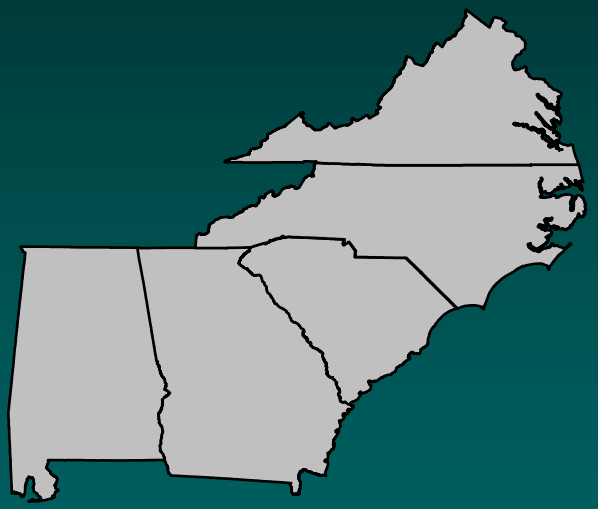
Management of Stink Bugs: a Southeast Perspective

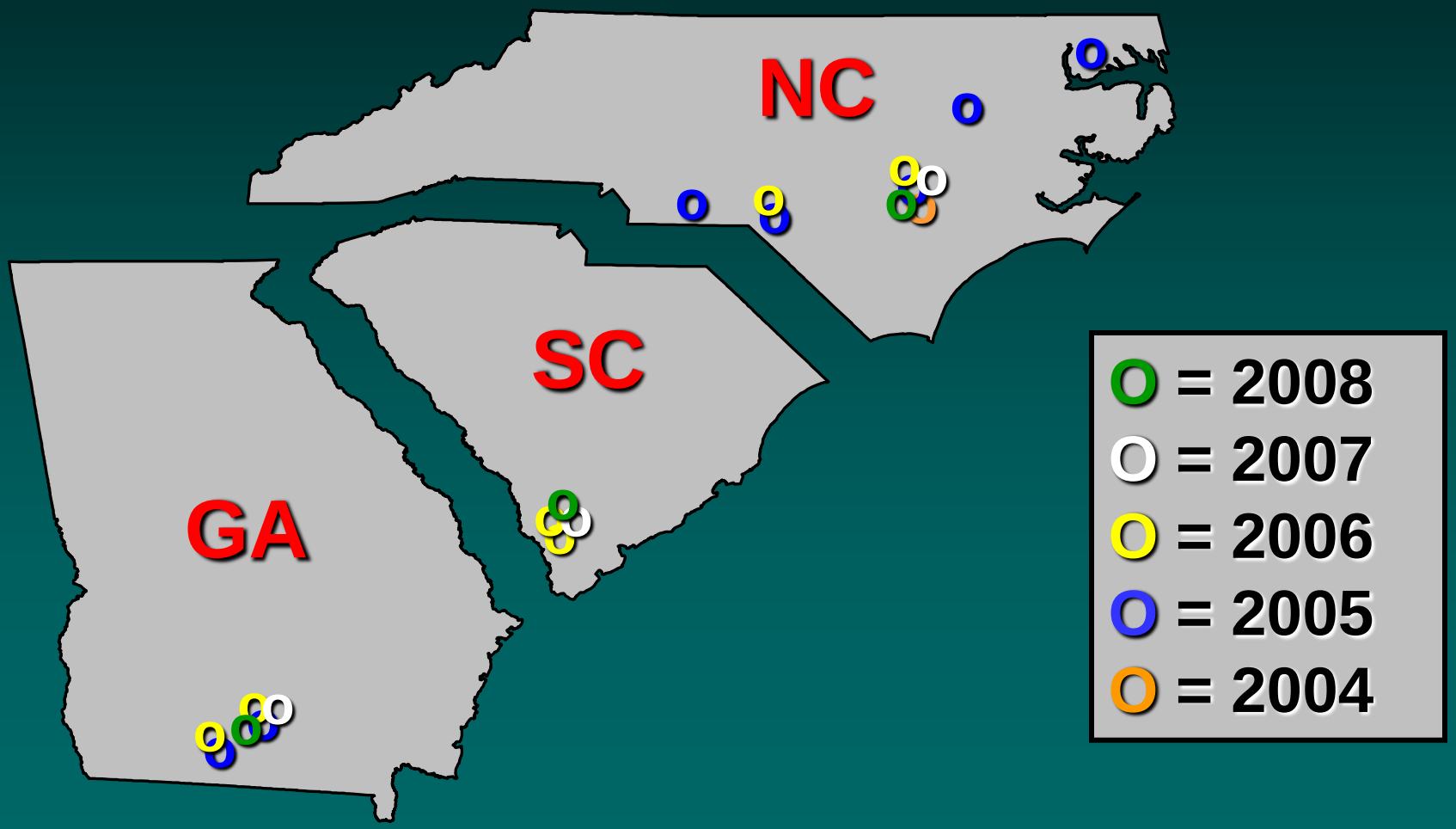


Jack Bacheler
NCSU

Selected tests; 2004-2008:

- ✓ Bug damage: yield penalty influenced by phenology
  19 tests
- ✓ Stink bug thresh. evaluations
  28 tests
- ✓ Stink bug damage vs. quality:
  43 tests
- ✓ External boll damage vs. internal damage & yield *40 tests*

Progressive protection tests: 20



Progressive bug protection tests: diagram

- 6 to 8 rows / plot
- 50 -100 ft. / plot
- Pyrethroid + Bidrin

0	**7**	3	6	1	2	4	5
2	4	6	5	**7**	3	0	1
0	2	1	3	6	4	5	**7**
7	6	5	4	3	2	1	0

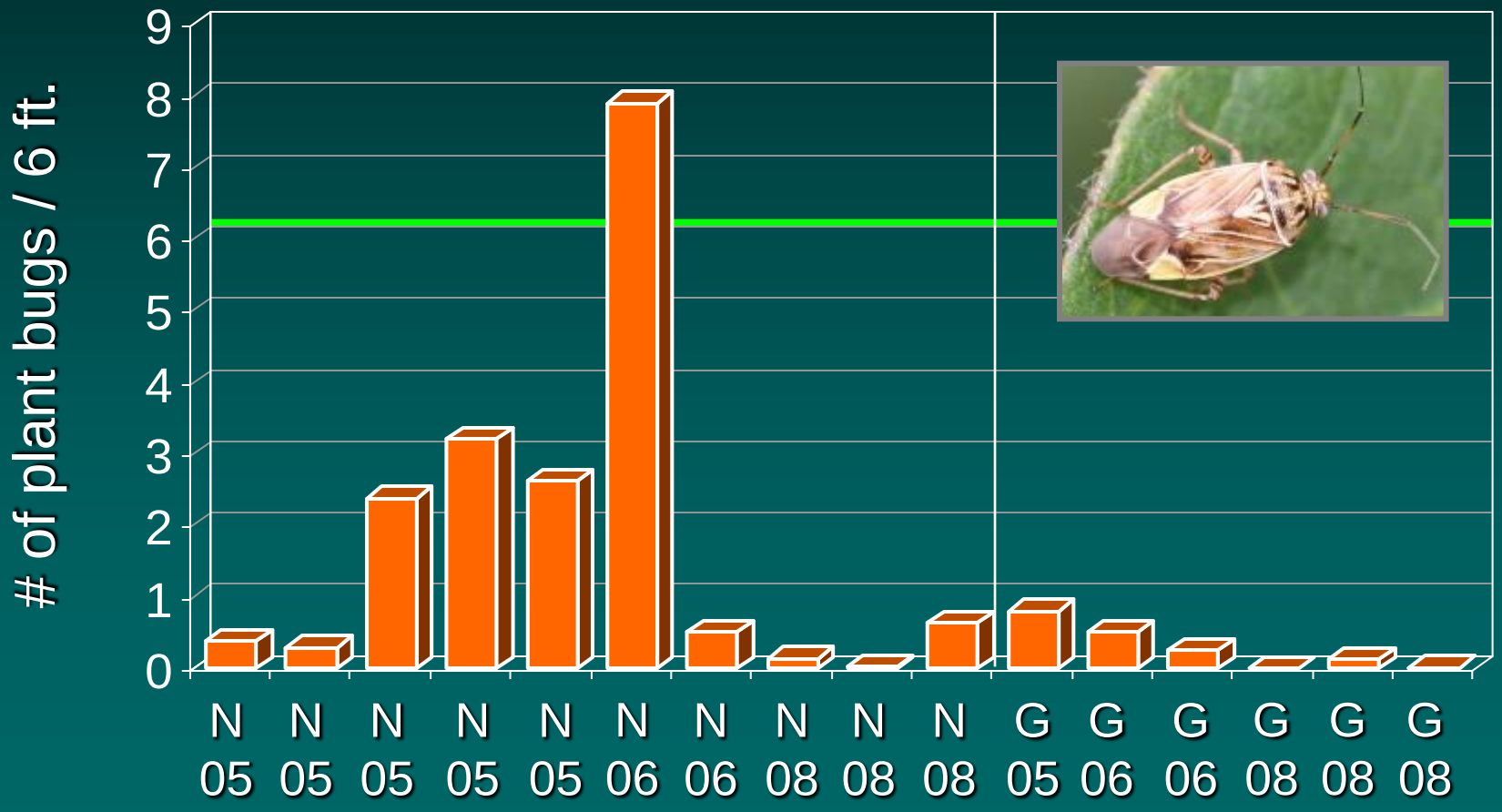
Number of applications / plot

Examples of data taken:

