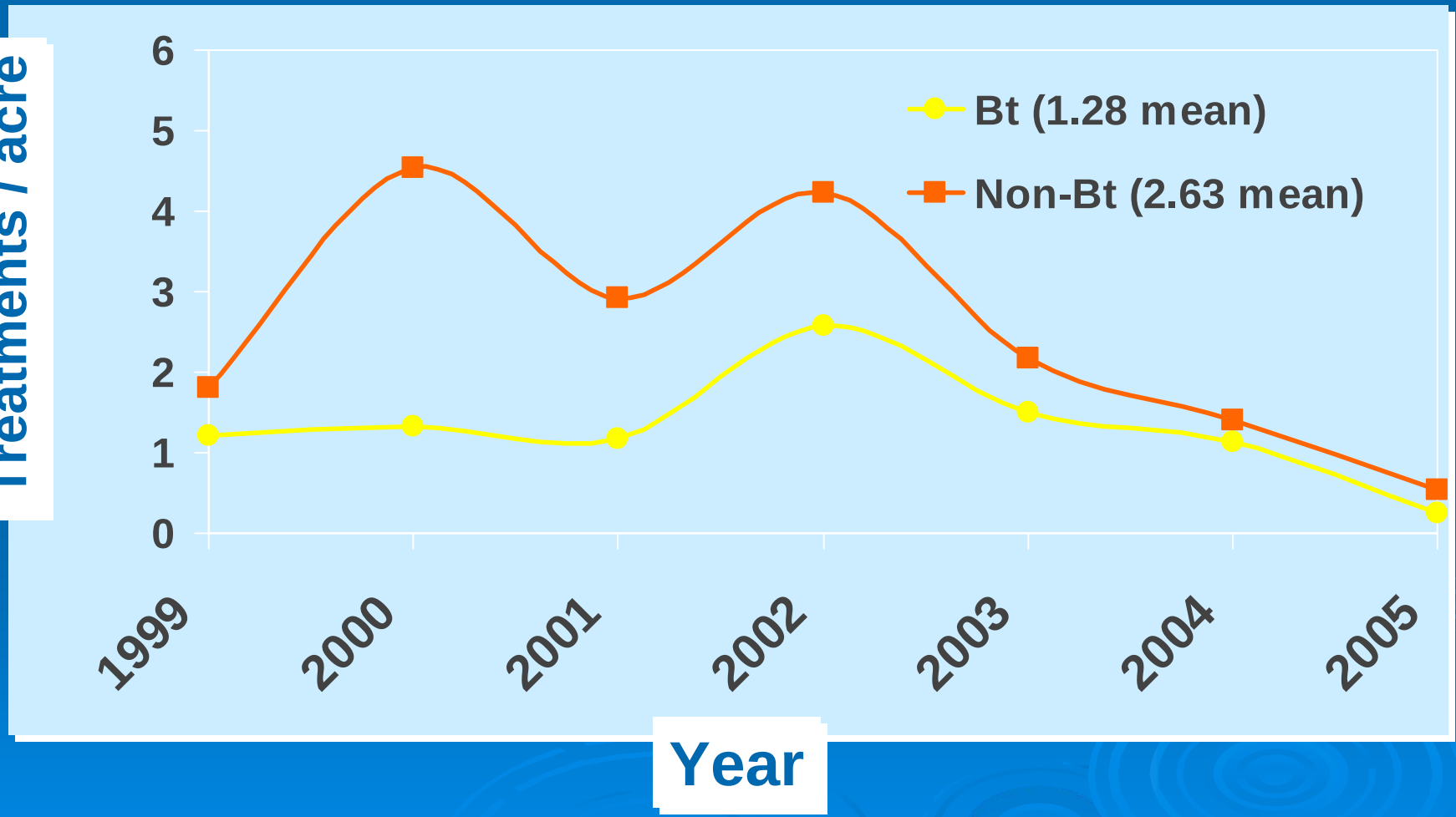
Management Considerations: Squaring to First Flower

Gus Lorenz and Glenn Studebaker, U of A Div. of Ag.
Scott Stewart, UT
Roger Leonard, LSU
Angus Catchot, MSU
Jeff Gore, USDA- ARS
Chuck Farr and Bobby Griffin

Heliothine Sprays
(Insecticide Appl. Frequency)



Total Pest Sprays
(Insecticide Appl. Frequency)

The Big 3 From Squaring to Bloom

- Aphids
- Spider Mites
- Plant Bugs

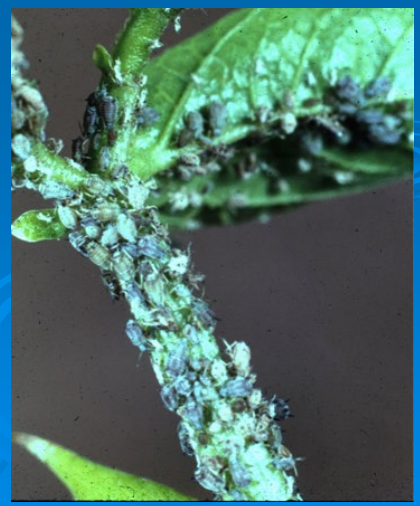
Pest Status of Tarnished Plant Bug Cotton Aphid and Spider Mites

- Altern. Hosts as Refuges (C-Till, WRP, CRP)
- Bt Cotton
- Boll Weevil Eradication
- Selective Insecticides
- Application Efficiency
- Insecticide Resistance

