Tarnished Plant Bug and Cotton Aphids

Resistance and Management Options

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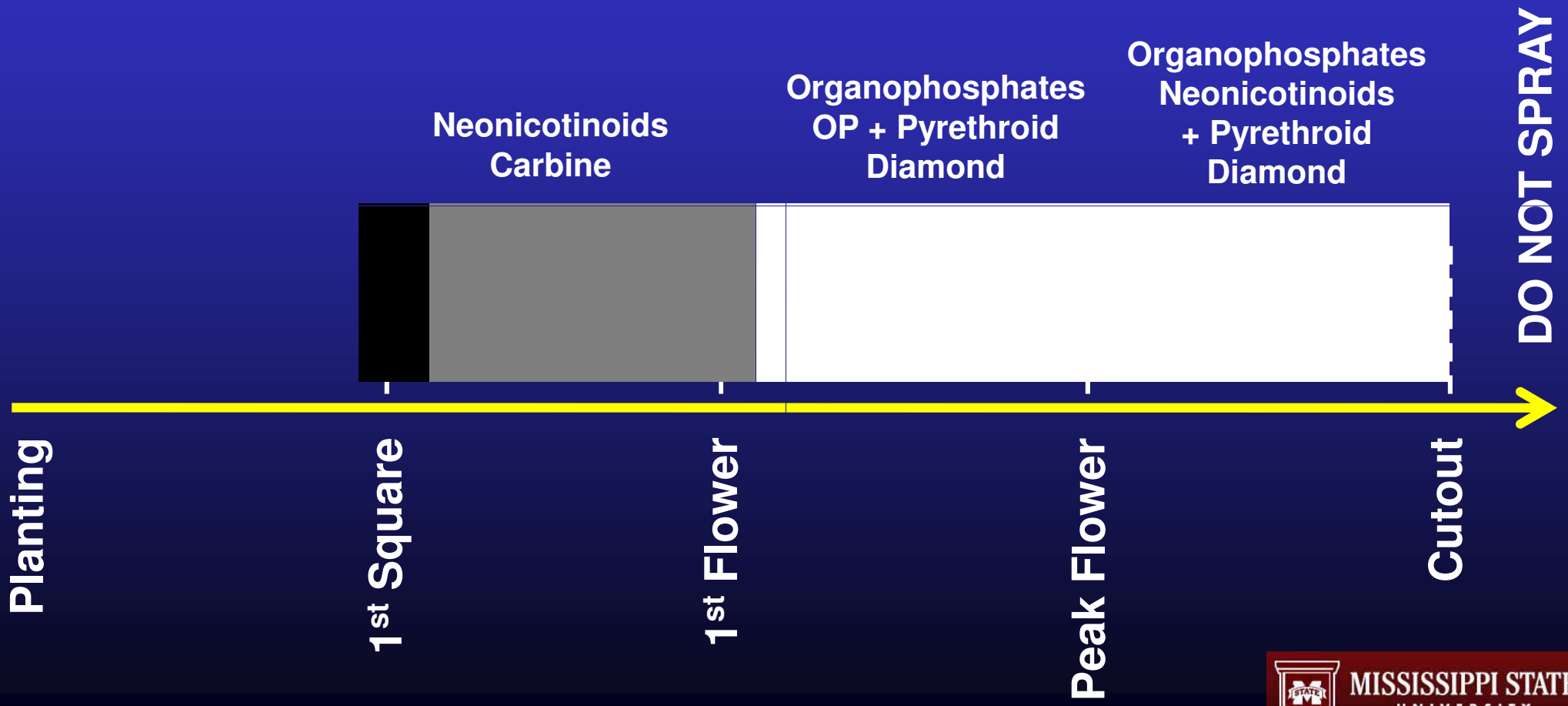
Tarnished Plant Bug and Aphid Control



