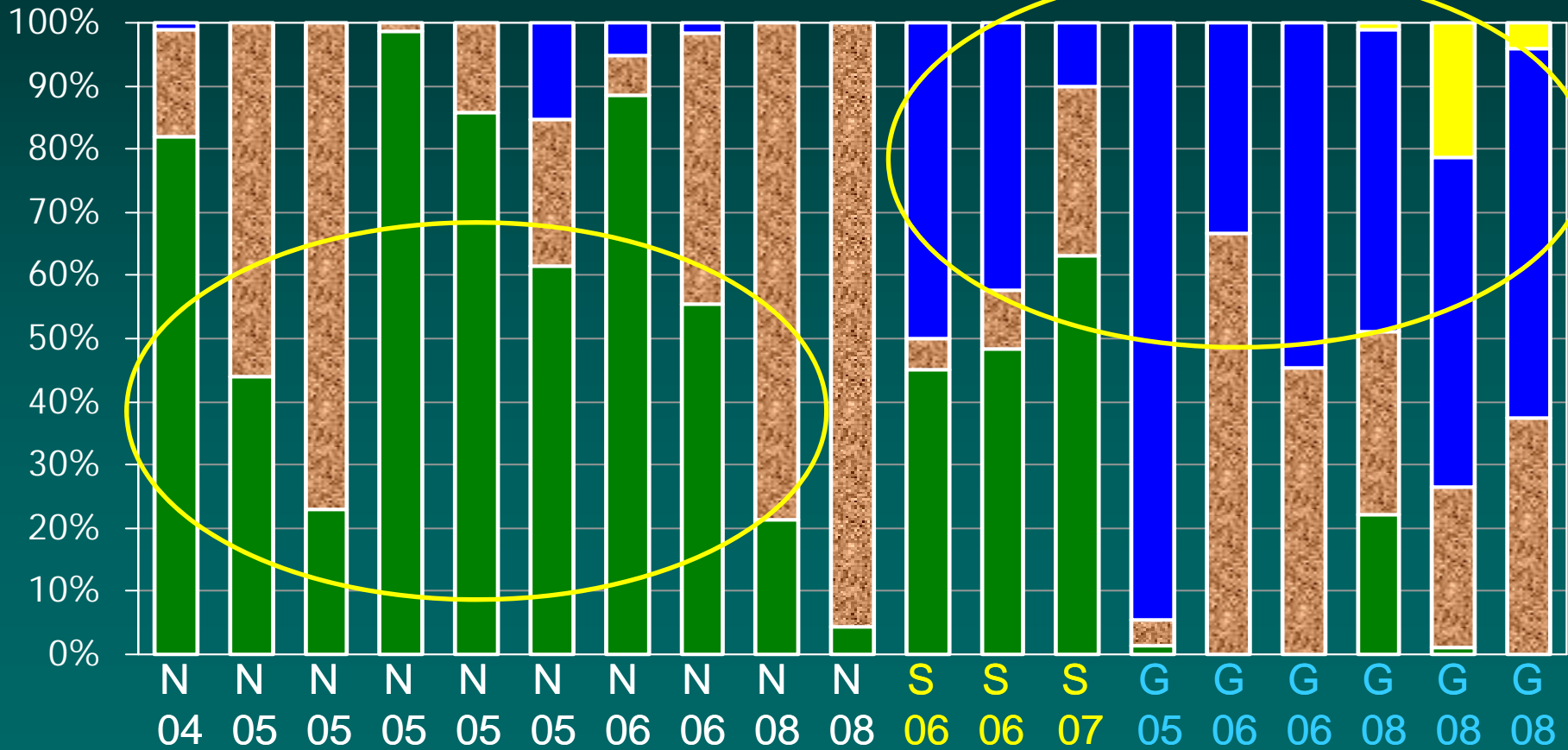


adult

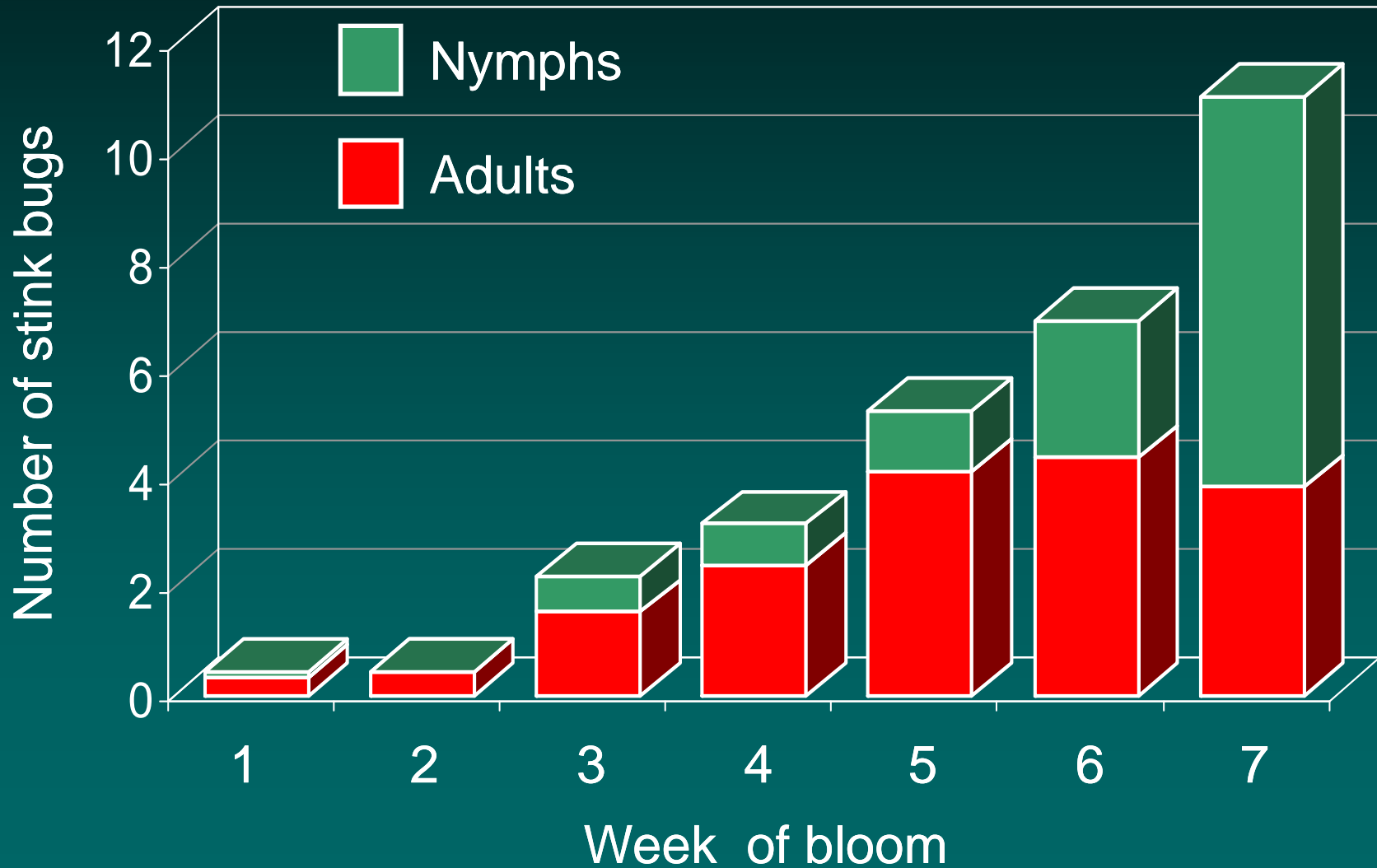
Brown stink bug

# Proportion of green, brown and southern green stink bugs at SE test