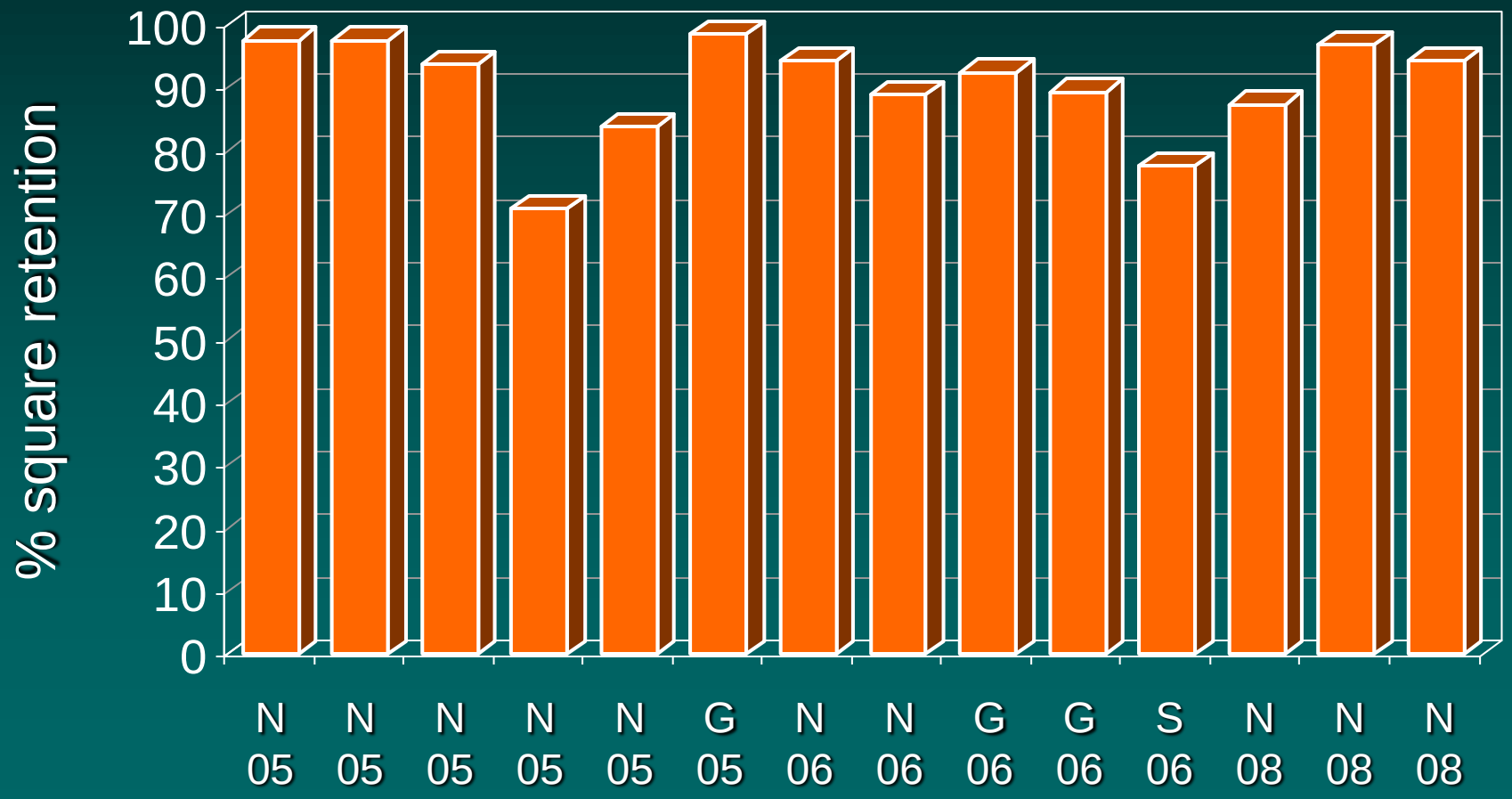
- Square retention
- Dirty blooms
- Beat cloth samples
- Sweep net counts
- Cadaver counts
- Quarter sized boll damage
- Boll diameters weekly
- Year end boll damage (w, s, w + s)
- Final adjusted yields (Microgin)

Selected Observations

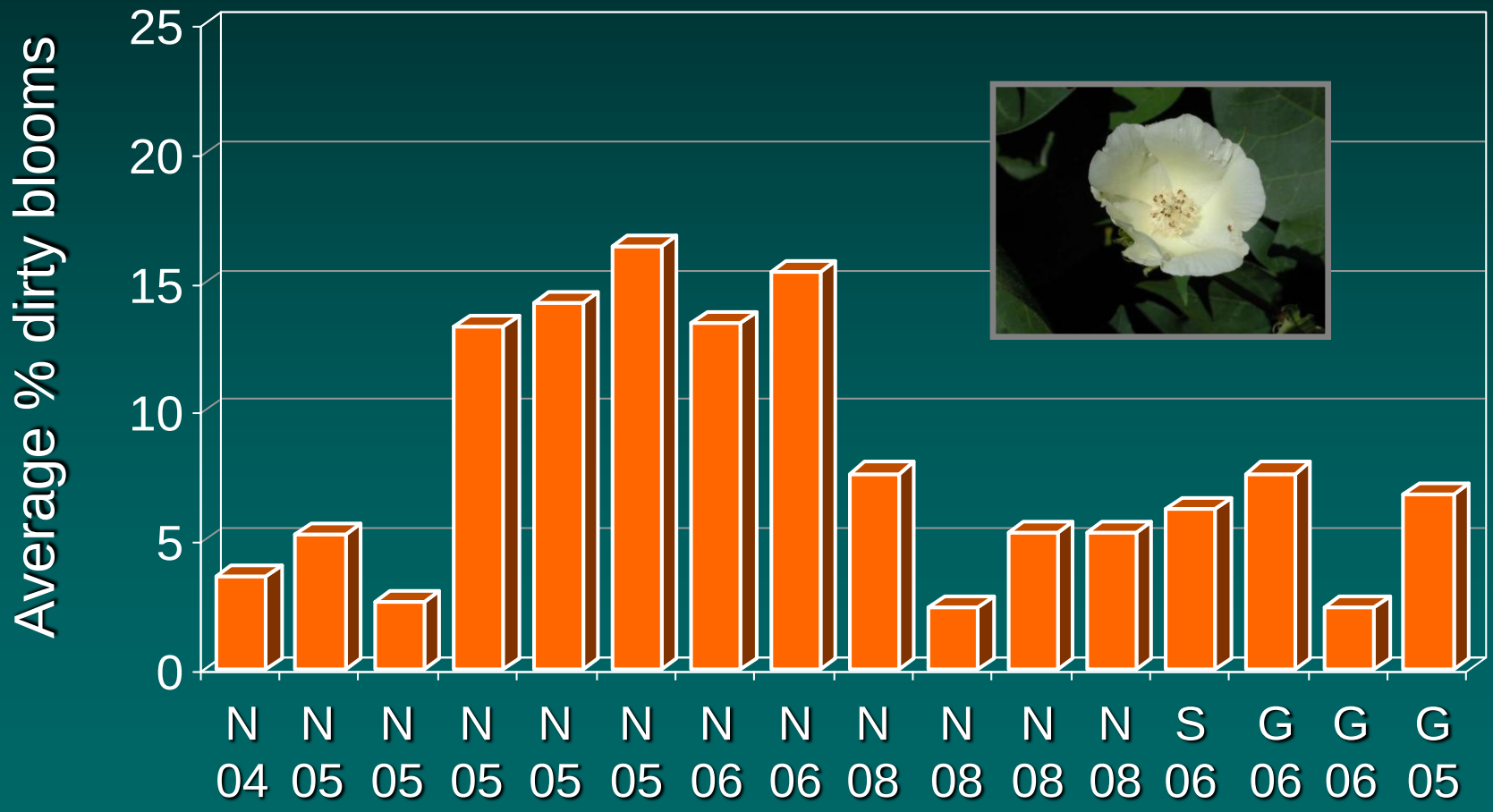
Mean number plant bugs/6 row ft. in check, 1st 5 wks. of bloom 2005-2008 (adults + nymphs)