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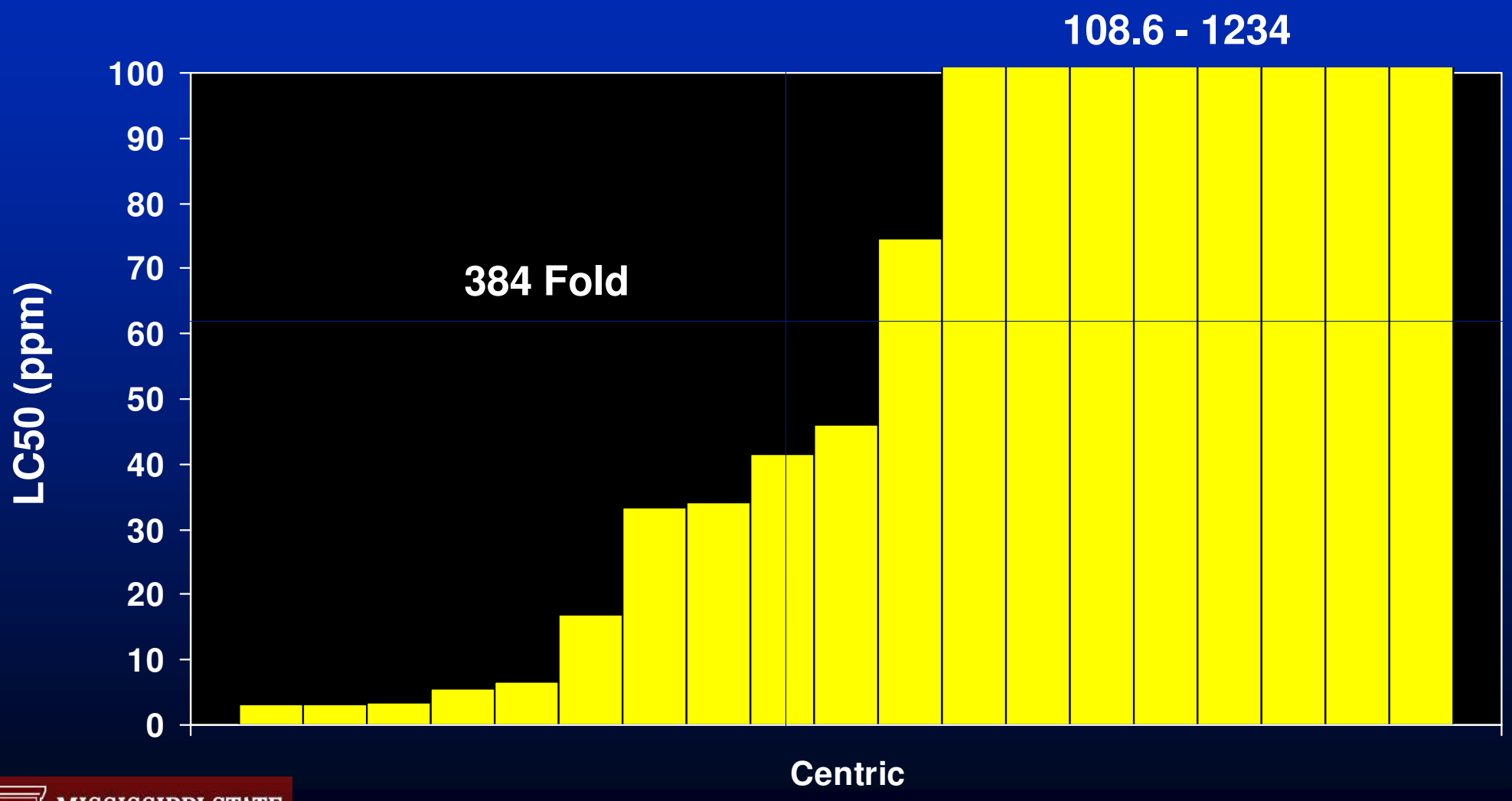
Cotton Aphid Leaf-Dip Bioassays – 2008-2010
48 HAT



