

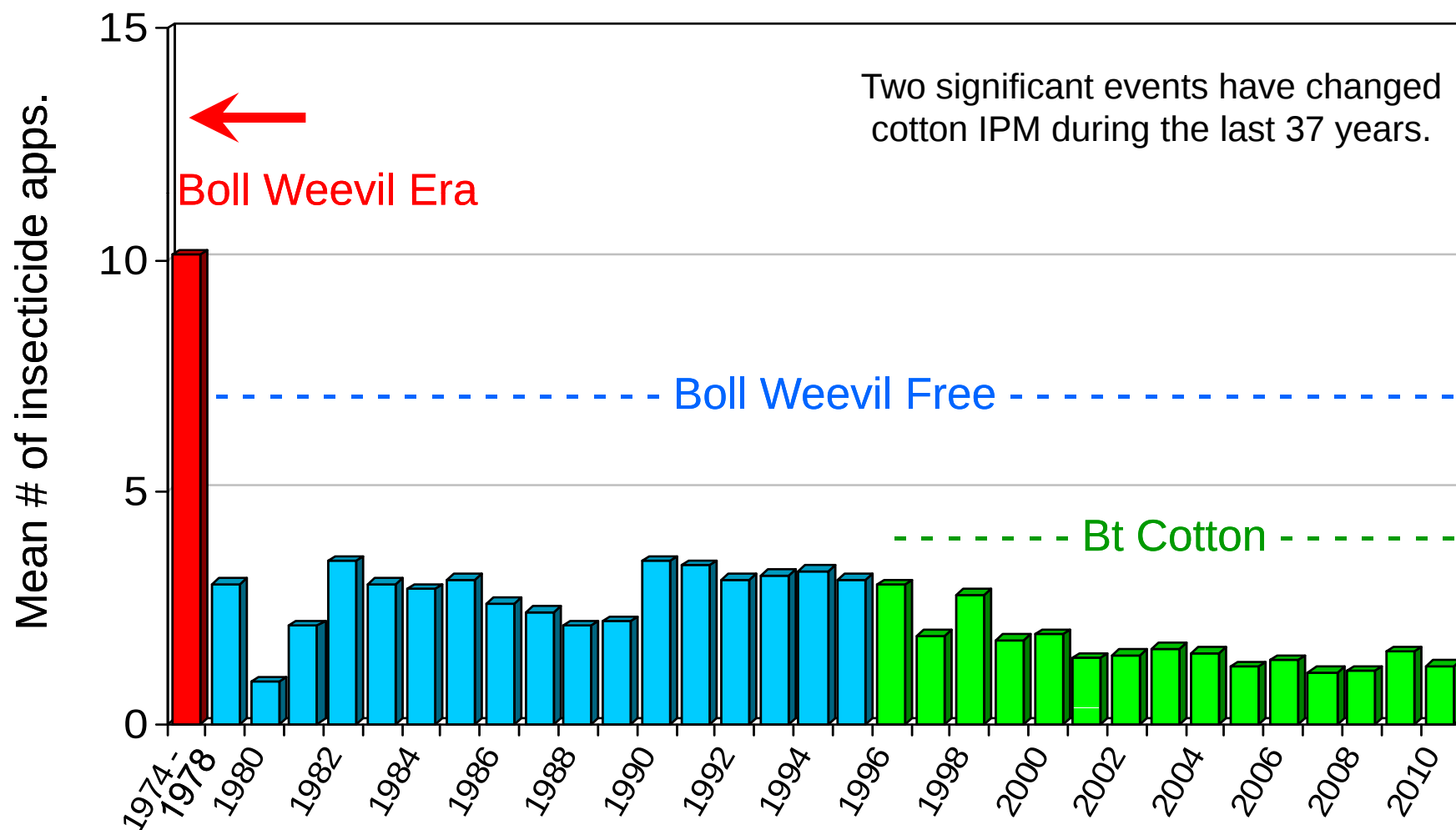
Stink Bug Management in the Southeast

2010 Cotton Incorporated
Crop Management Seminar