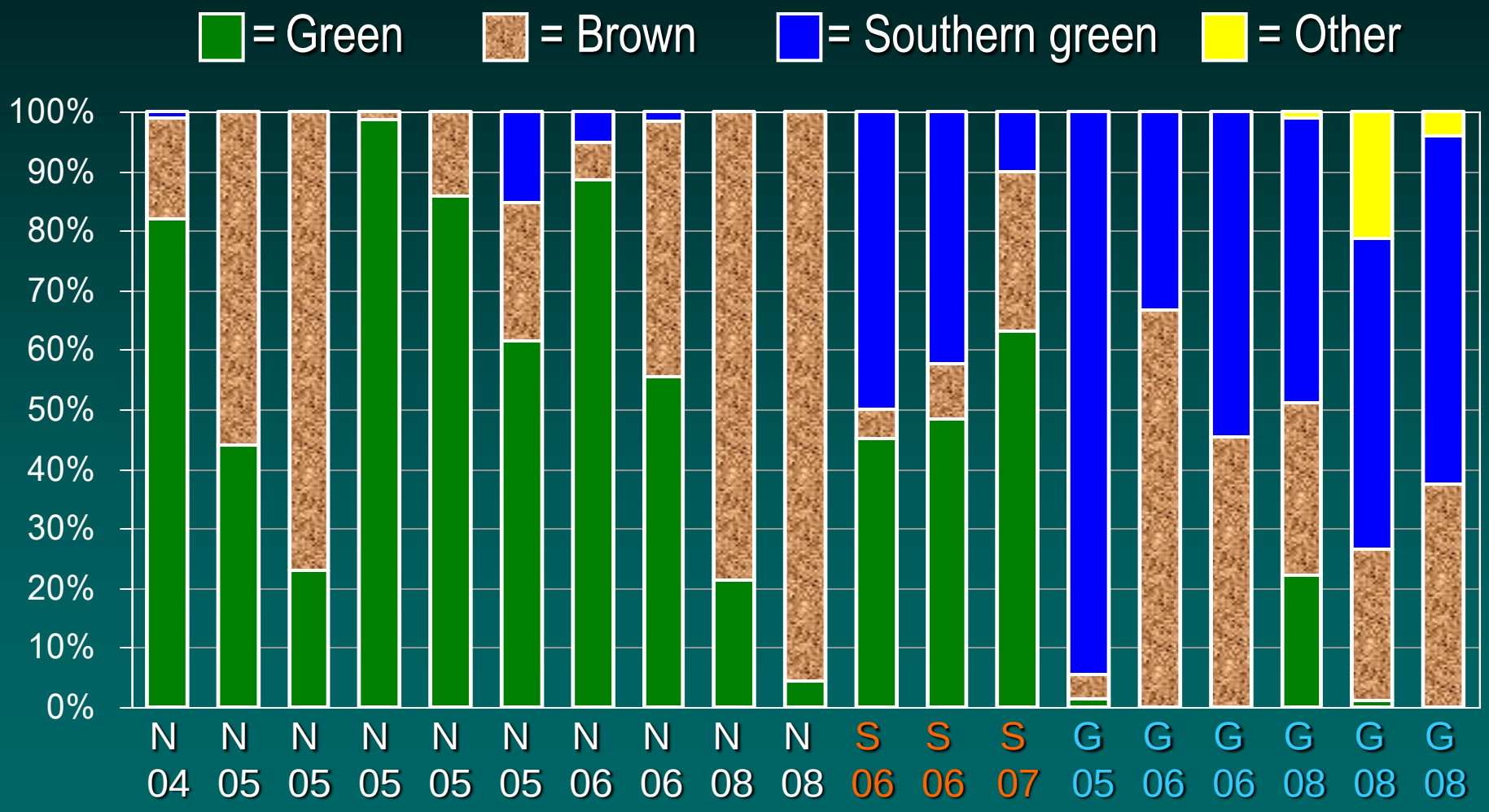
Retention of upper squares: means for 1st five wks of blooming in check, 2005-2008



Percent dirty blooms: means for 1st five wks of blooming in check, 2004-2008



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



Bug damage to bolls: extreme variability

Good news #1:

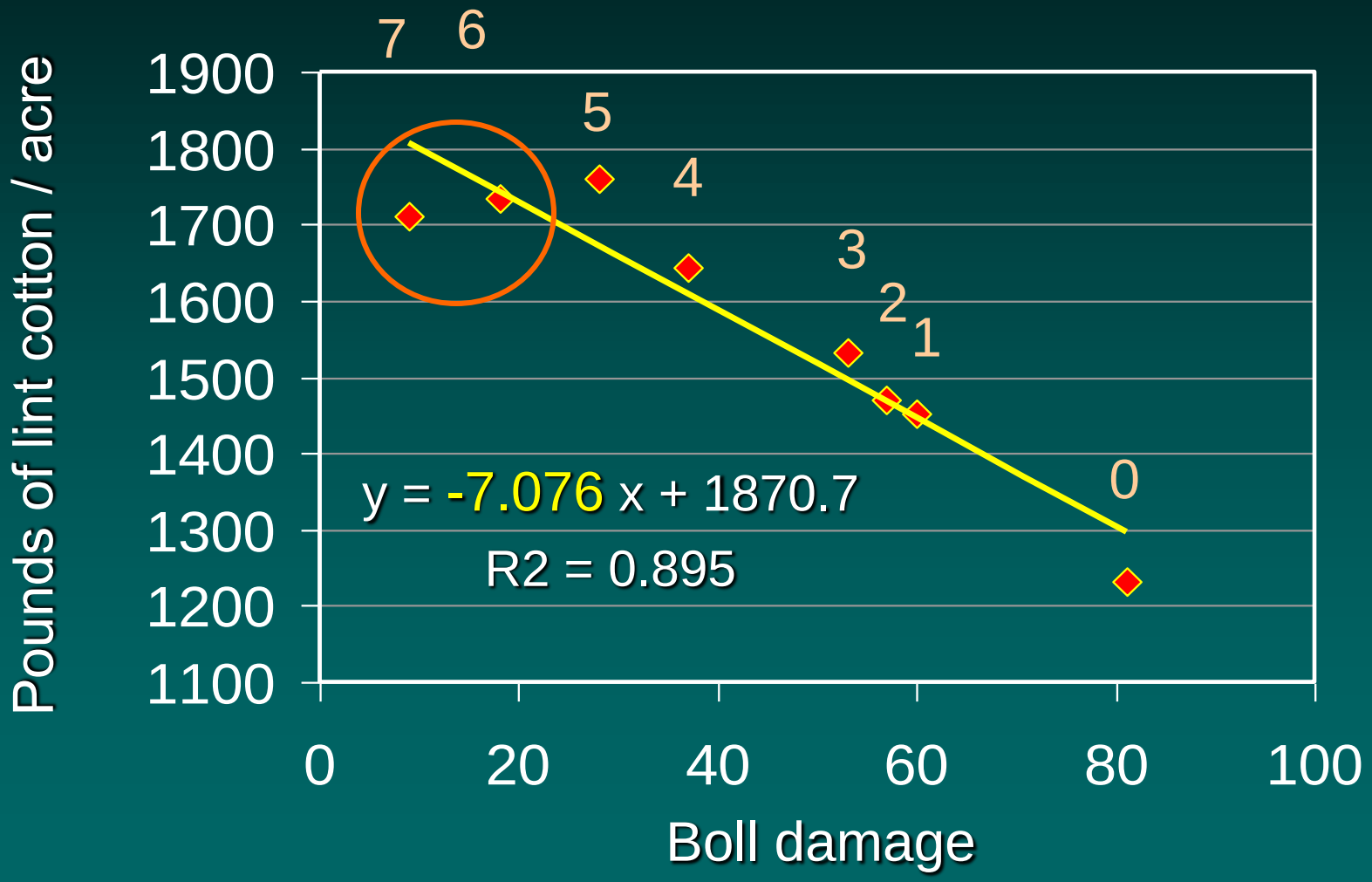
Bollworm vs. stink bug damage to bolls and yield loss in NC

(n = 10 & 13 tests)