locations, 2004-2008

■ = Green    
 ■ = Brown    
 ■ = Southern green    
 ■ = Other



# Average number of stink bugs per 6 row feet (n = 8 tests, 2005-2008)

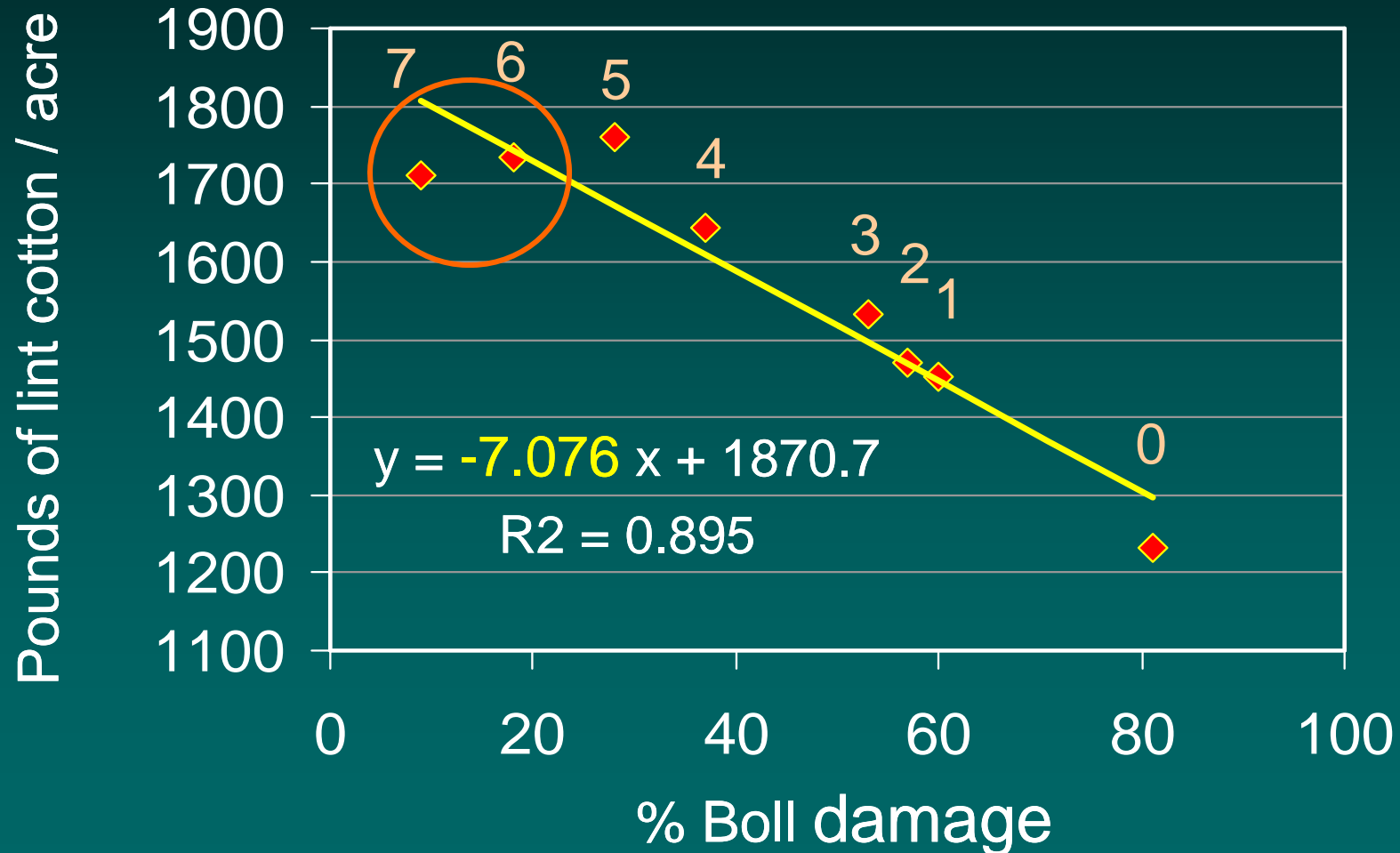