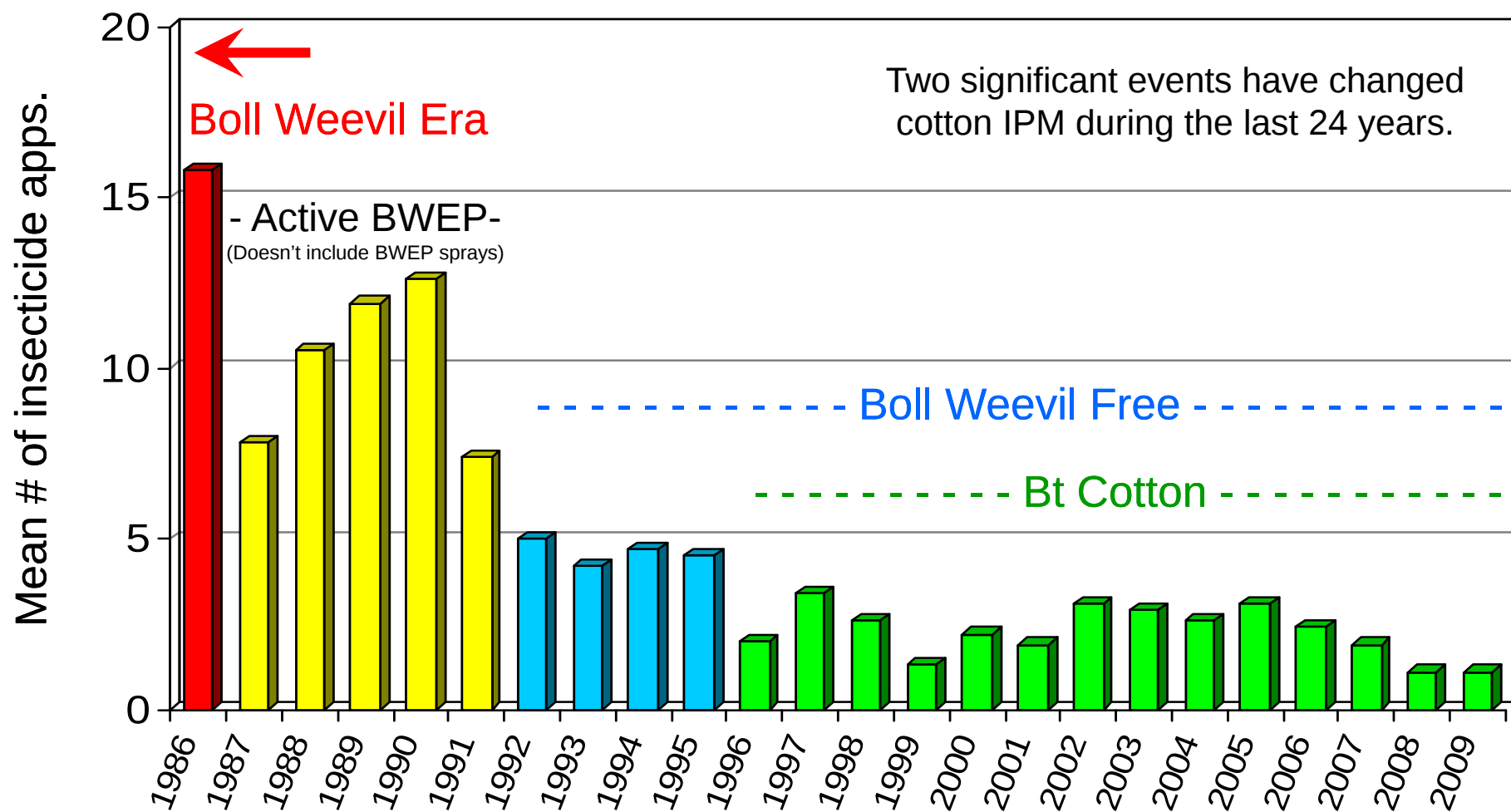


Jack Bacheler
NCSU

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

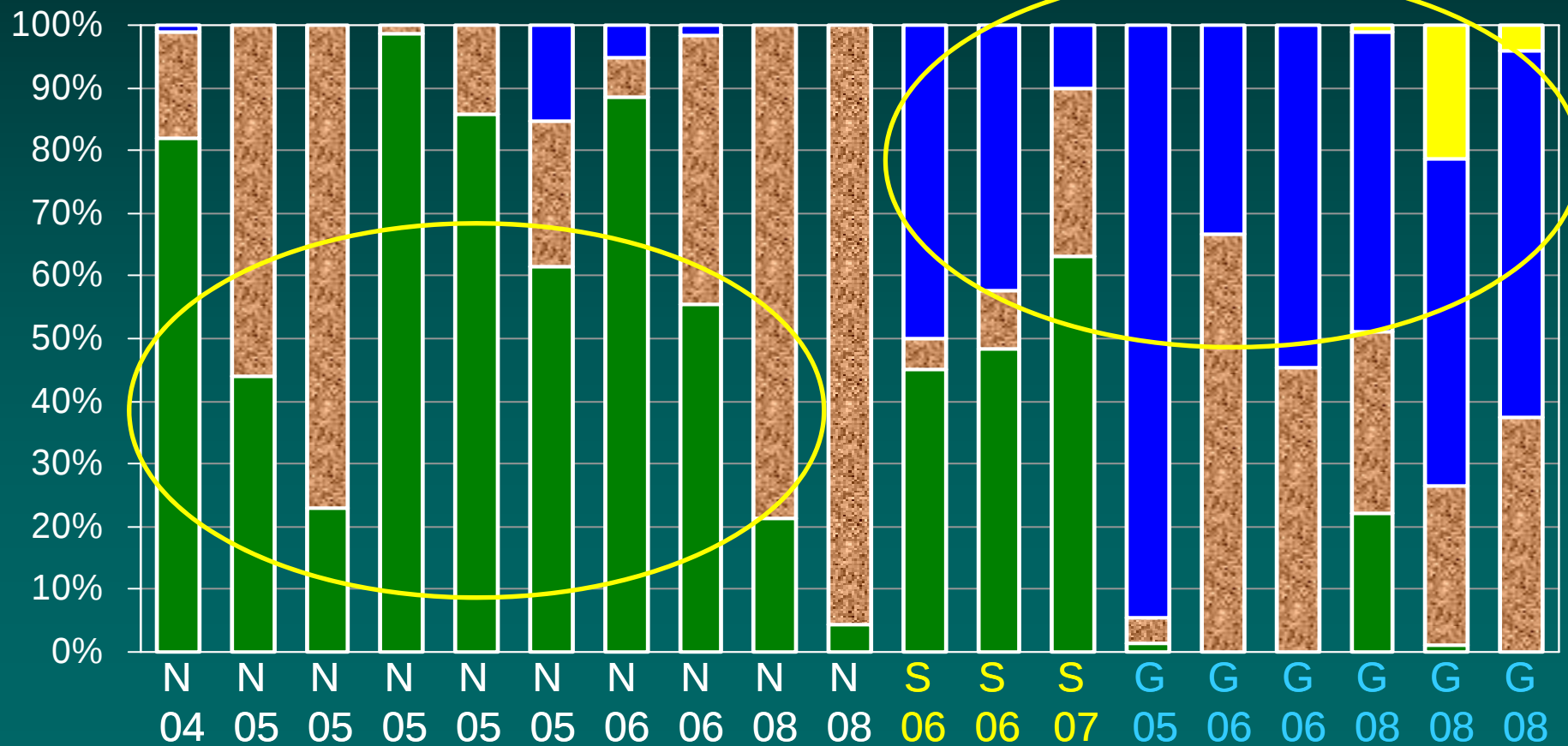