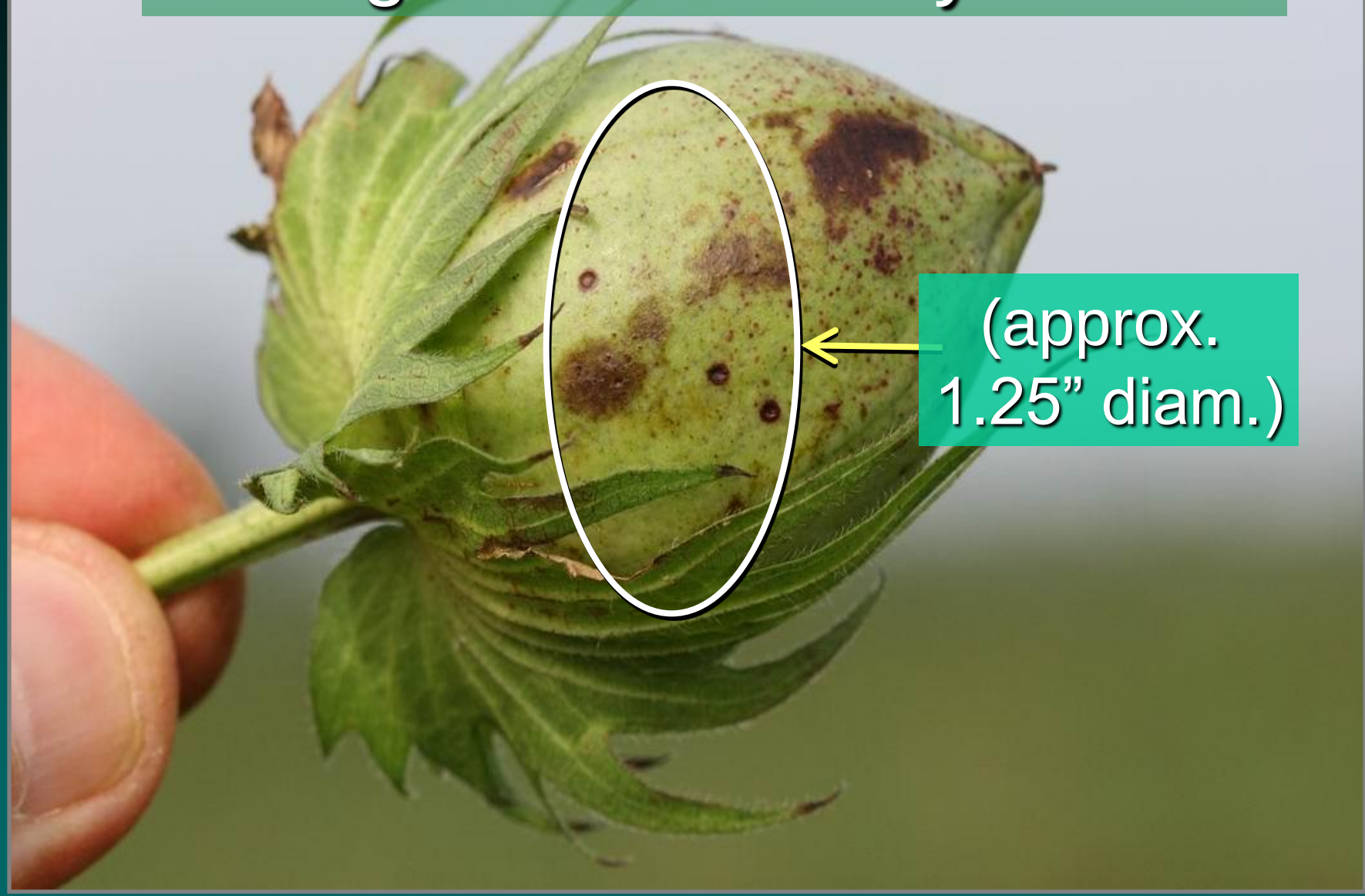
Lb. lint lost / 1% boll damage	Average
Bollworm	12.4
Stink bug	4.2

Good news #2:

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



Boll age and size vs. yield loss



NCSU *BollSizer*

Safe boll

1¼ ”

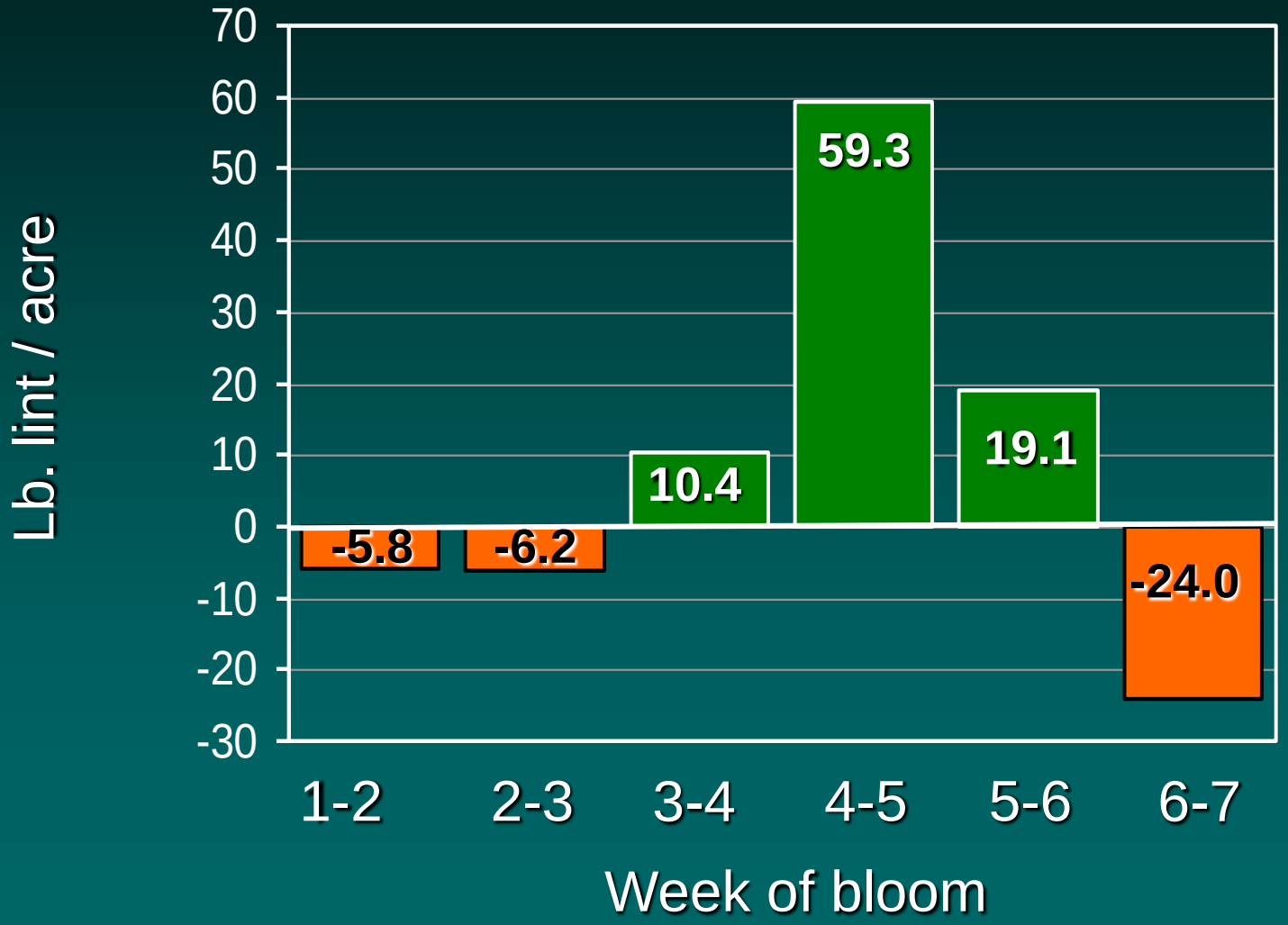
Quarter size

15/16 ”