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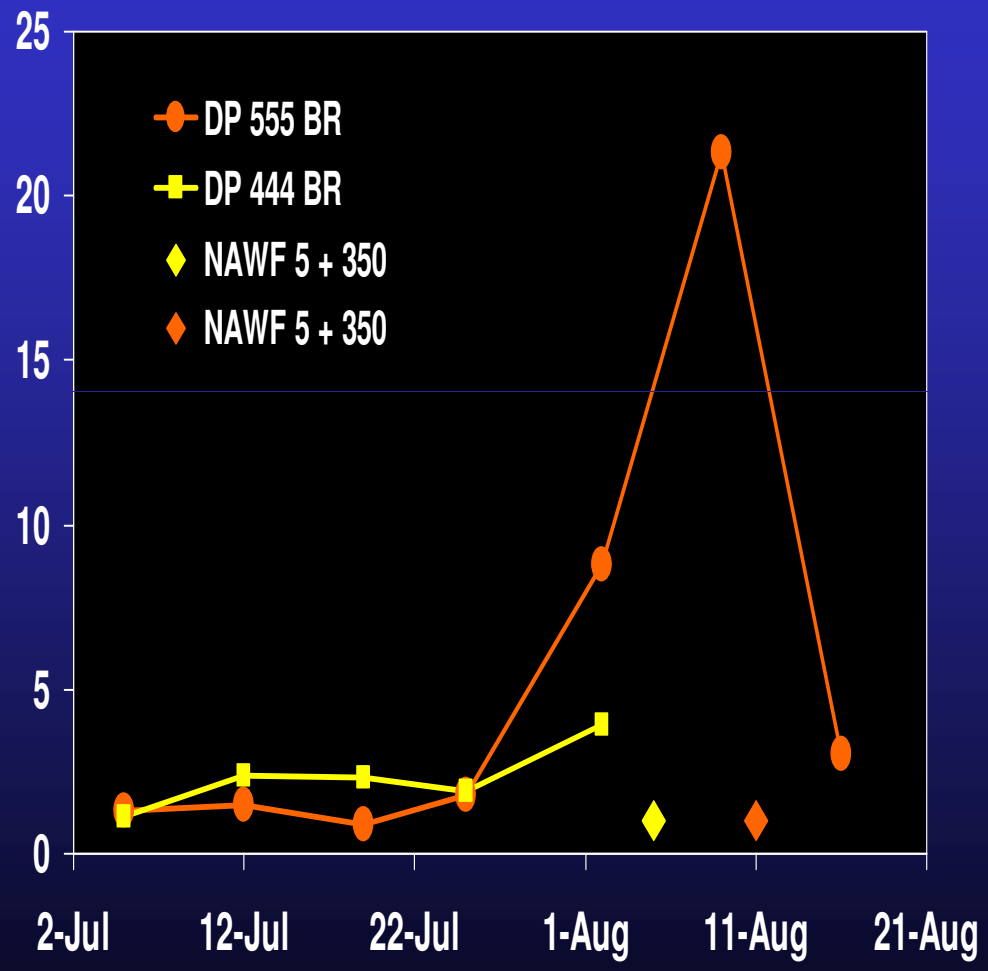
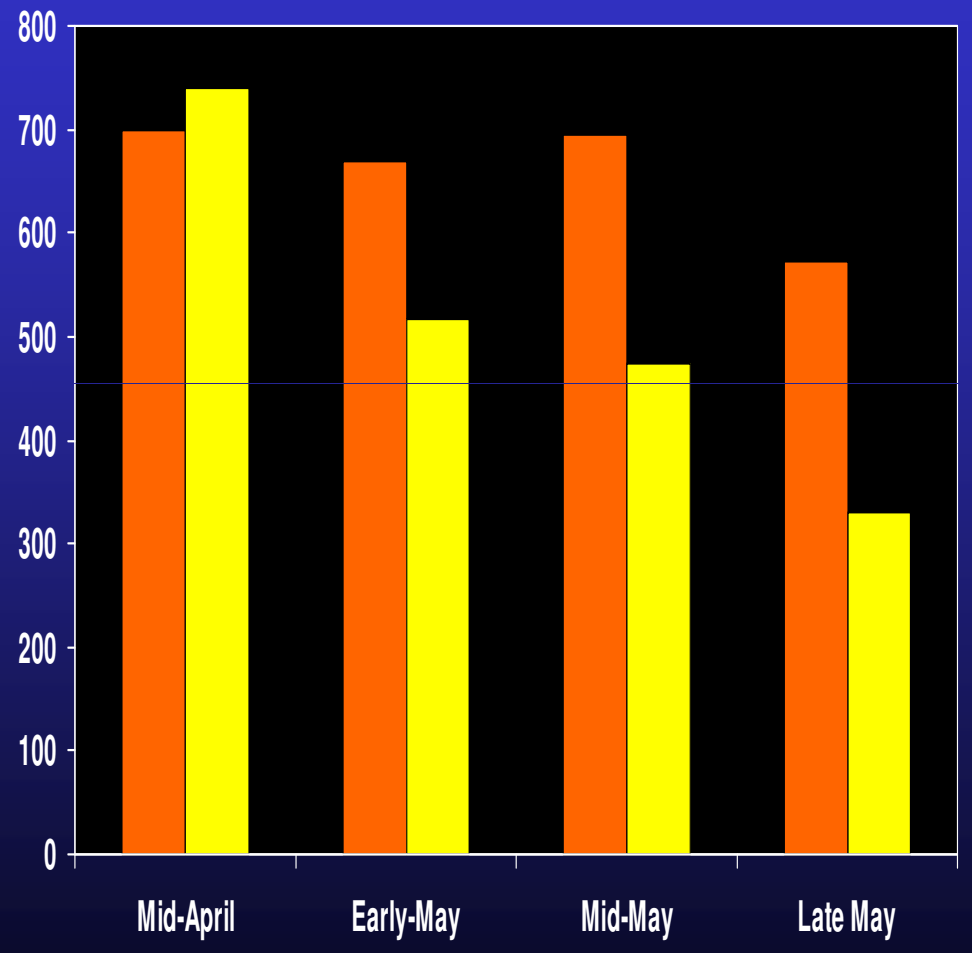
Overview