adult

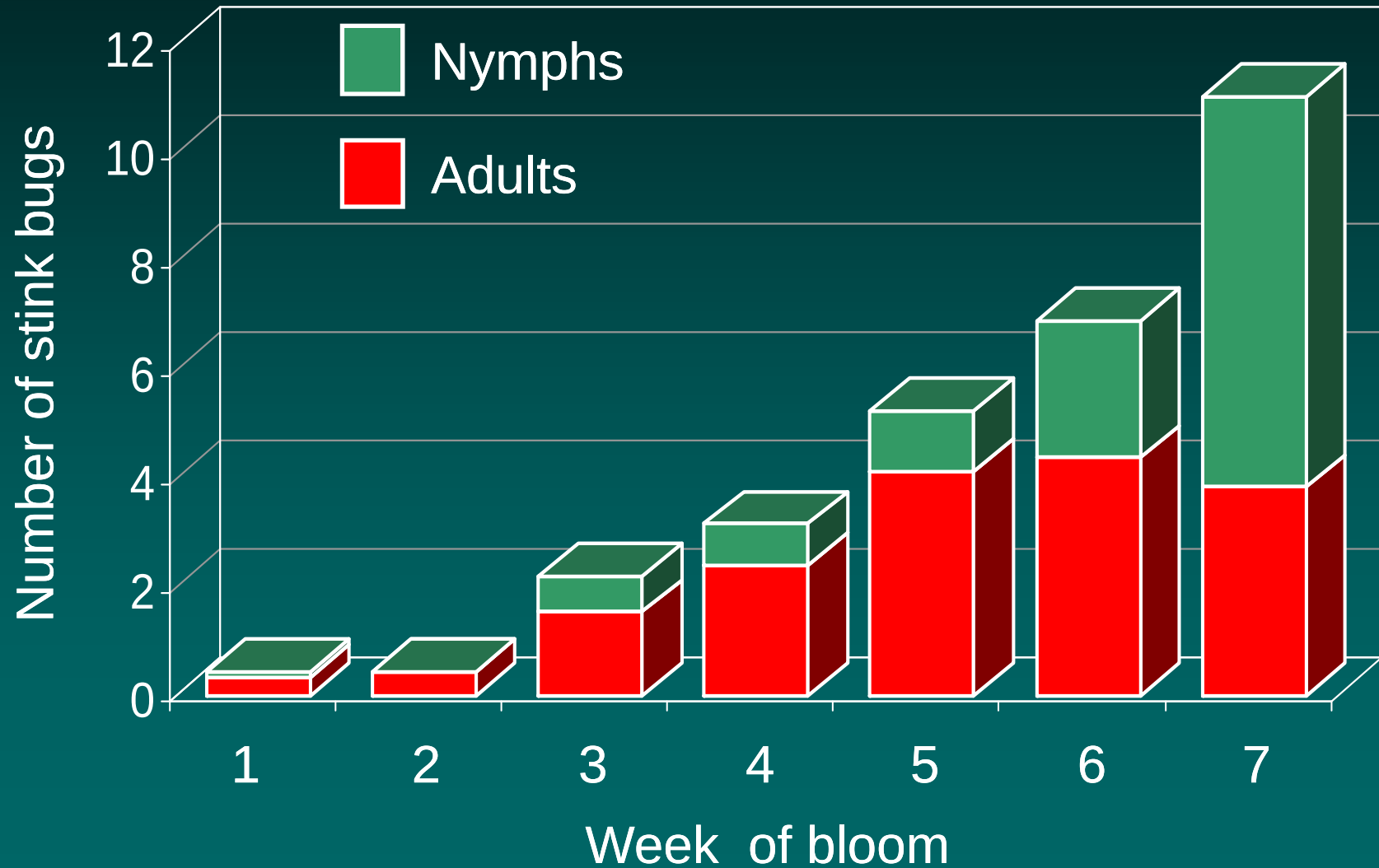
Brown stink bug

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