College of Agr. & Life Sciences

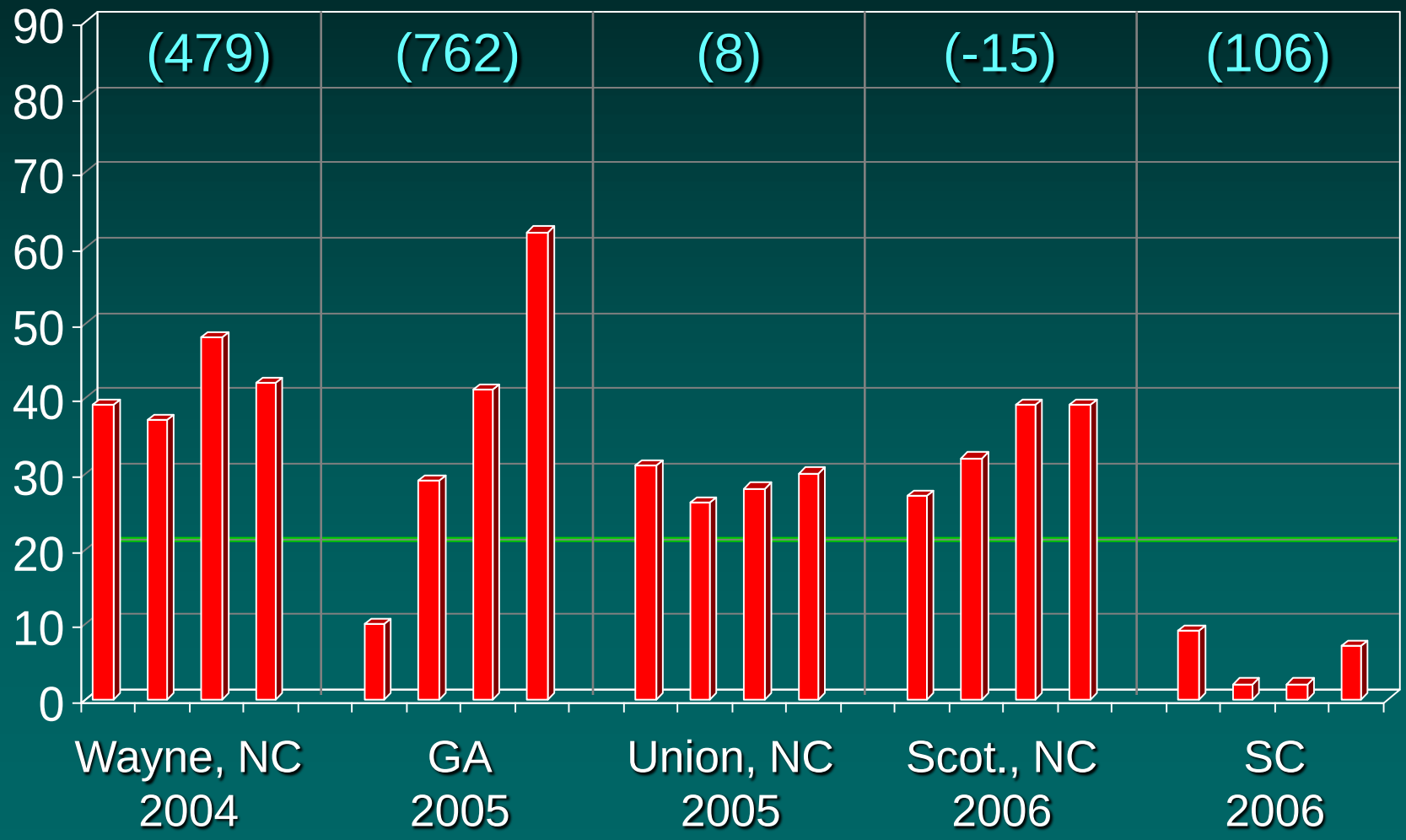

SAFE BOLL
QUARTER SIZE
NC
STATE UNIVERSITY
A&T STATE UNIVERSITY
COOPERATIVE
EXTENSION
Helping People Put Knowledge to Work

Yield change from spray at designated weeks of bloom, NC & GA, 2004 - 2007 (n = 16 tests)

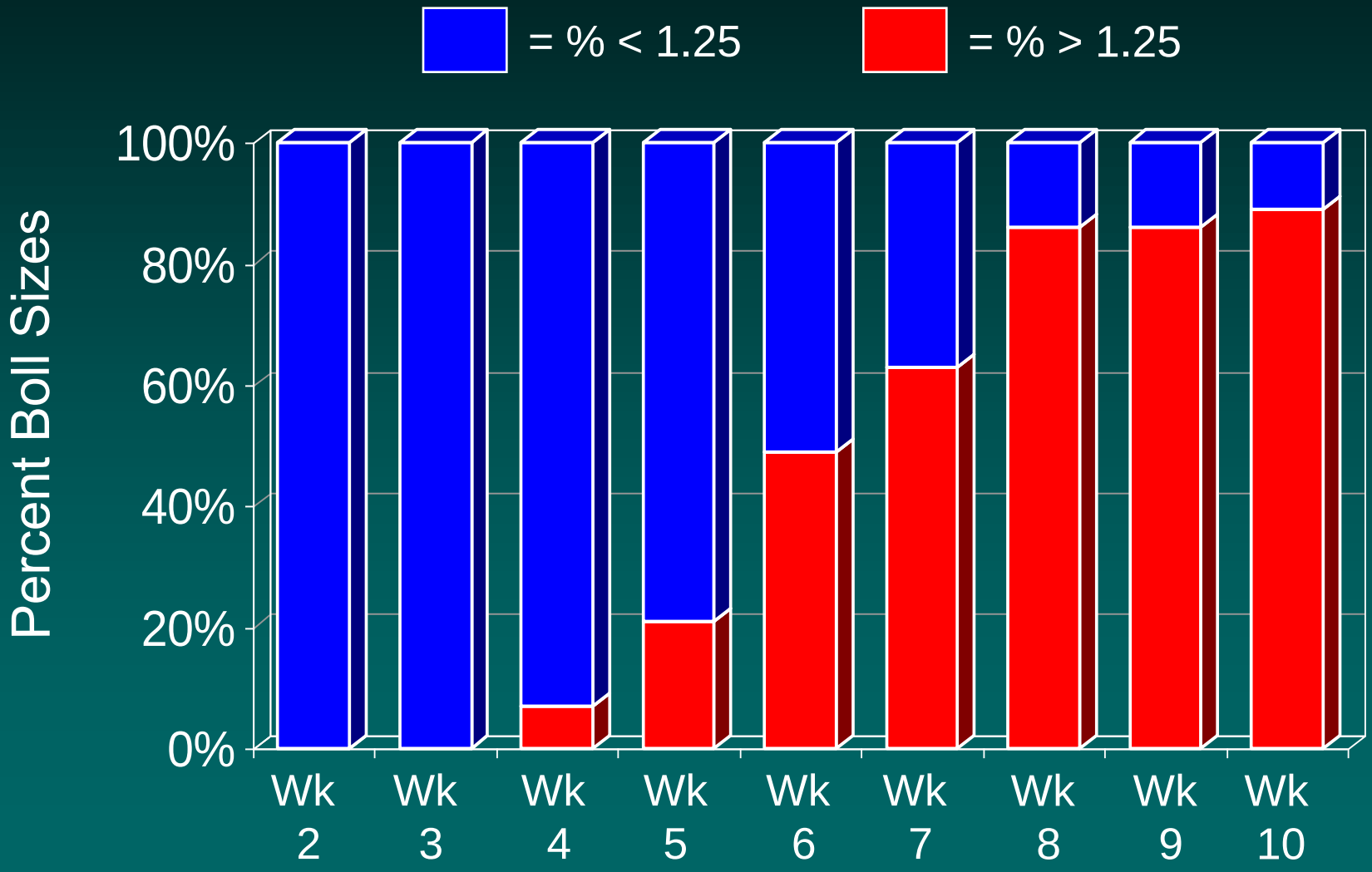


Relationship between stink bug damage to quarter-sized bolls and yield loss, 2005 - 2006

(Yield difference: treated vs. UT)



Bolls size per week in Wayne Co., NC: 2004



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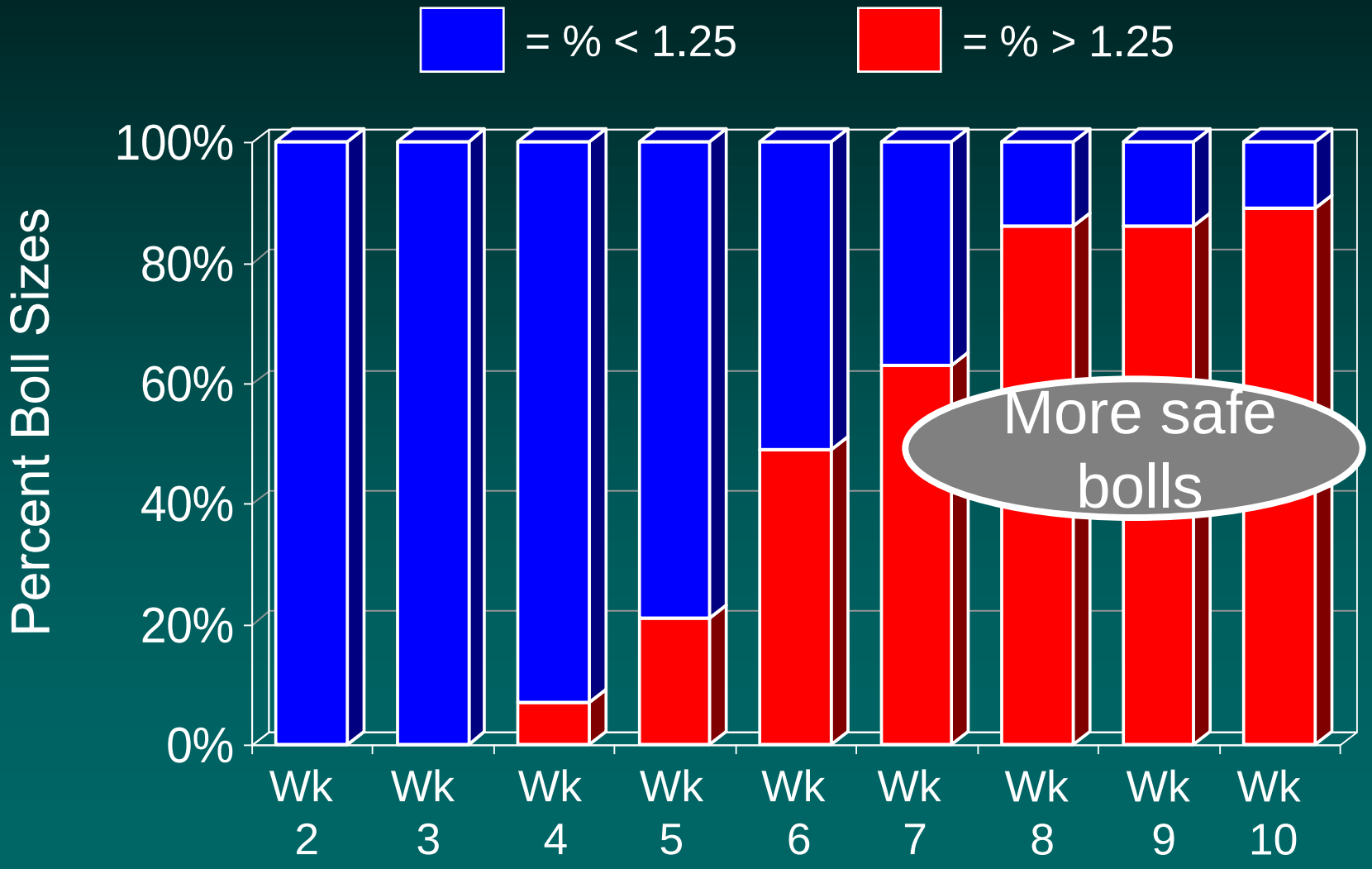