- Crop Management
- Insecticide Use Strategies
- “New” Insecticides
- Future Insecticides

Crop Management

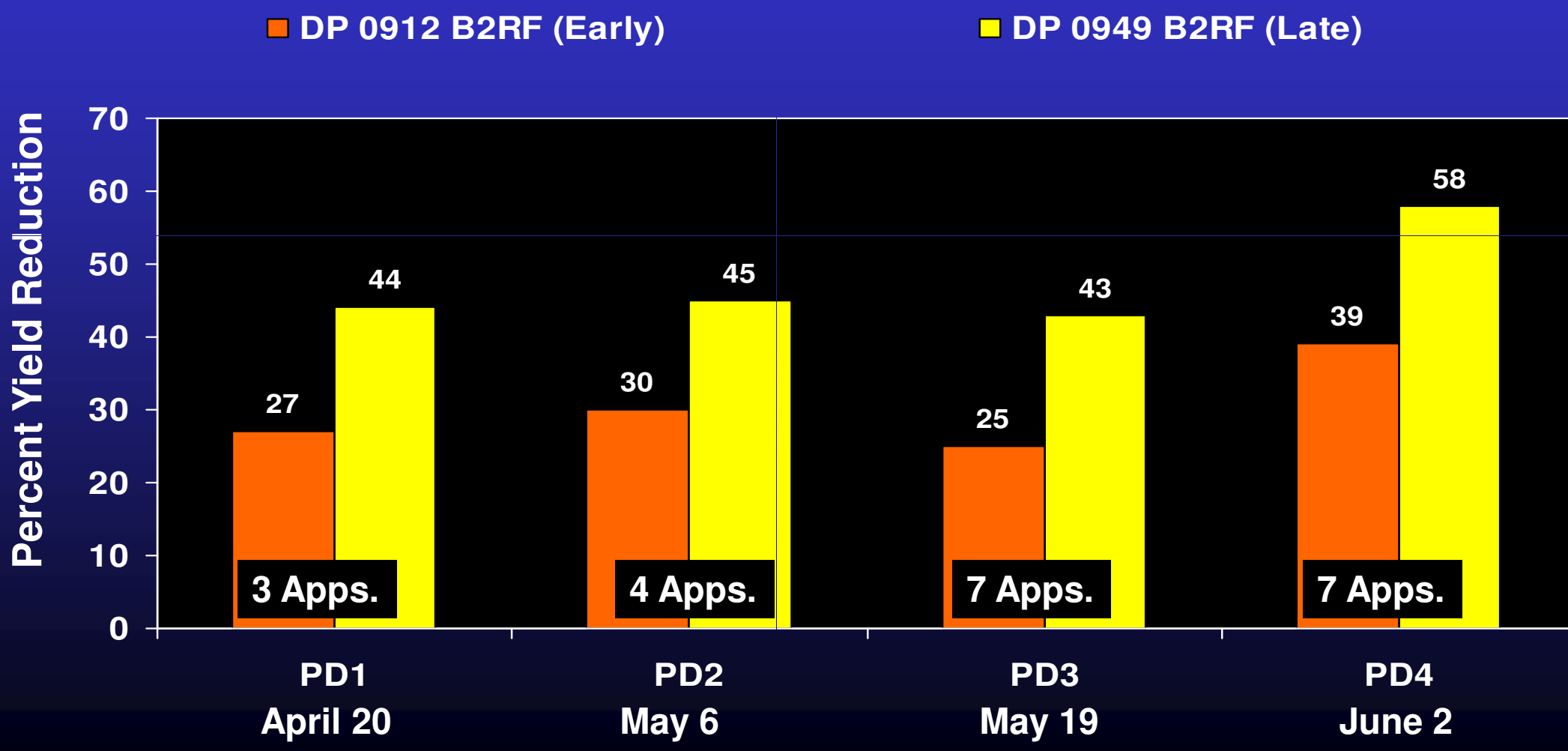
Impact of Earliness



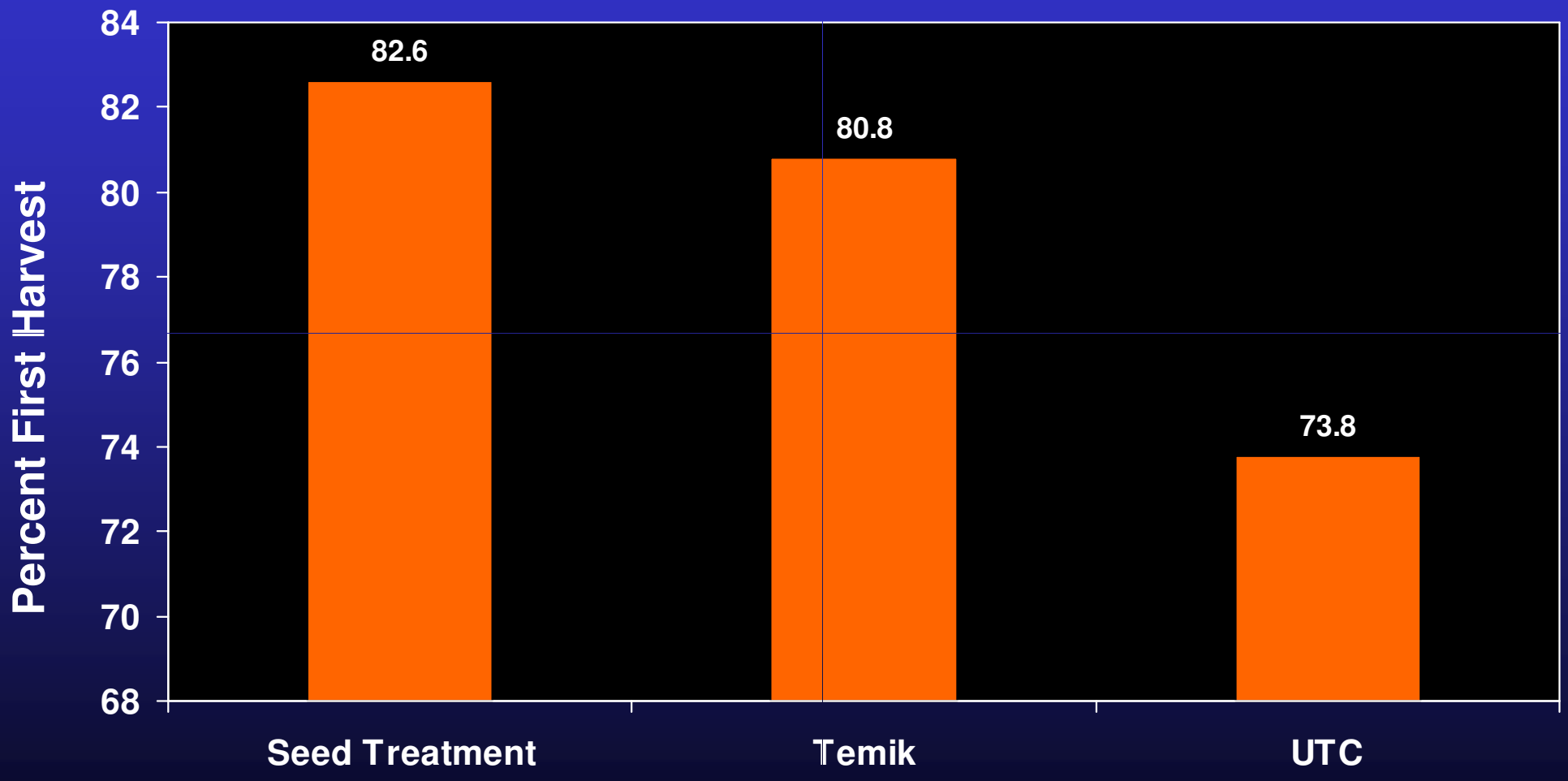


Planting Date x Varietal Maturity