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



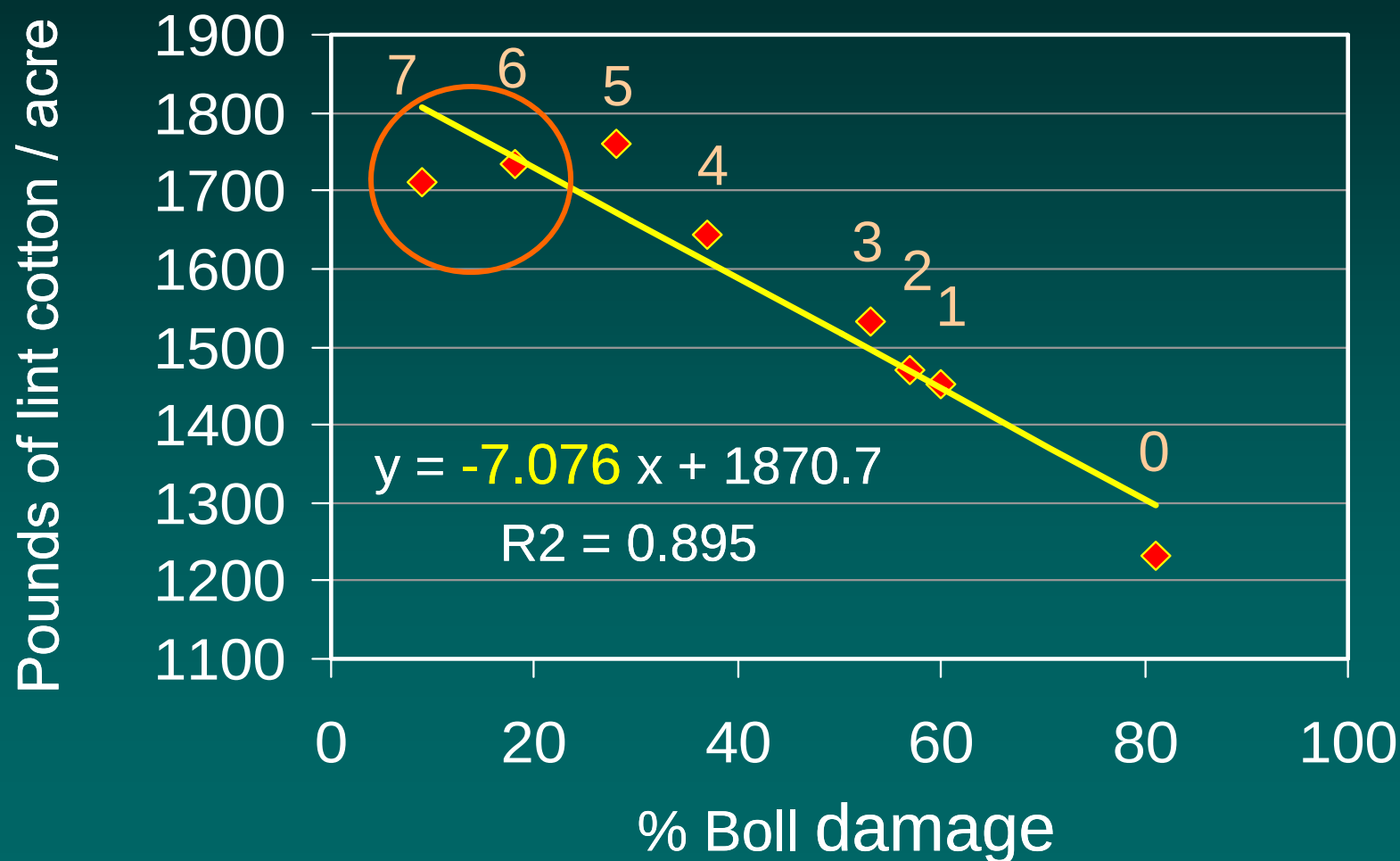
Average number of stink bugs per 6 row feet (n = 8 tests, 2005-2008)