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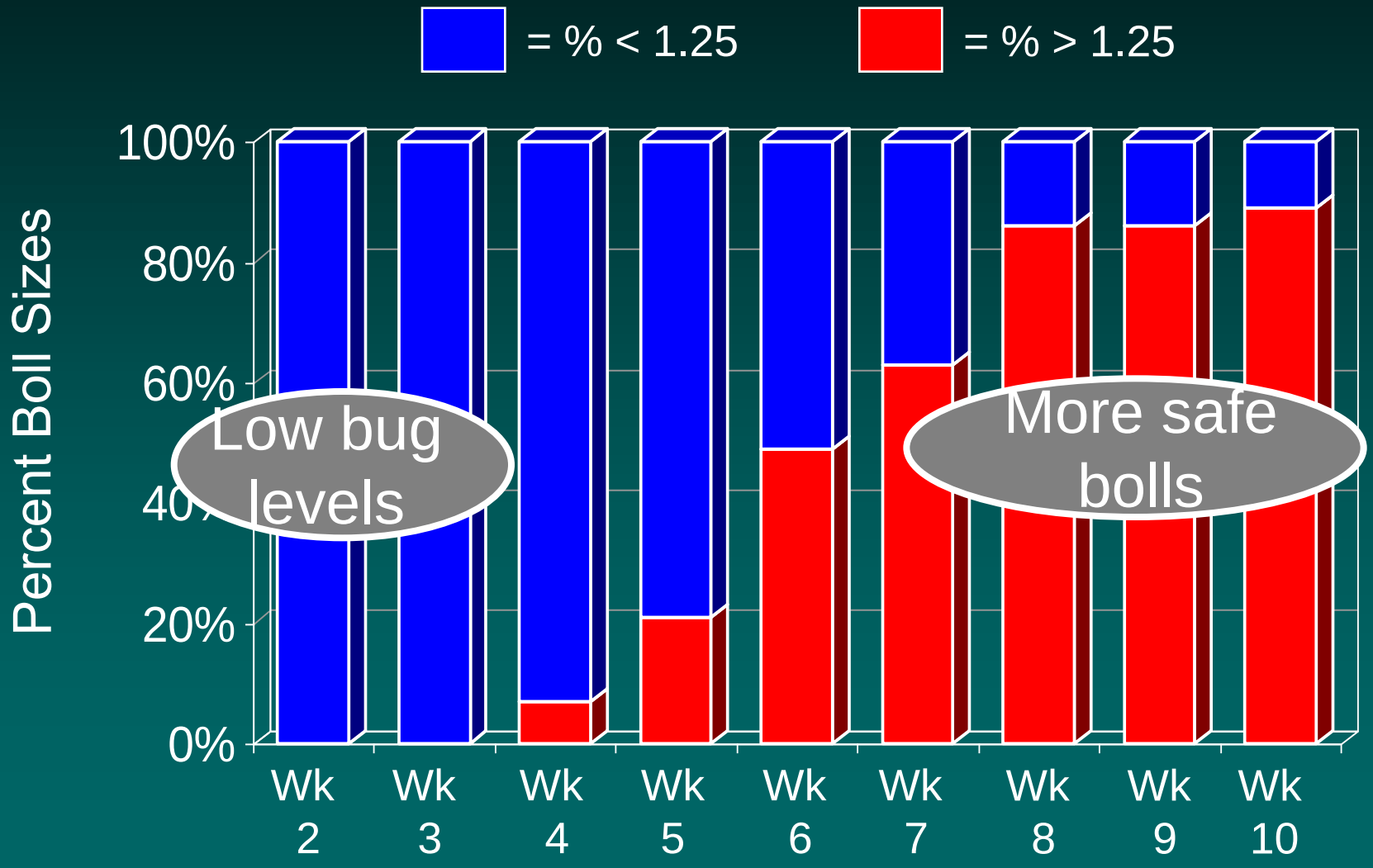

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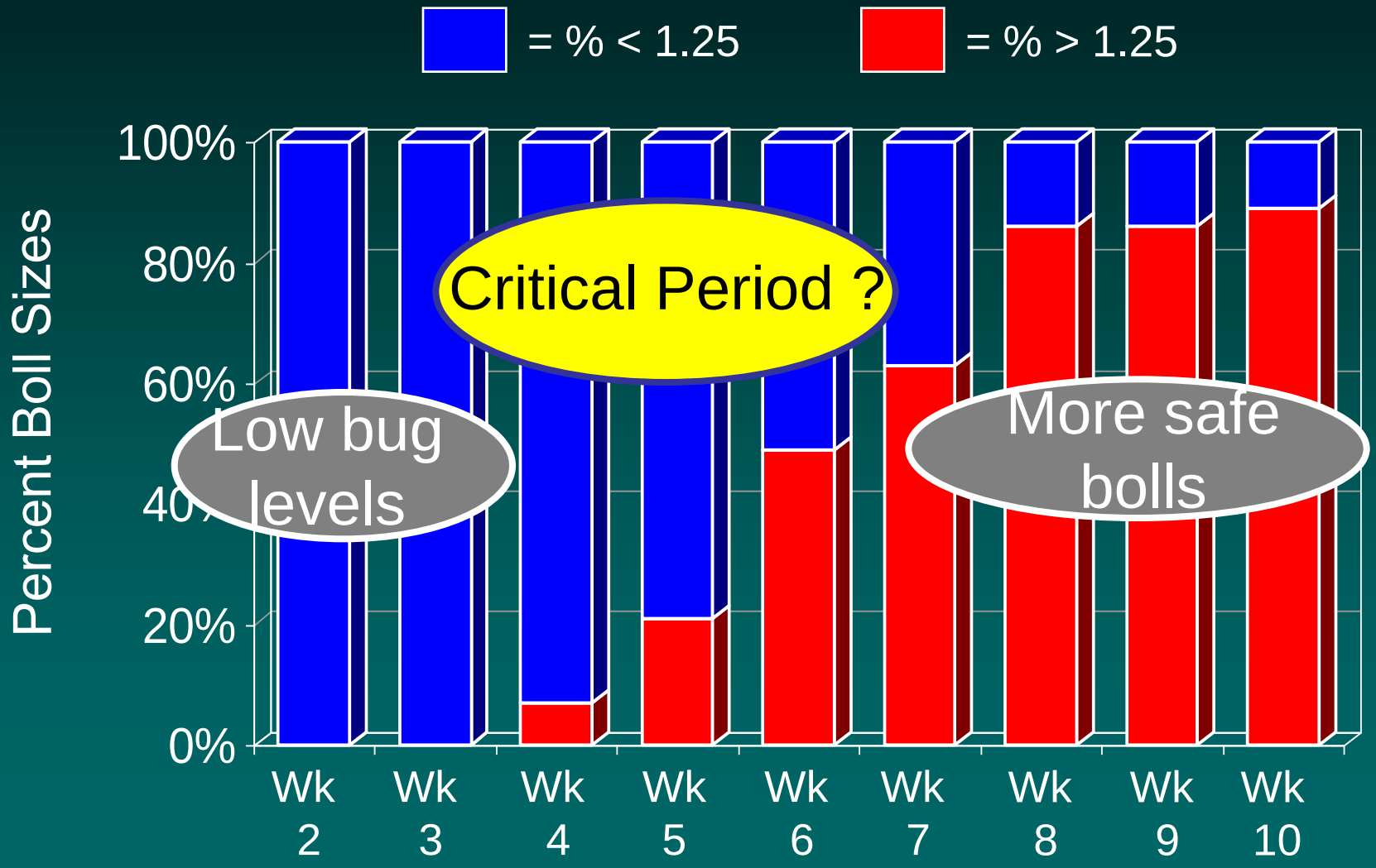