# Stink bug damage to dime-sized boll



# Stink bug damage to bolls vs. yield; Wayne Co., 2004





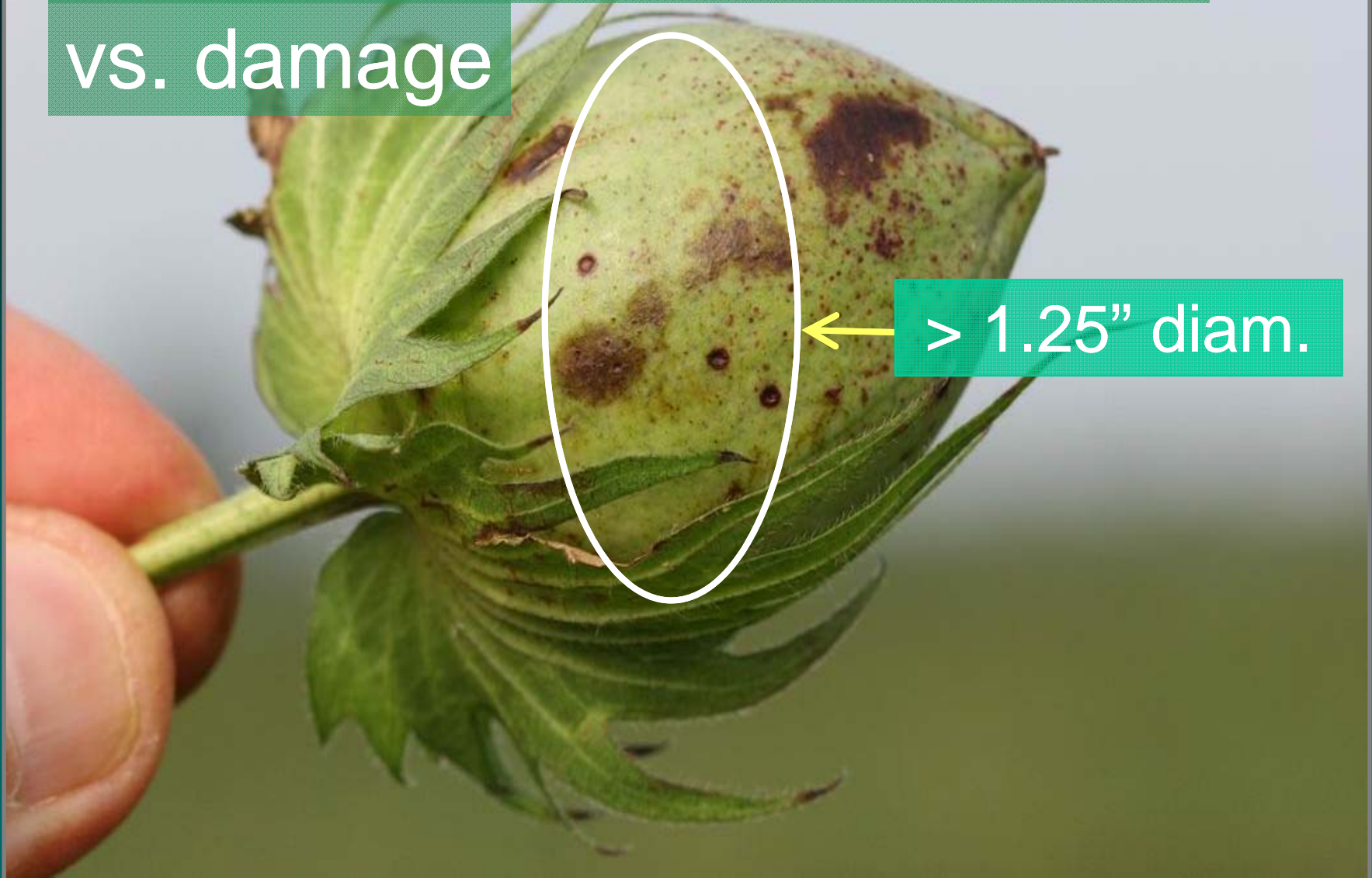
Quarter-sized boll =  $15/16$  inch





Bolls become safe from stink bug damage over time, 3.5 weeks is considered a “Safe Boll”

Boll age (>3.5 weeks) and size  
vs. damage



> 1.25" diam.