Cotton's Primary Pest

Aphids

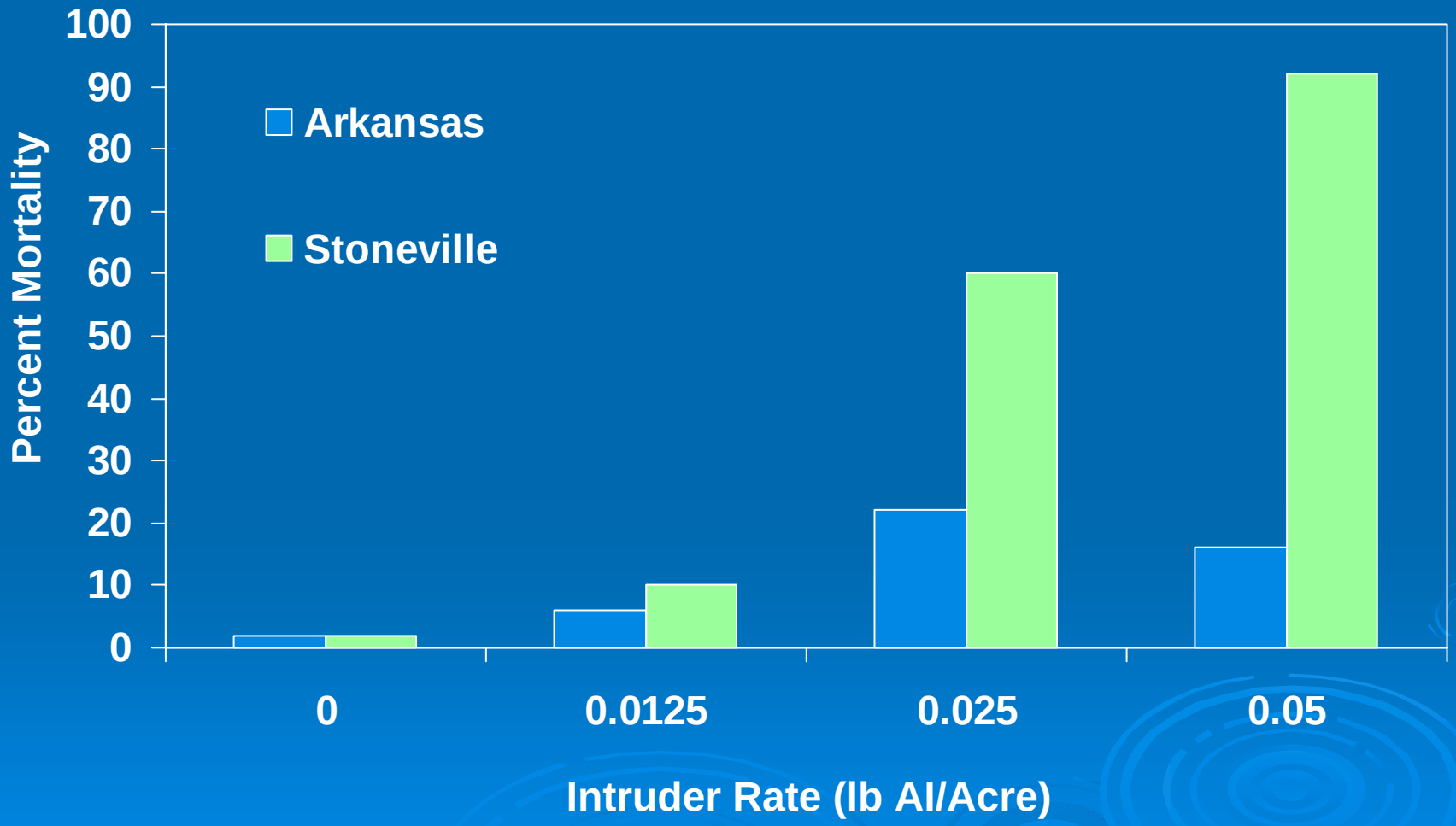
- More of a problem in ’06
- Resistance developing??



Aphid Trial- Ashley Co., Arkansas 2006

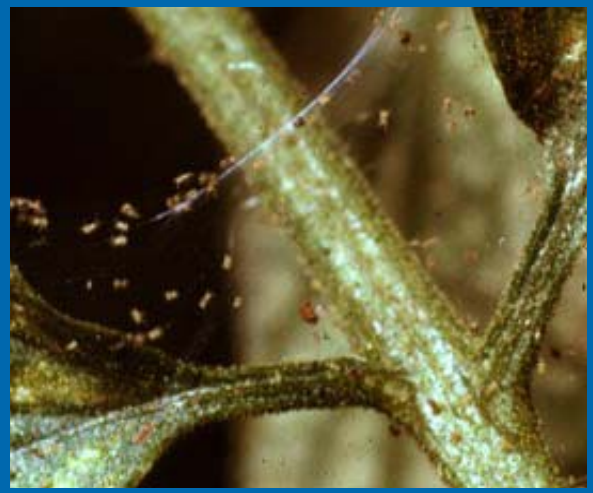
Trt No.	Treatment Type	Treatment Name	Rate	Rate Unit	No. Aphids/ 5 leaves
1	CHK				215 a
2	INSE	Carbine	2	OZ/A	50 c
3	INSE	INTRUDER	0.8	OZ/A	16 c
4	INSE	INTRUDER	0.6	OZ/A	20 c
5	INSE	INTRUDER	1	OZ/A	15 c
6	INSE	CENTRIC	1.75	OZ/A	84 bc
7	INSE	CENTRIC	2	OZ/A	44 c
8	INSE	BIDRIN	0.5	LB A/A	112 b