Dynamic stink bug threshold:

Week of bloom	Threshold
1	50
2	30
3	10
4	10
5	10
6	30
7	50
8	50

Selected tests; 2006-2007:

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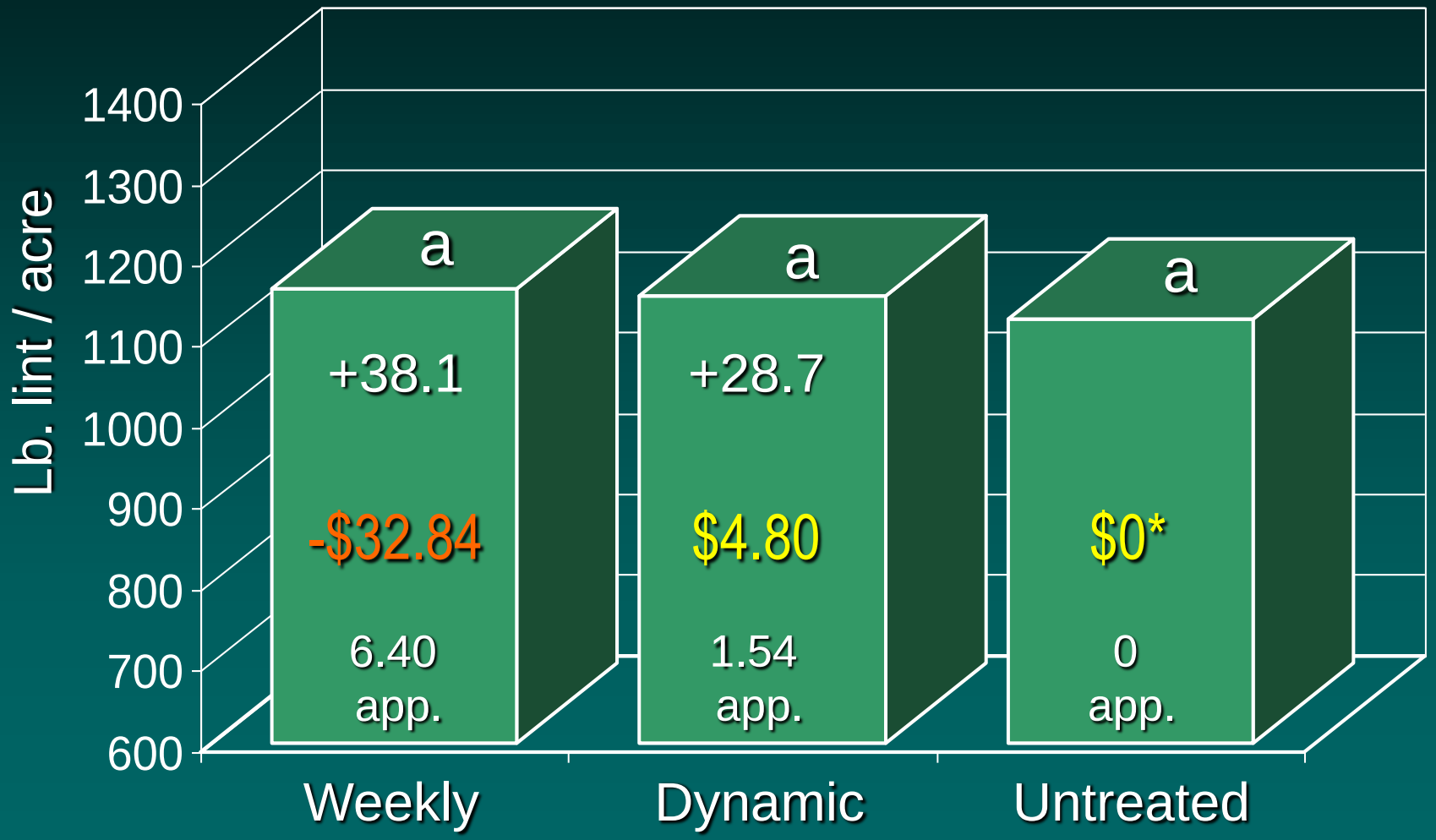
Thresholds evaluated in 2006-2007: 28 tests:

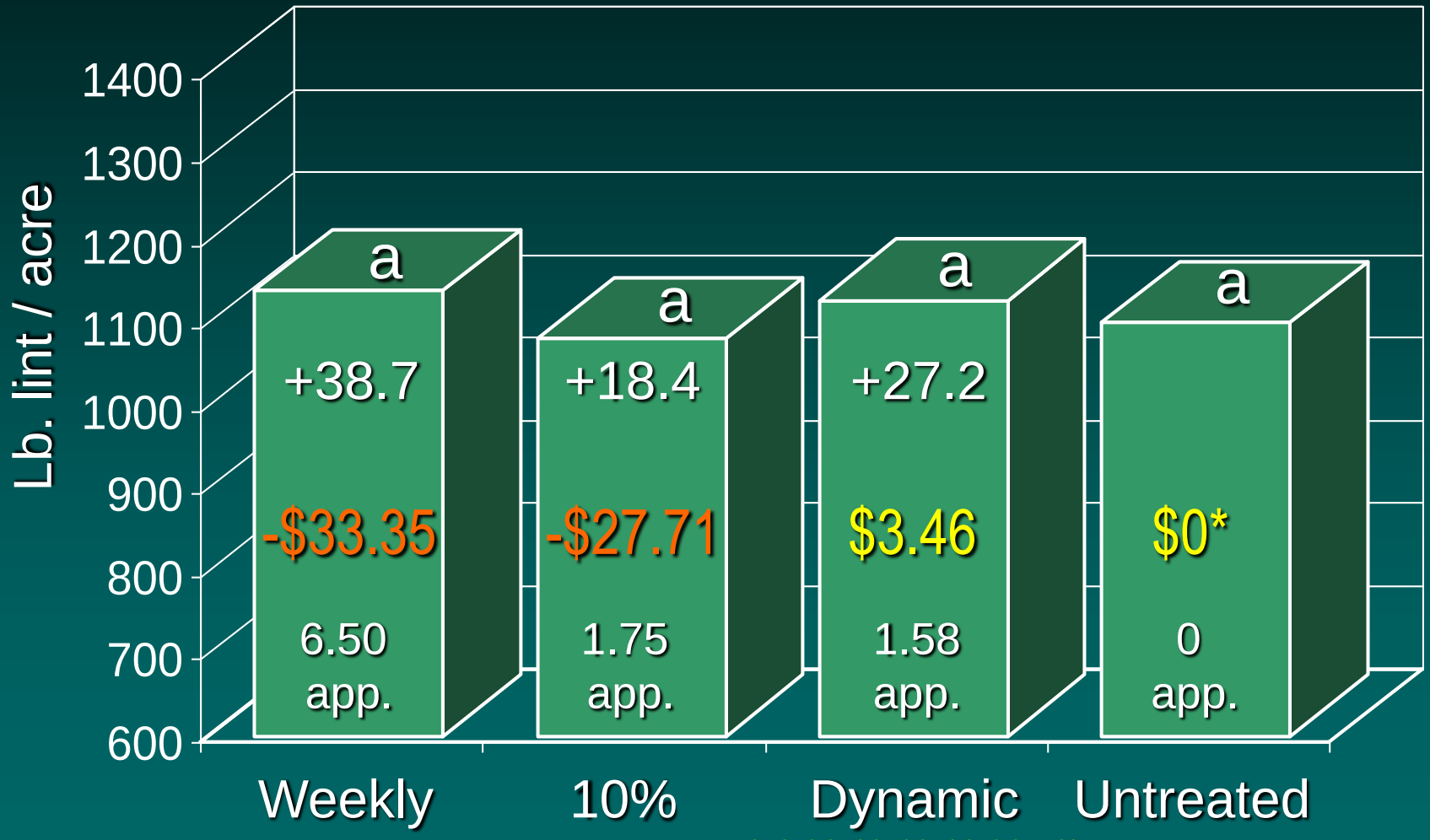
- ✓ Weekly spray
- ✓ 10%
- ✓ 20%
- ✓ 30%
- ✓ Dynamic
- ✓ Untreated

Stink bug threshold evaluation study; NC, GA and SC (13 sites, 2007)



*Net: $0.65/lb. & $9.00/appl.