# Stink bugs damage cotton less:

- 1) when there are fewer susceptible bolls  
*early in the bloom period*
- 2) when bolls are no longer susceptible  
*late in the bloom period*

# Thresholds evaluated:

- UTC: untreated control
- Wkly bloom: sprayed weekly from 1<sup>st</sup> wk of bloom
- 10% sprayed at 10% with 1 internal symptom
- 20% sprayed at 20% with 1 internal symptom
- 30% sprayed at 30% with 1 internal symptom
- Dynamic 50, 30, 10, 10, 10, 20, 30, 50% by wk

Treated with pyrethroid + dicotophos  
(e.g., Baythroid @ 0.03 + Bidrin @ 0.25 lb ai/acre)

Profit difference between use of  
20% vs. **Dynamic threshold**  
(n = 47 tests; NC, SC & GA)

Stink bug level (apps @ 20%)	UT	20%	Dynamic	Difference
Low (0 app.)	0	0	+7.42	<b>+ \$7.42</b>
Mod. (1 app.)	0	-10.37	+8.82	<b>+ \$19.29</b>
High (2+ app.)	0	+103.83	+137.61	<b>+ \$33.78</b>



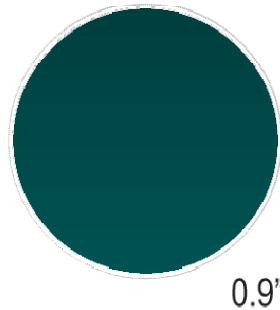
## Characteristics of a good field scouting device:

- ✓ card must be durable
- ✓ information must be easily understood
- ✓ must explain scouting procedure
- ✓ accommodate variability in state recomm.
- ✓ thresholds clearly spelled out on card
- ✓ show images of damage?
- ✓ self-contained scouting tool

# Side 1

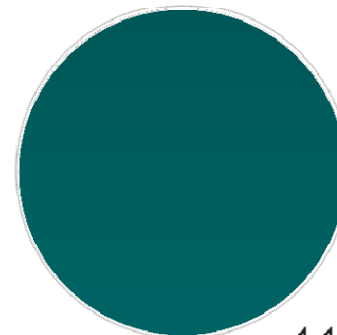
## *Decision aid for stink bug thresholds in Southeast cotton*

- 1 Pull random sample of quarter size diameter bolls, avoid field edges. (boll sizes between 0.9" and 1.1")
- 2
- 3 1 boll / acre, no less than 25 / field.
- 3 Sort bolls into two piles: those with and those without, obvious external lesions.
- 4 Crack and inspect bolls with external lesions for internal damage (boll wall warts, stained seed or lint).
- 1
- 5 If threshold is not met for that week, (see chart) check the remaining bolls for internal damage.
- 6 Treat field only if the threshold is met for that week.



0.9"

Bolls should fit through the large hole but not the small one.



1.1"

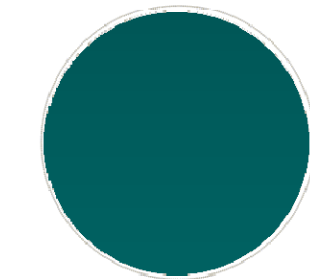
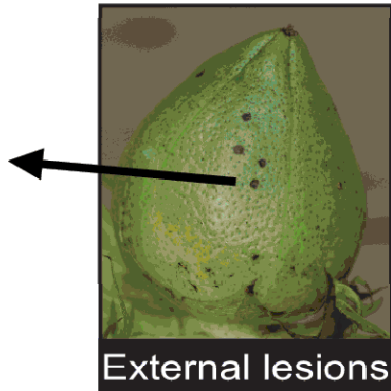
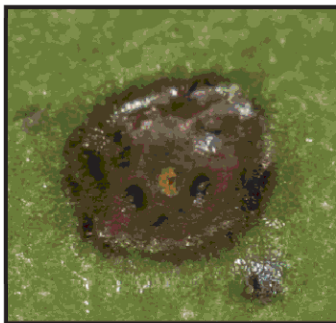
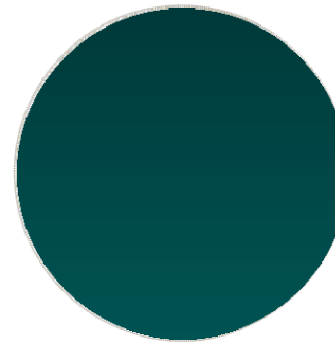
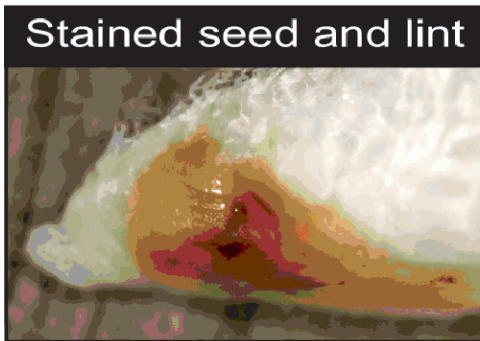
Week of bloom	Threshold (% internal boll damage)
1	50%
2	30%
3	10%
4	10%*
5	10%*
6	20%
7	30%
8	50%

\*Consult state guidelines for scouting intervals.