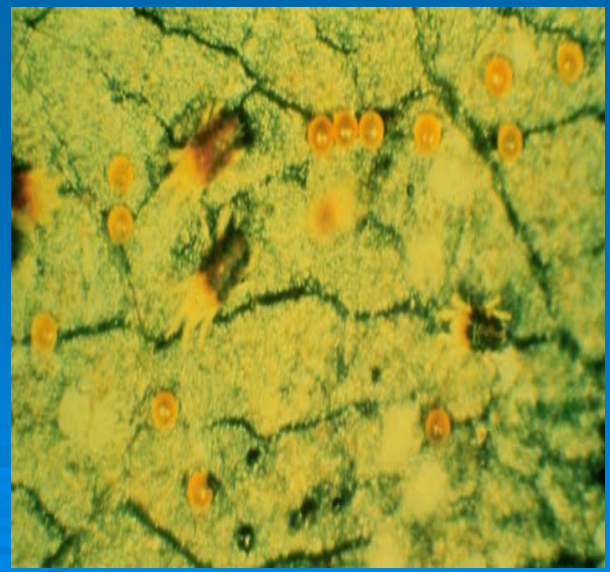
Cotton Aphid Bioassay



Jeff Gore
USDA-ARS, Stoneville, MS

Spider Mites





About Two-Spotted Spider Mites

Spider mites thrive in a hot and dry climate

Spider mites usually feed on the underside of leaves

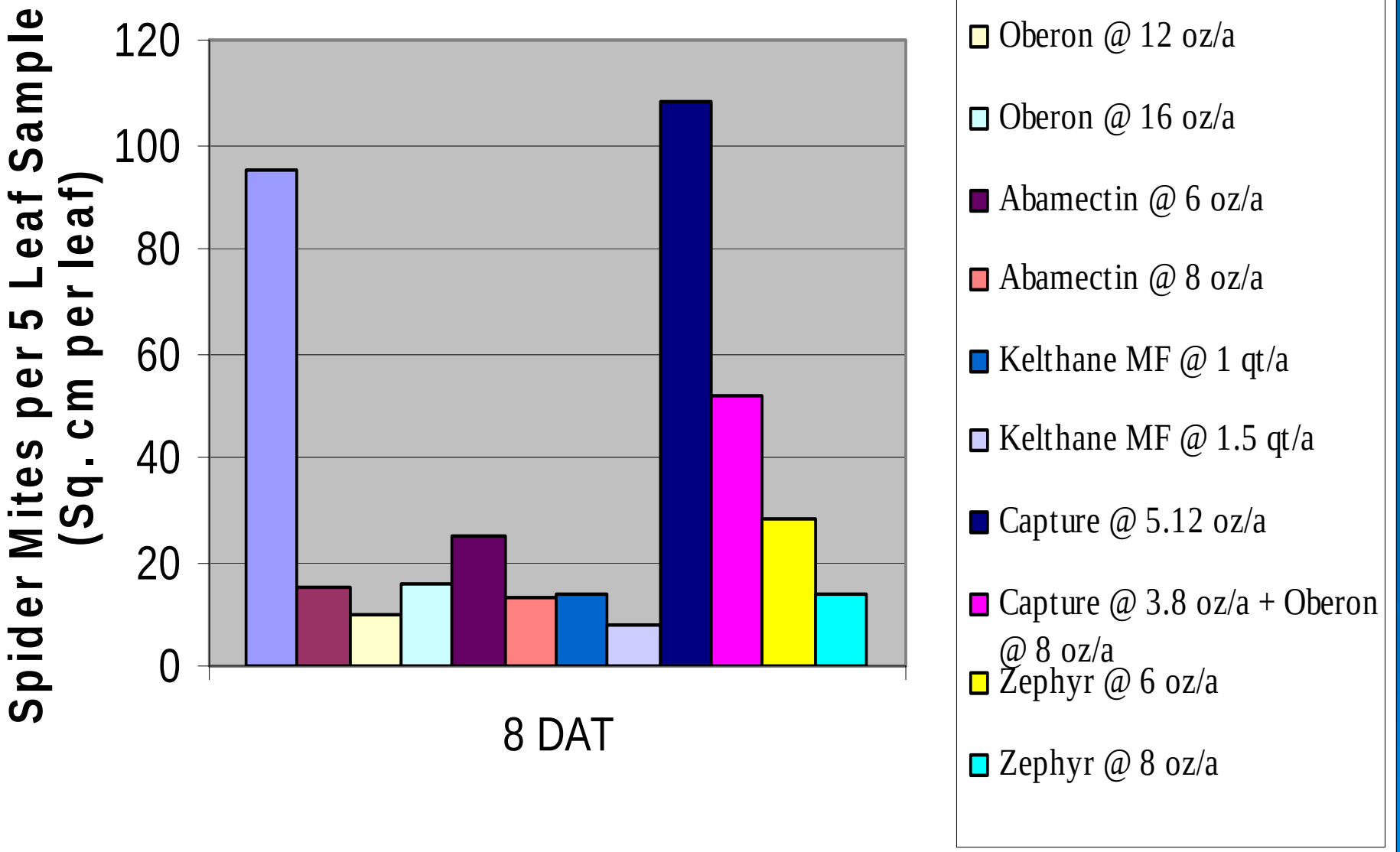
Spider mites can be difficult to control