Stink bug threshold evaluation study; NC, GA and SC (12 sites, 2007)



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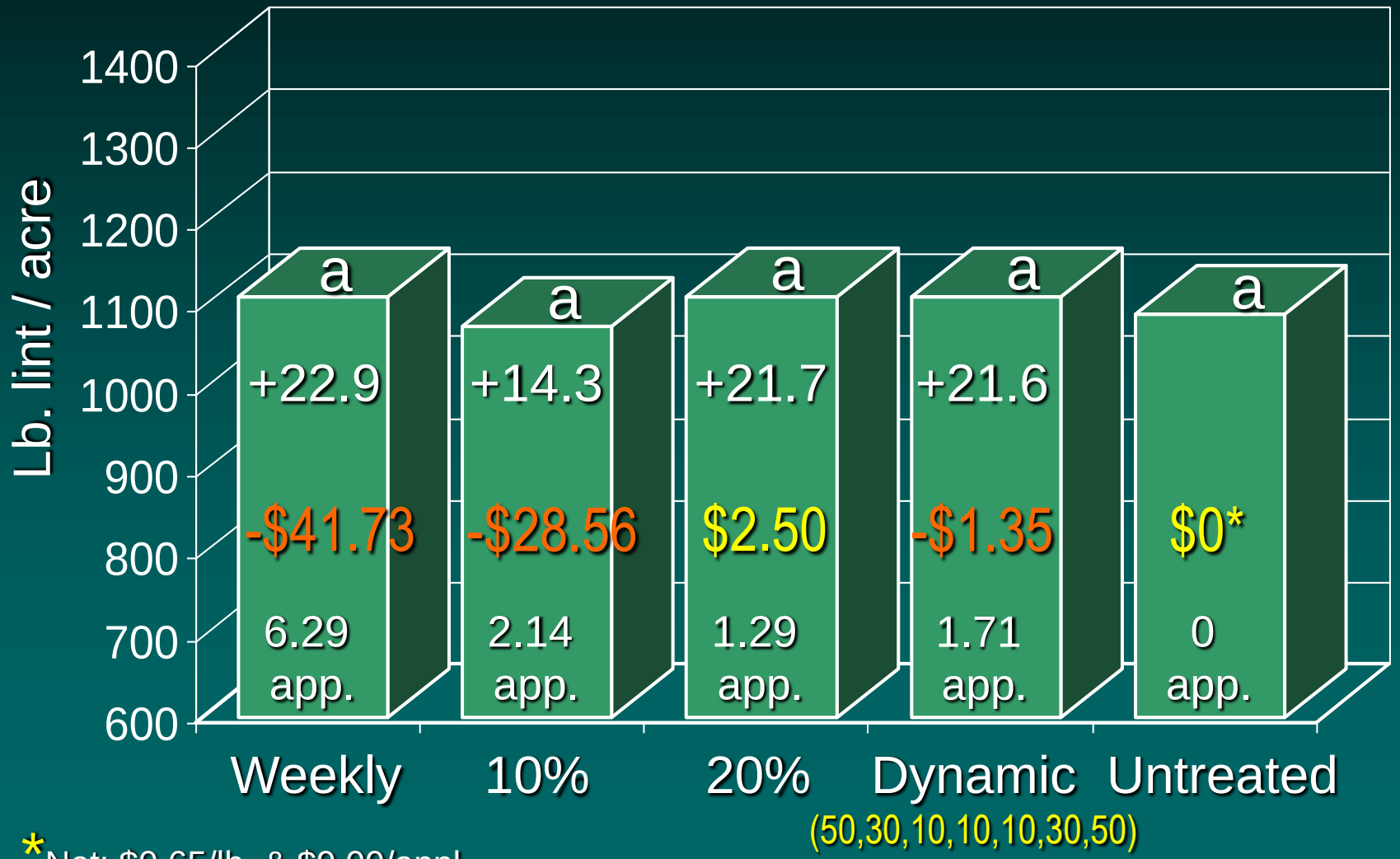

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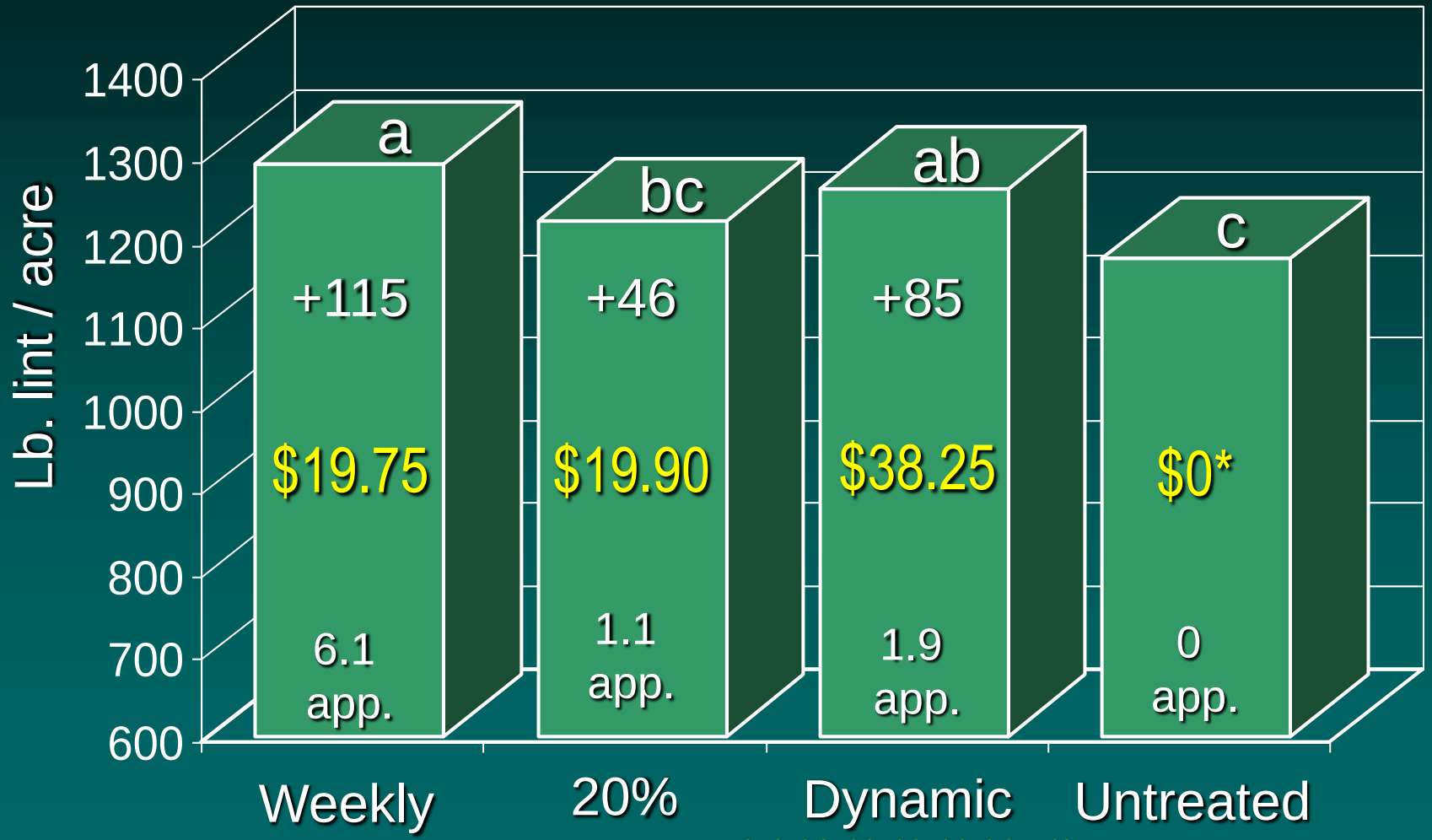
Stink bug threshold evaluation study; NC, GA and SC (9 sites, 2006)



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Selected fiber qualities for three stink bug "management" approaches, 2005

Stink bug trials in GA, NC, SC, & AL (n = 11 locations)

2005	Untreated	20 % threshold	Aggressively sprayed
Lint/acre	760 a	1125 b	1232 b
Lint %	34.93 a	36.21 b	36.25 b
MIC	4.27 a	4.37 b	4.43 b
UHM (32nds)	35.62 a	36.01 b	36.03 b
UI	81.18 a	81.63 b	81.60 b
STR	30.08 a	29.97 a	30.06 a
Rd	75.37 a	76.81 b	77.23 b
+b	9.04 a	8.46 b	8.25 b

HVI – Cotton Incorporated
(trial means analyzed as reps)

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New possible lead:

Relationship between external and internal boll damage and yield

Eric Blinka, Ames Herbert, and John Van Duyn