# Side 2

## Decision aid for stink bug thresholds in Southeast cotton



Boll diameter should be between 0.9" and 1.1"





# Lanyard for removing decision aid



**Decision aid for stink bug thresholds in Southeast cotton**

Stained seed and lint

Boll wall warts

External lesions

Quarter size boll

Boll diameter should be between 0.9" and 1.1"

**CLEMSON**  
COOPERATIVE EXTENSION

**Decision aid for stink bug thresholds in Southeast cotton**

Stained seed and lint

Boll wall warts

External lesions

Quarter size boll

Boll diameter should be between 0.9" and 1.1"

Virginia Tech  
Virginia Cooperative Extension  
Imagined the Future

**Decision aid for stink bug thresholds in Southeast cotton**

Stained seed and lint

Boll wall warts

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Quarter size boll

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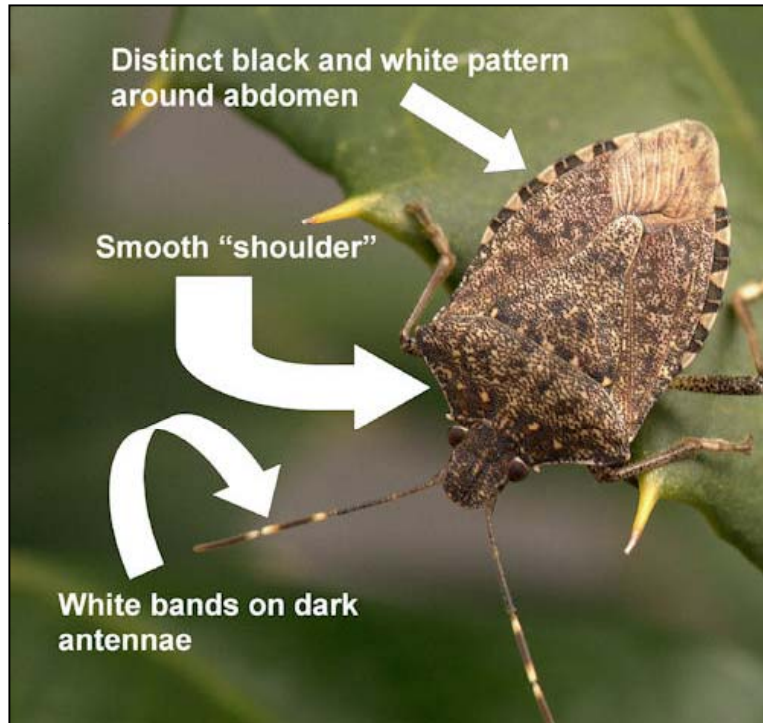
THE UNIVERSITY OF GEORGIA  
COOPERATIVE EXTENSION  
College of Agricultural and Environmental Sciences, A. M. Proctor and Company, Inc.