Proper application with thorough coverage is critical

Spider mite control *appears to* vary with product and time of season

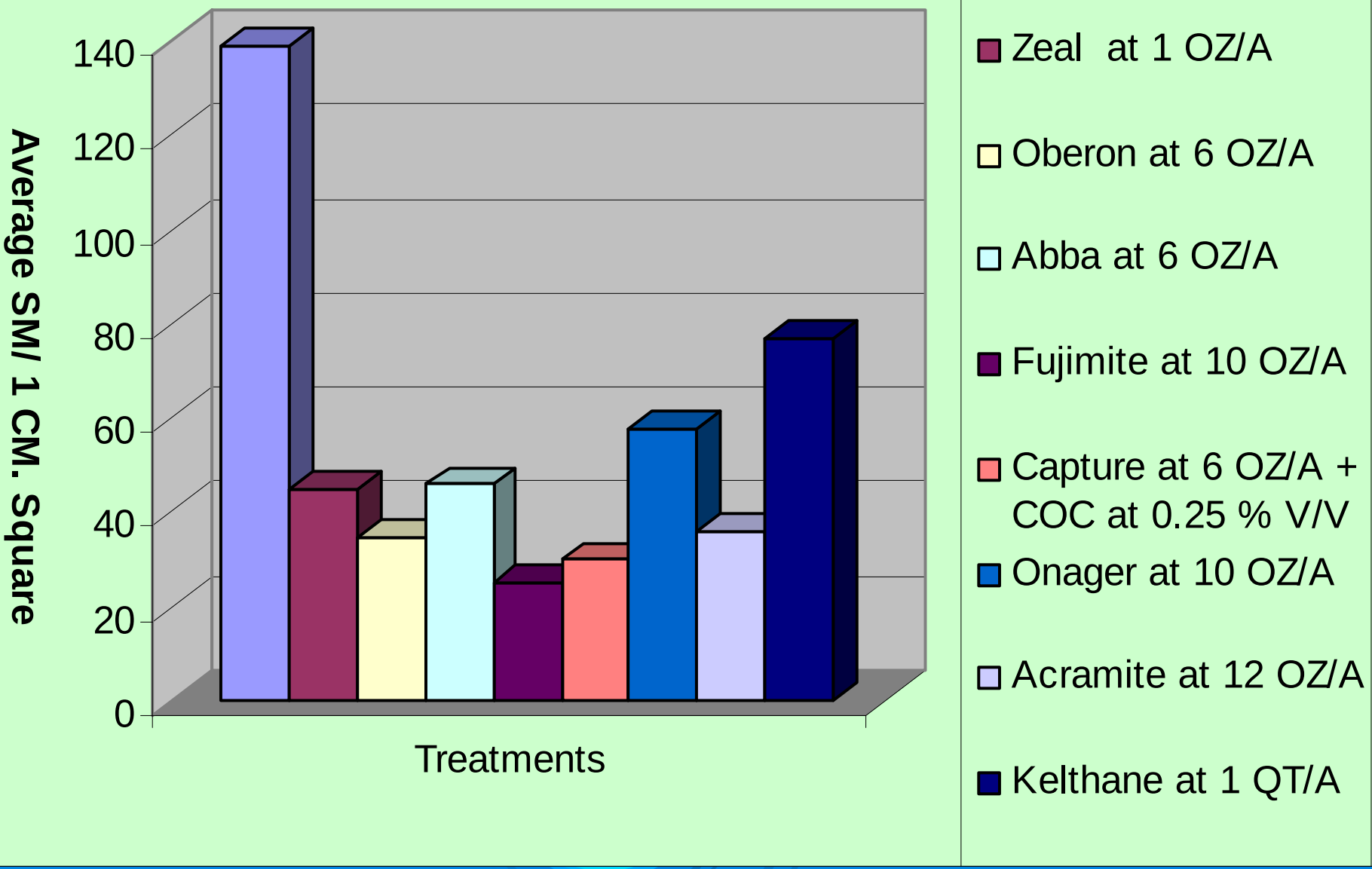
Spider Mite Trial at Lepanto - 8 DAT

June 8, 2004



Spider Mite All @ Barton 5 DAT

Phillips County, July 25, 2006



Spider Mite Summary

- Good application critical
- Spend $$ wisely
- Multiple applications may be necessary

Miticide	Cost/ Amt	Cost/ A*
Capture	$375/ Gallon	1 gal/ 25 A = $15
		1 gal/ 30 A = $12.50
Zephyr	$625/ Gallon	4 oz/ A= $19.53
	Or $4.88/ oz	6 oz/ A = $29.28
Zeal	$22/ oz	1 oz/A=$22.00
Kelthane	$36/ Gallon	1 Qt/ A= $9

NC acreage treated for spider mites
(2004-2005 Consultants' Survey)

Usage pattern	% acres treated	Odds of treatment
Temik (100%)	0.58	1/170
Seed Trt. (74.5%)	5.3	1/19