Stink bug damage to dime-sized boll



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



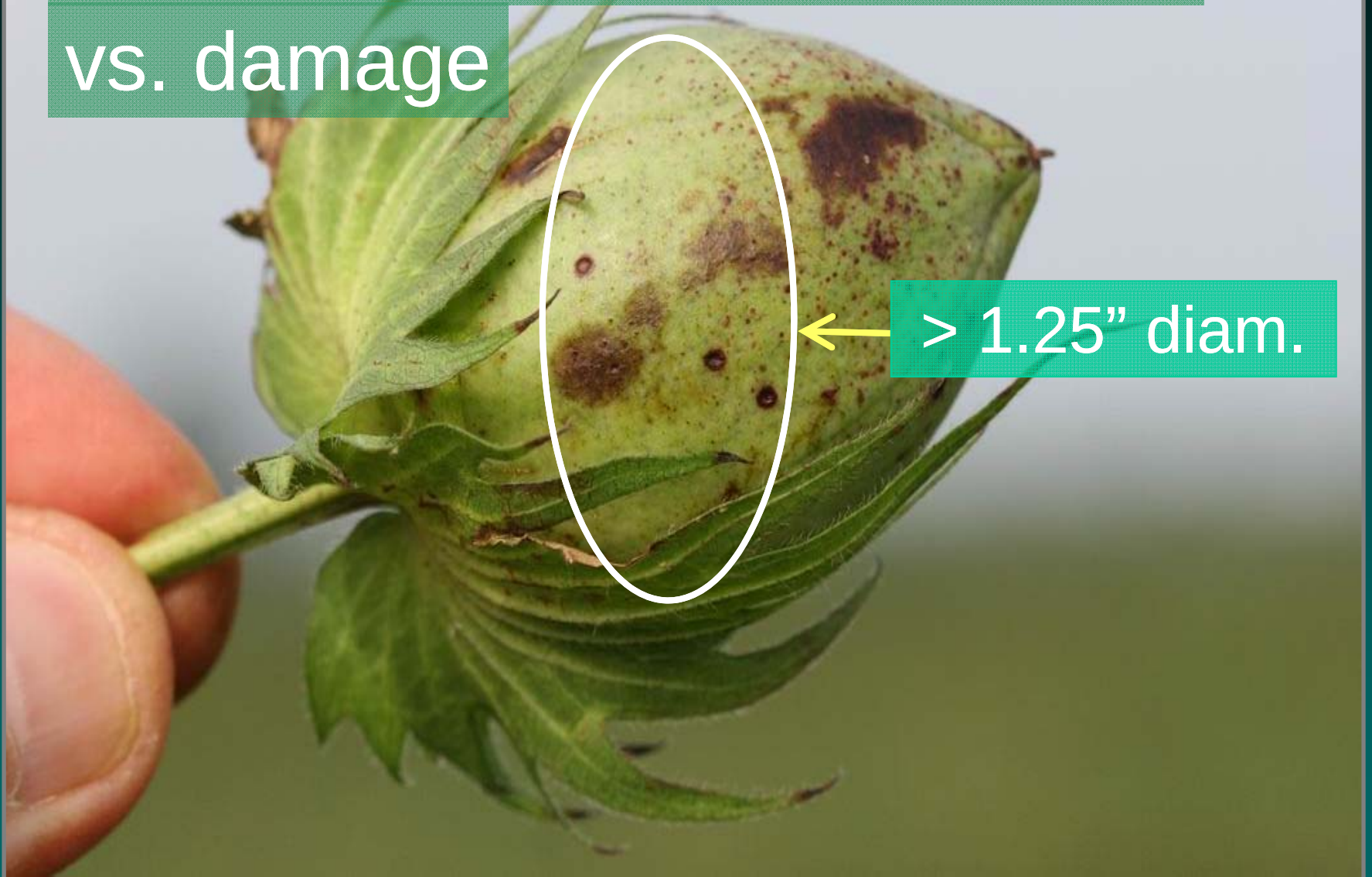


Quarter-sized boll = $\frac{15}{16}$ inch



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





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 1st 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	+ \$7.42
Mod. (1 app.)	0	-10.37	+8.82	+ \$19.29
High (2+ app.)	0	+103.83	+137.61	+ \$33.78

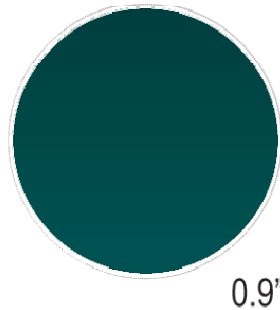
Characteristics of a good field scouting device:

- ✓ 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

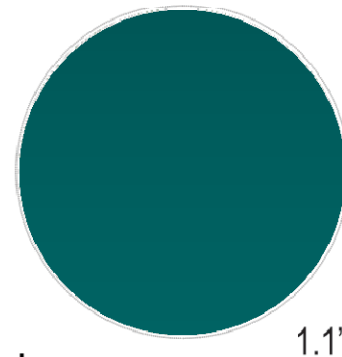
Side 1

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.
- 4 Sort bolls into two piles: those with and those without, obvious external lesions.
- 1
- 5 Crack and inspect bolls with external lesions for internal damage (boll wall warts, stained seed or lint).
- 6 If threshold is not met for that week, (see chart) check the remaining bolls for internal damage.
- 7
- 8 Treat field only if the threshold is met for that week.