## Characteristics of a good field scouting device:

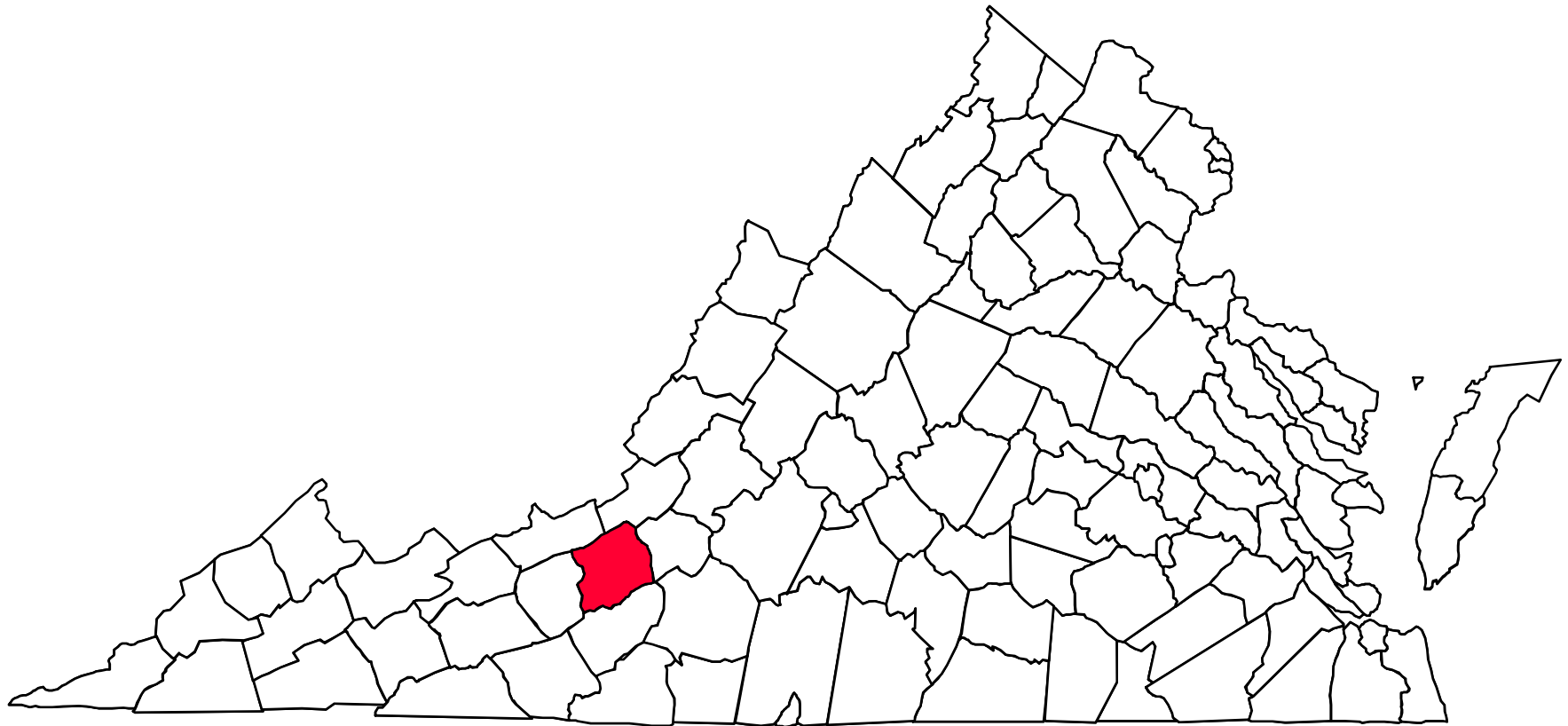
- ✓ field-ready card
- ✓ information straightforward
- ✓ scouting procedures listed
- ✓ minor differences in state recomm. listed
- ✓ thresholds clearly spelled out on card
- ✓ damage images imbedded in plastic
- ✓ self-contained scouting tool