Difference: 9.1-fold

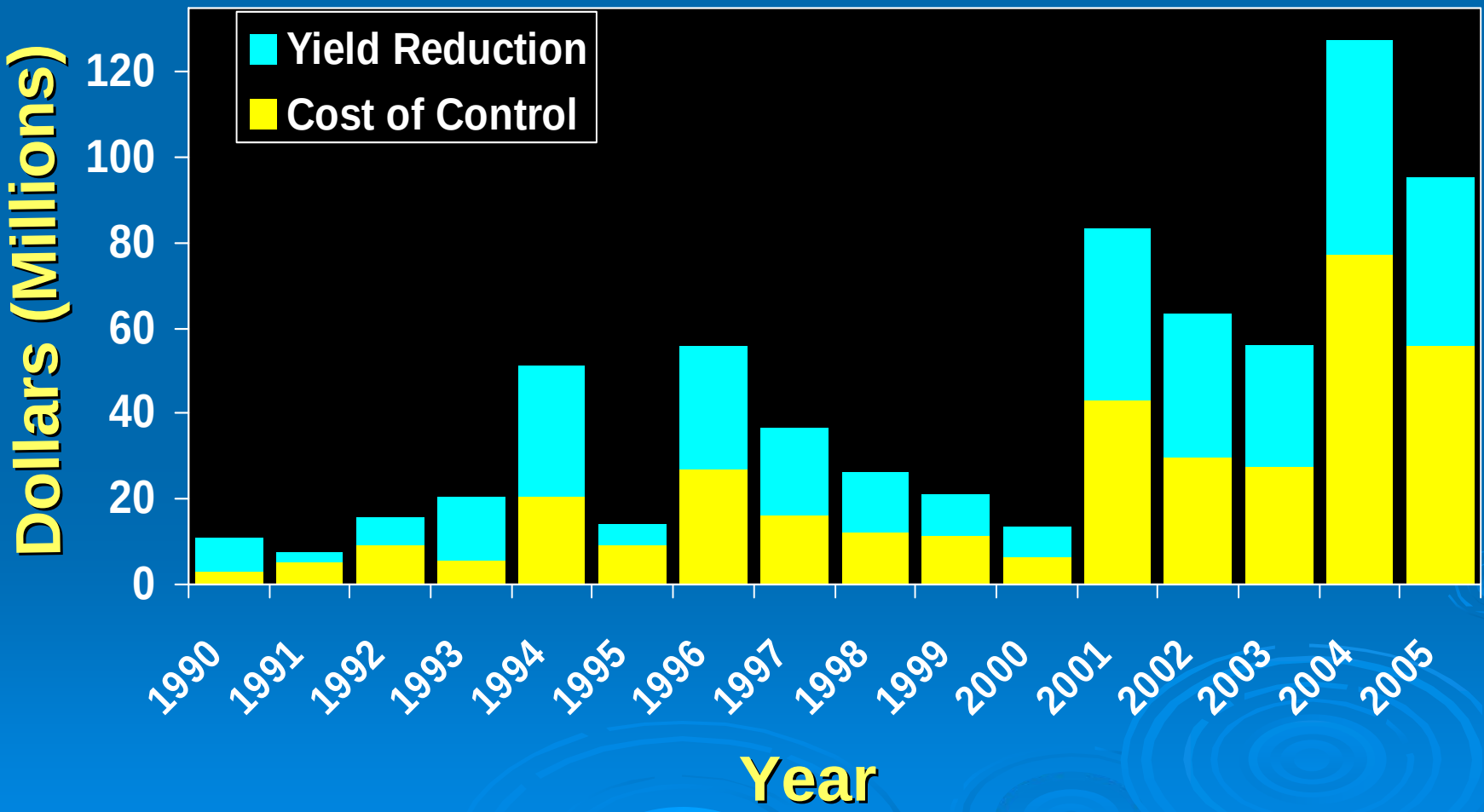
Jack Bacheler, NCSU

Tarnished Plant Bug, *Lygus lineolaris*

Plant Bugs

- Tarnished plant bug
  Clouded plant bug
  Cotton fleahopper
- Orthene, Bidrin are the standards
- Sweepnet early and black shake sheet later used with square retention or COTMAN

Economic Loss Due to TPB Mid-South (AR, LA, MS)



Williams et. al, BWCC Insect Losses

Are we doing this…

…too much?

…not enough?

…at the right time?

Insecticide Resistance Management

- **Most important threat to plant bug management**
  - **Pyrethroid**
  - **OP's**
- **Change use patterns**
  - **Neonics early, save "standards"**
  - **Utilize new chemistry- novaluron, flonicamid, etc.**
- **Rotate Chemistry**