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



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

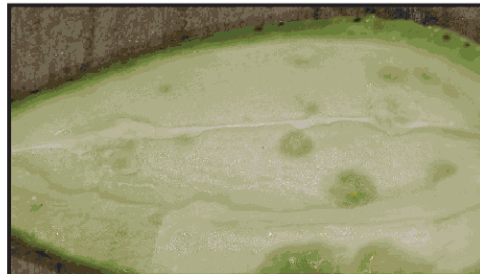
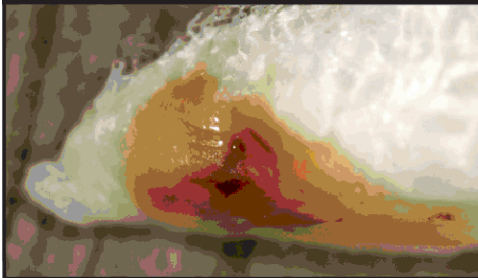
*Consult state guidelines for scouting intervals.



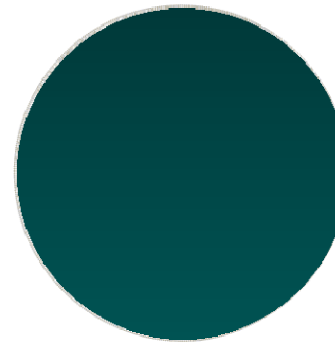
Side 2

Decision aid for stink bug thresholds in Southeast cotton

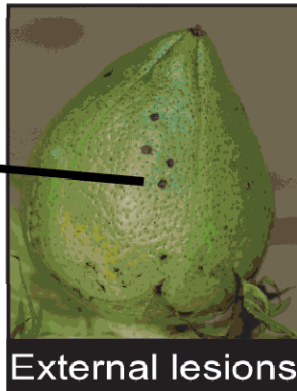
Stained seed and lint



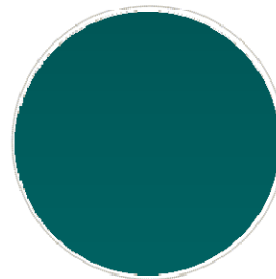
Boll wall warts



AG-730

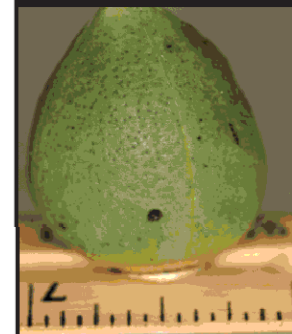


External lesions



Boll diameter should be between 0.9" and 1.1"

Quarter size boll



Lanyard for removing decision aid



Decision aid for stink bug thresholds in Southeast cotton

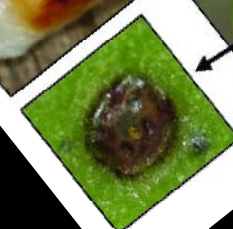
CLEMSON
COOPERATIVE EXTENSION



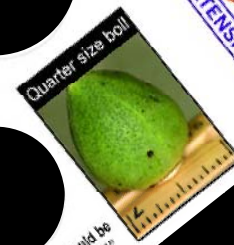
Stained seed and lint



Boll wall warts



External lesions



Quarter size boll

Boll diameter should be between 0.9" and 1.1"

Decision aid for stink bug thresholds in Southeast cotton

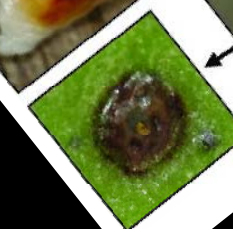
Virginia Cooperative Extension
VirginiaTech
Grant the Future



Stained seed and lint



Boll wall warts



External lesions



Quarter size boll

Boll diameter should be between 0.9" and 1.1"

Decision aid for stink bug thresholds in Southeast cotton

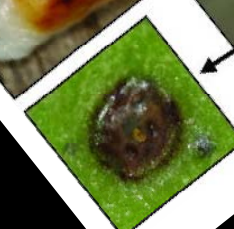
THE UNIVERSITY OF GEORGIA
COOPERATIVE EXTENSION
College of Agriculture and Environmental Sciences & Forestry and Consumer Sciences