# Potential Cotton Pest??

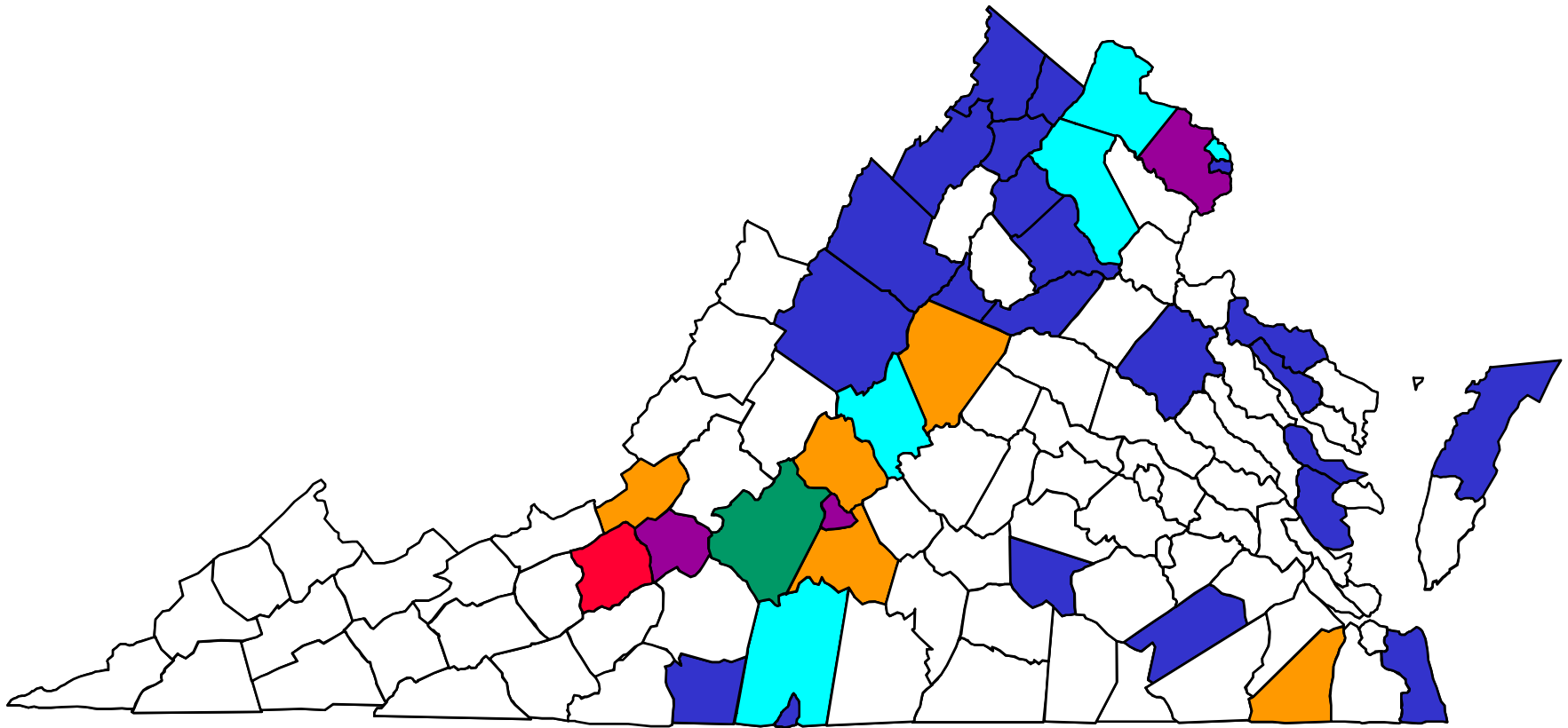


Brown marmorated stink bug





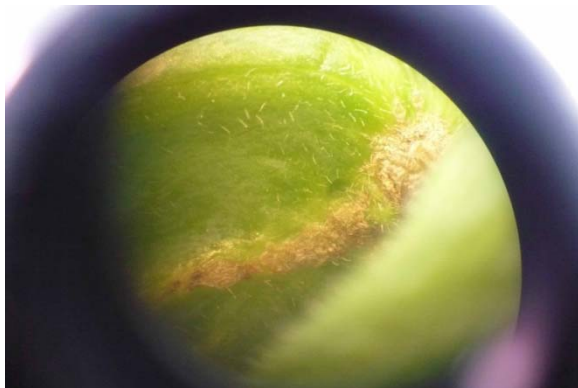
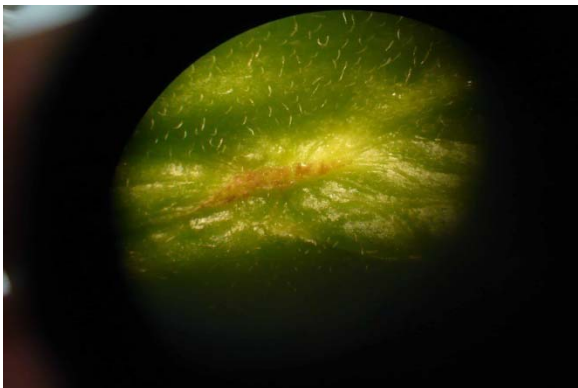
VA counties reporting  
brown marmorated stink bug, 2004.



VA counties reporting  
brown marmorated stink bug, 2010







**Okra images  
courtesy of  
Barbara Leach**