Early Season Plant Bug Threshold Study
Midsouth- AR, TN, LA, MS

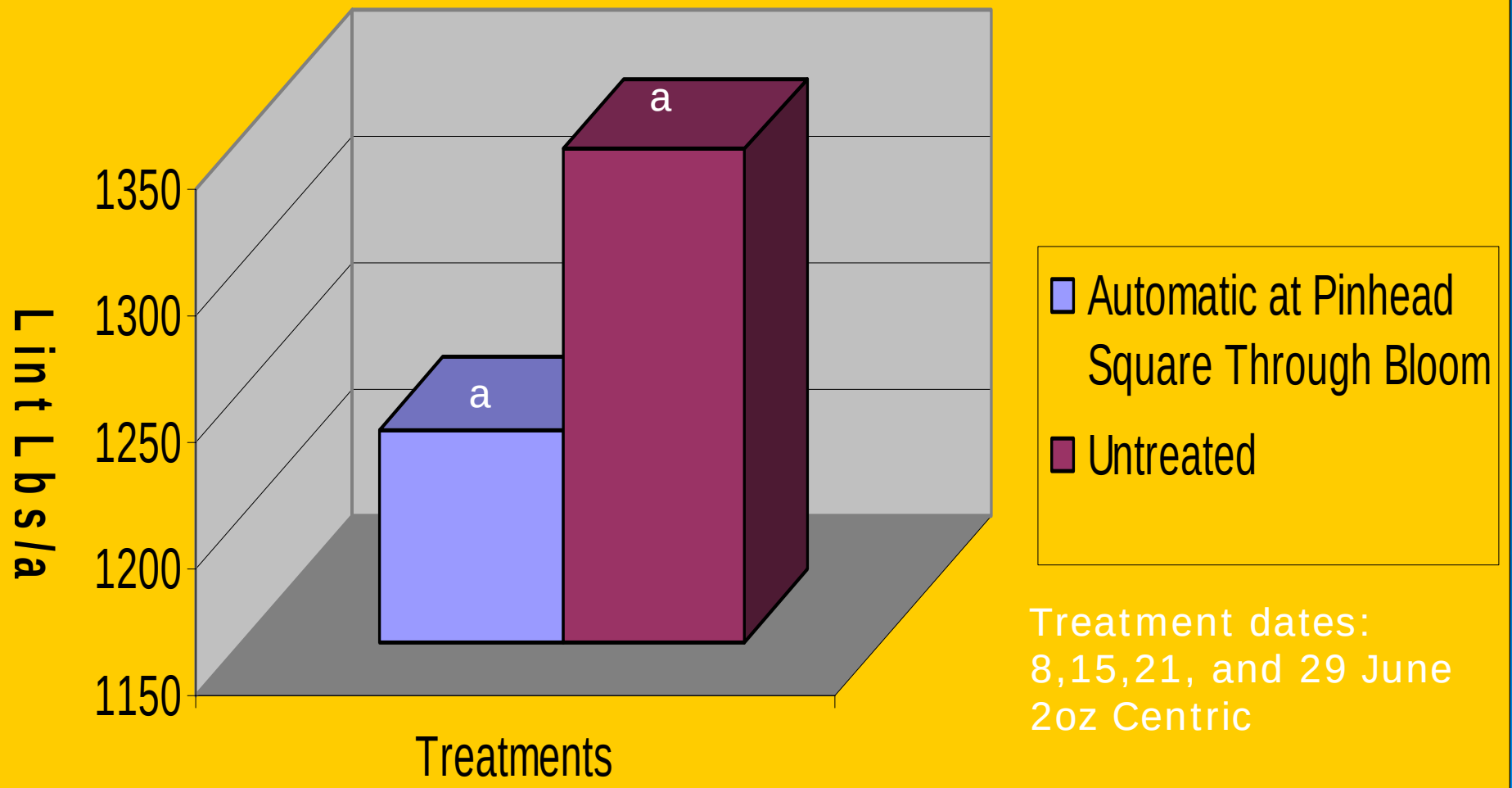
- Purpose of the study is to evaluate thresholds and determine at what level plant bug numbers impact yield.

Early Season Plant Bug Threshold Study

- Large Block Trials 24-36 rows X 100 ft
- Centric @ 2 oz/ A
- 4 Treatments to Trigger Applications:

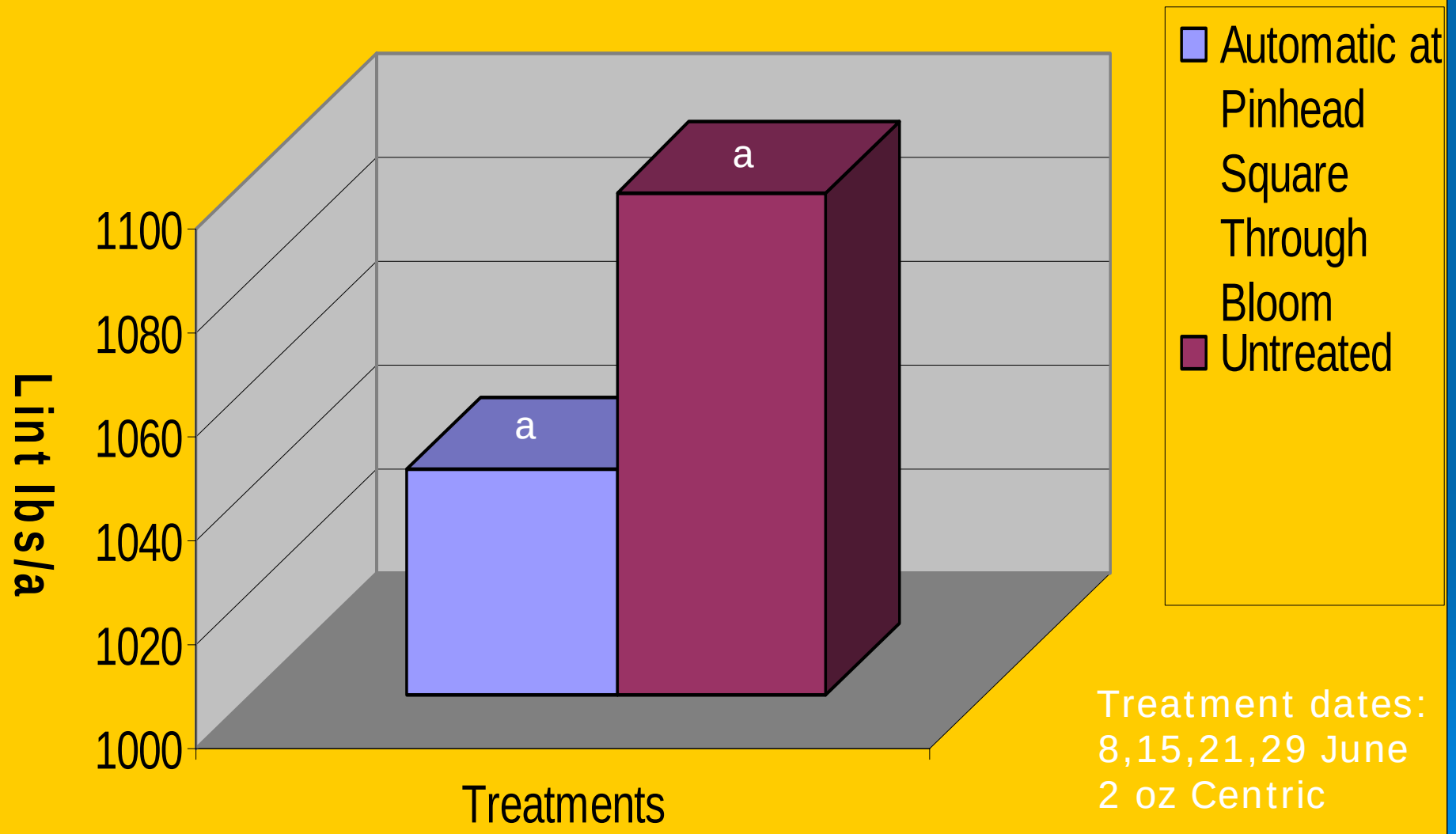
  1. Untreated
  2. Low = 8 Plant bugs/ sweep
  3. High = 16 plant bugs/ sweep
  4. Automatic applications (weekly)