Stained seed and lint



Boll wall warts

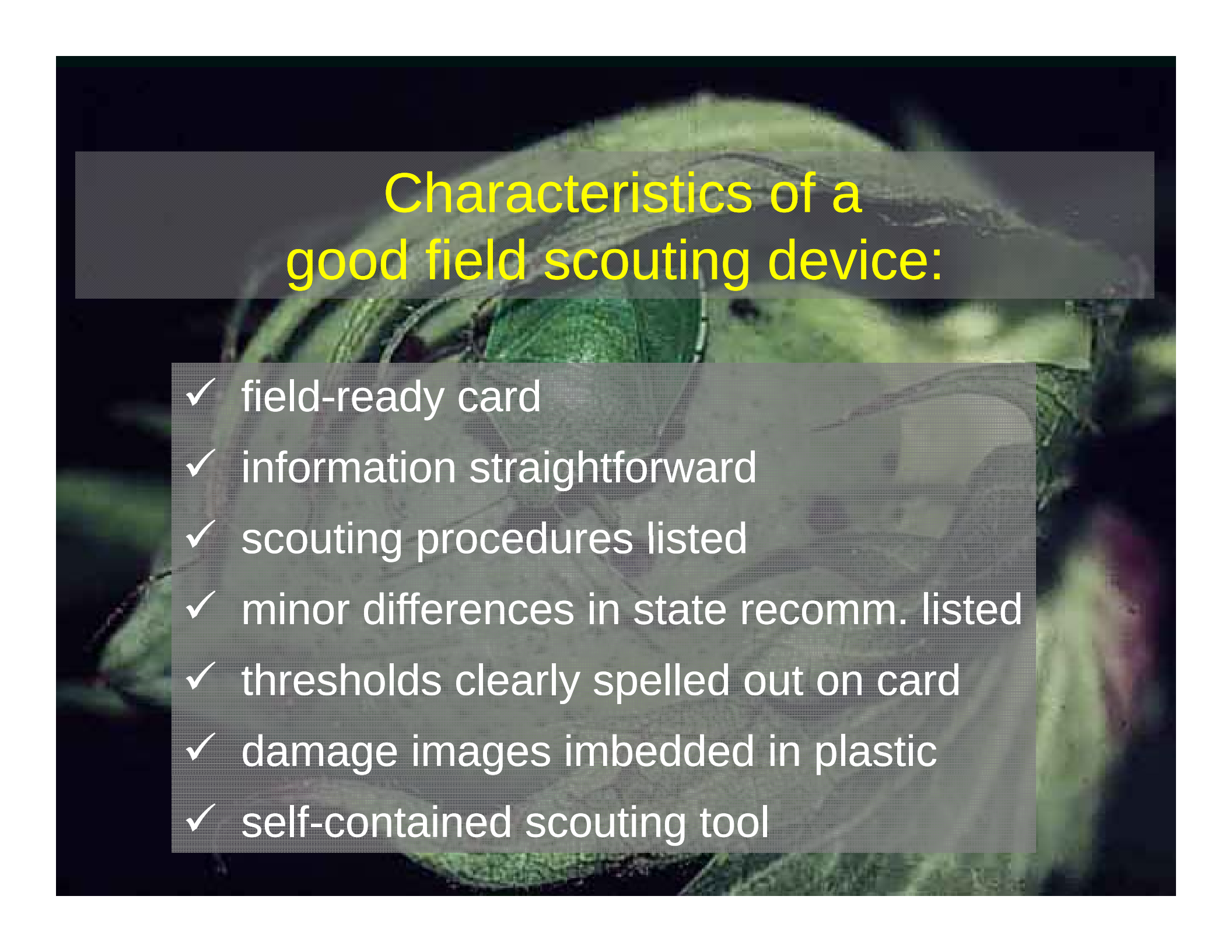


External lesions



Quarter size boll

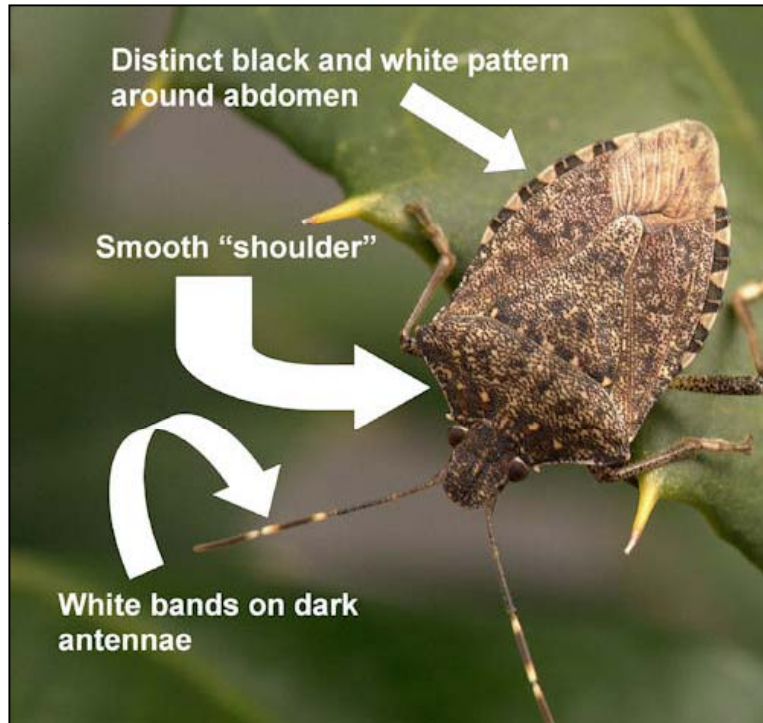
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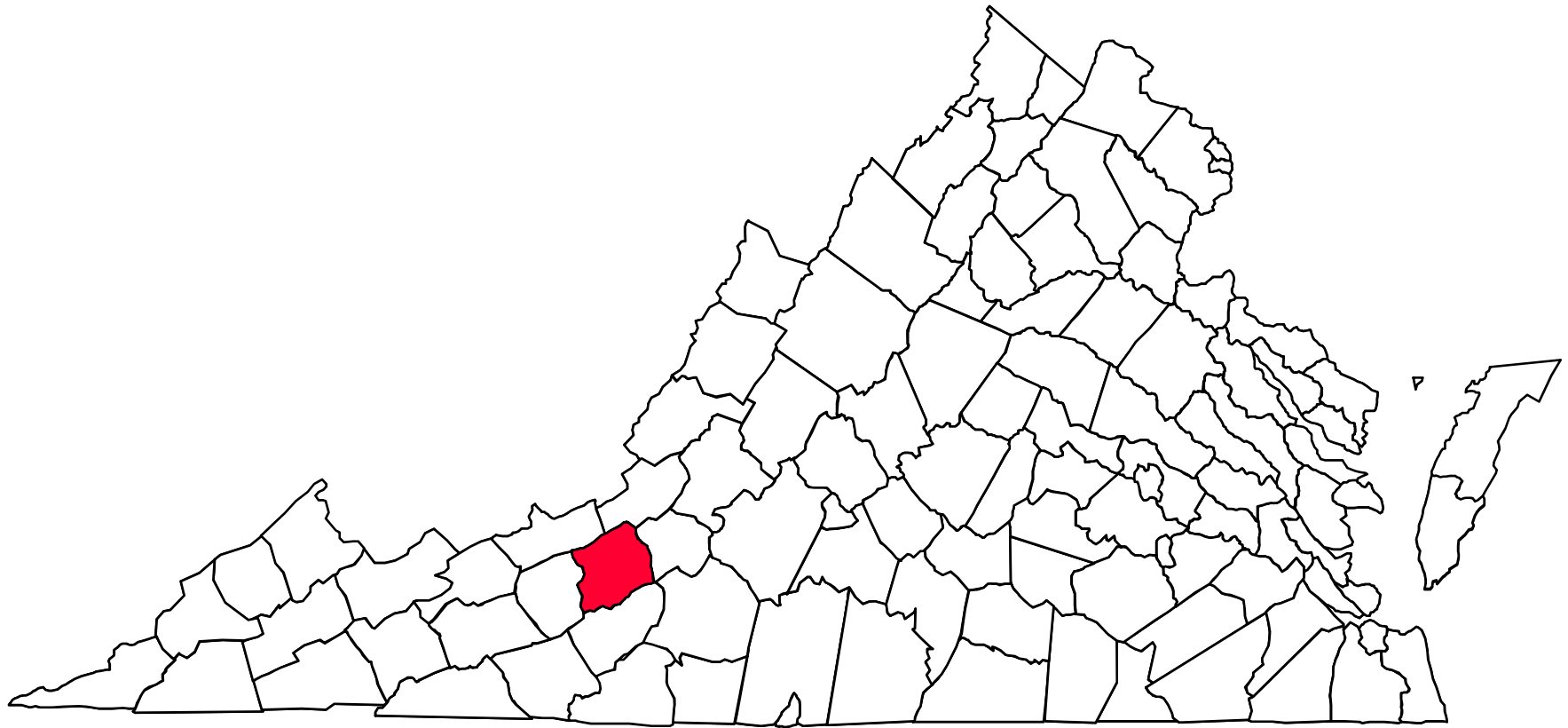
Characteristics of a good field scouting device:

- ✓ 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

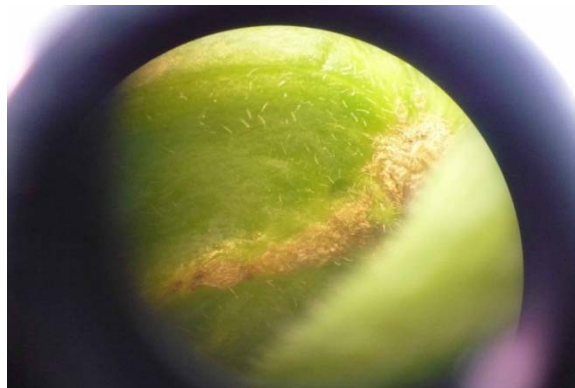
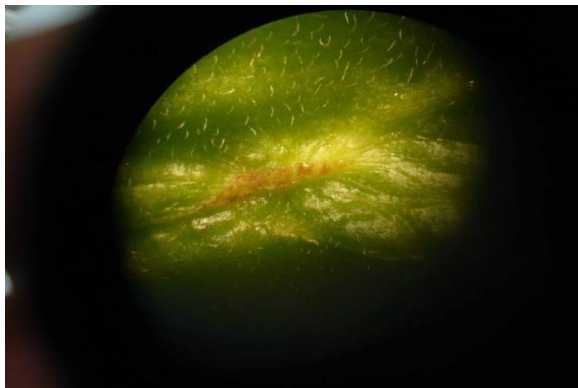


VA counties reporting
brown marmorated stink bug, 2004.



VA counties reporting brown marmorated stink bug, 2010





**Okra images
courtesy of
Barbara Leach**