Early Season Plant Bug Threshold at Soudan
Treated vs. Untreated



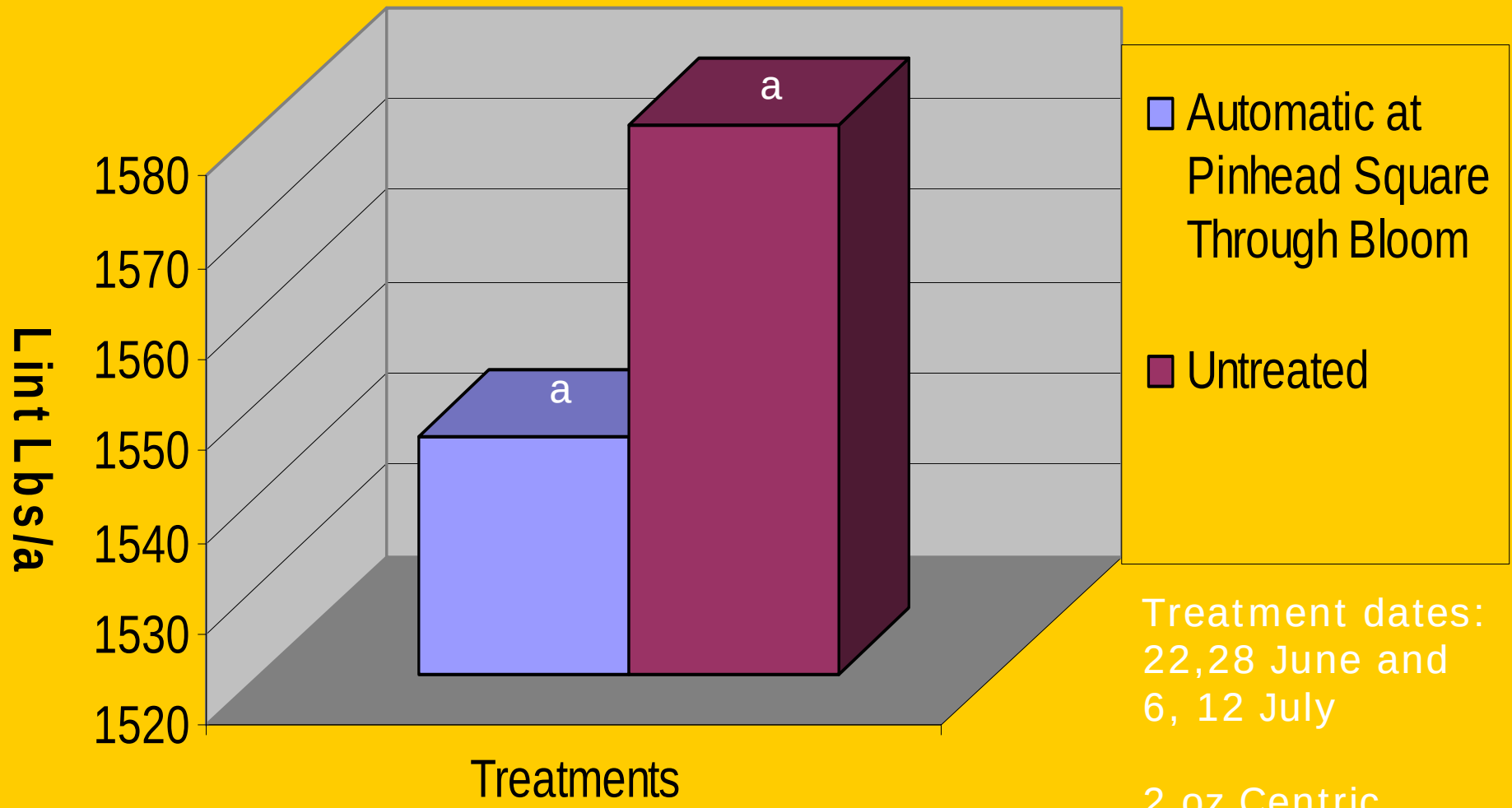
Treatment dates:
8,15,21, and 29 June
2oz Centric

Early Season Plant Bug Threshold at Steve Stevens
Treated vs Untreated



Treatment dates:
8,15,21,29 June
2 oz Centric

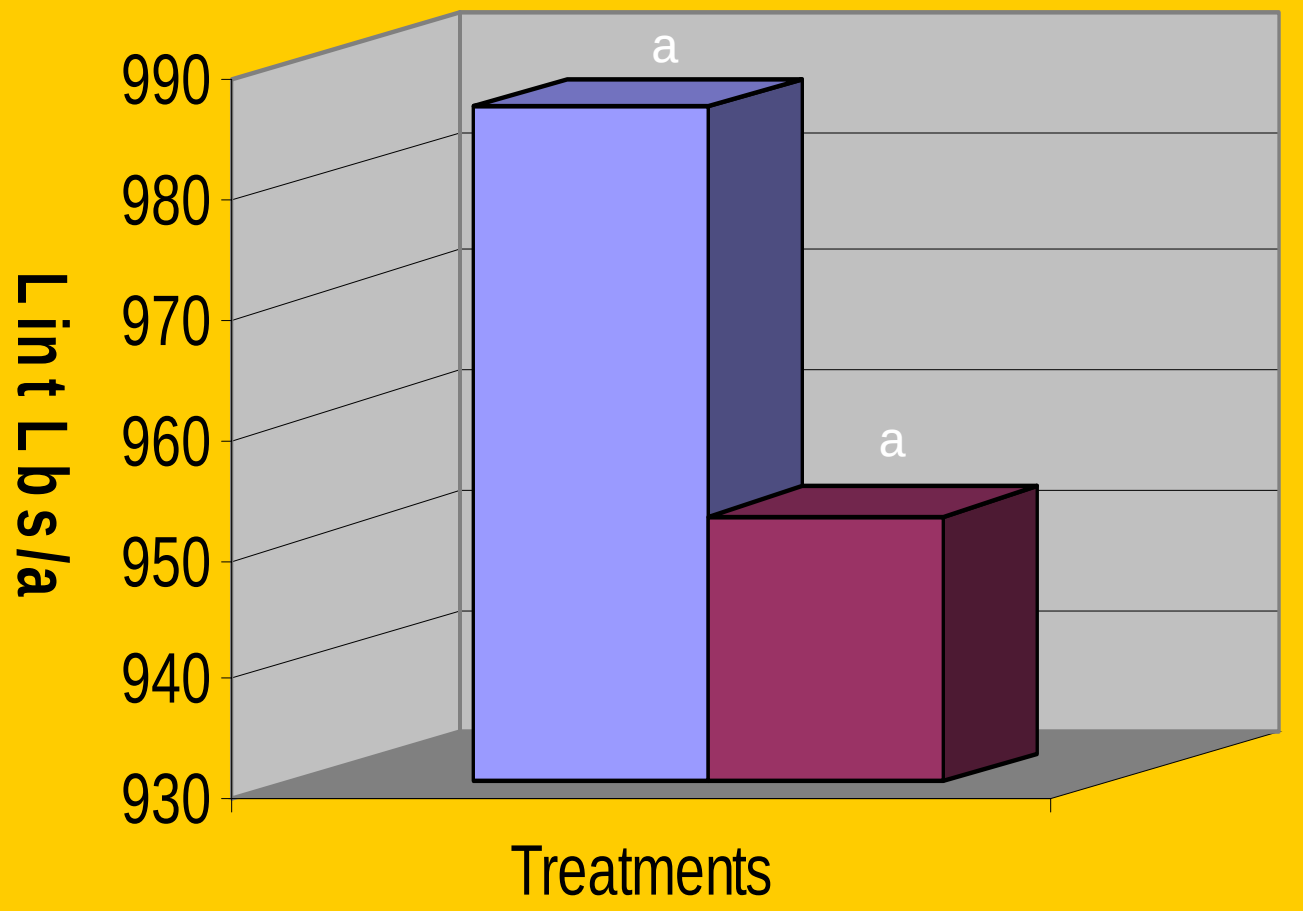
Early Season Plant Bug Threshold TN-S. Stweart
Treated vs. Untreated



Treatment dates: 22,28 June and 6, 12 July

2 oz Centric

Early Season Threshold Judd Hill
Treated vs. Untreated



- Automatic at Pinhead Square Through Bloom
- Untreated

Treatment Dates: 21,26,29 June and 3 July

2 oz Centric

When do YOU decide to spray an insecticide??

Do you have “Zero Tolerance” for plant bugs??

TOP 10 REASONS TO SPRAY

1. When my neighbors do
2. When my neighbors don’t
3. I get an urge to kill something invertebrate
4. When Jupiter aligns with Mars and the moon is in the 7th hour
5. I hear a voice…….
6. It just feels right… When in doubt put something out
7. Recreational spraying
8. It’s convenient, to avoid making additional trips across the field
9. At certain crop stages (PHS, 1st bloom)
10. **When pest populations are close to established thresholds to avoid economic damage and maintain maximum economic yield**

The Most Expensive Insecticide Application……
Is the one that doesn't work.

- Currently, we have more insects in cotton with resistance/ tolerance issues than any other time in the history of cotton production in the U.S.
- Budworm, Bollworm, Tarnished Plant Bug, Aphids, Soybean Looper, Brown and Red Banded Stink Bugs
- Over use and misuse can get us resistance problems we don't want