Mr. Brian Adams, M.S. Student

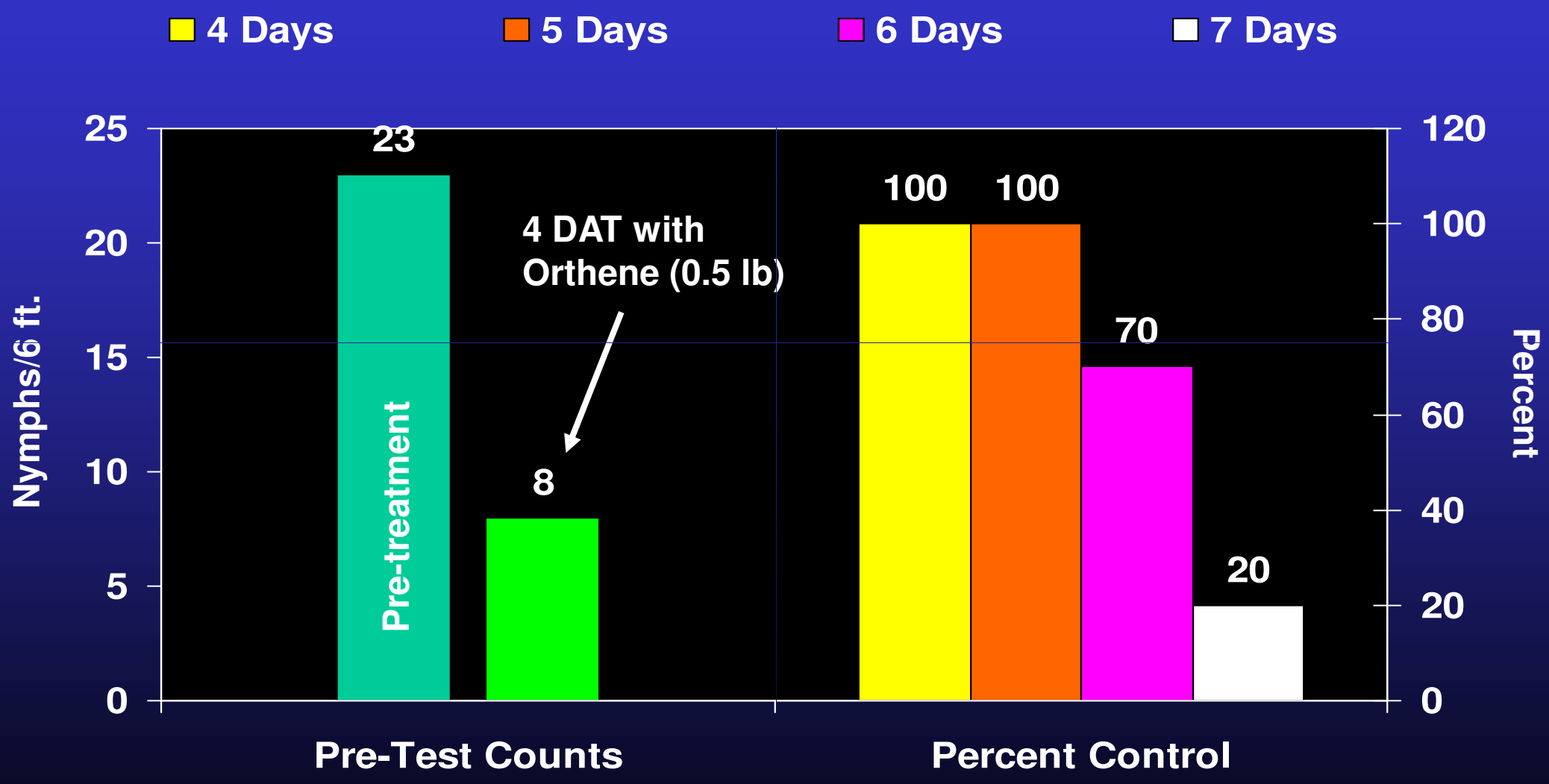


Impact of Thrips on Crop Maturity

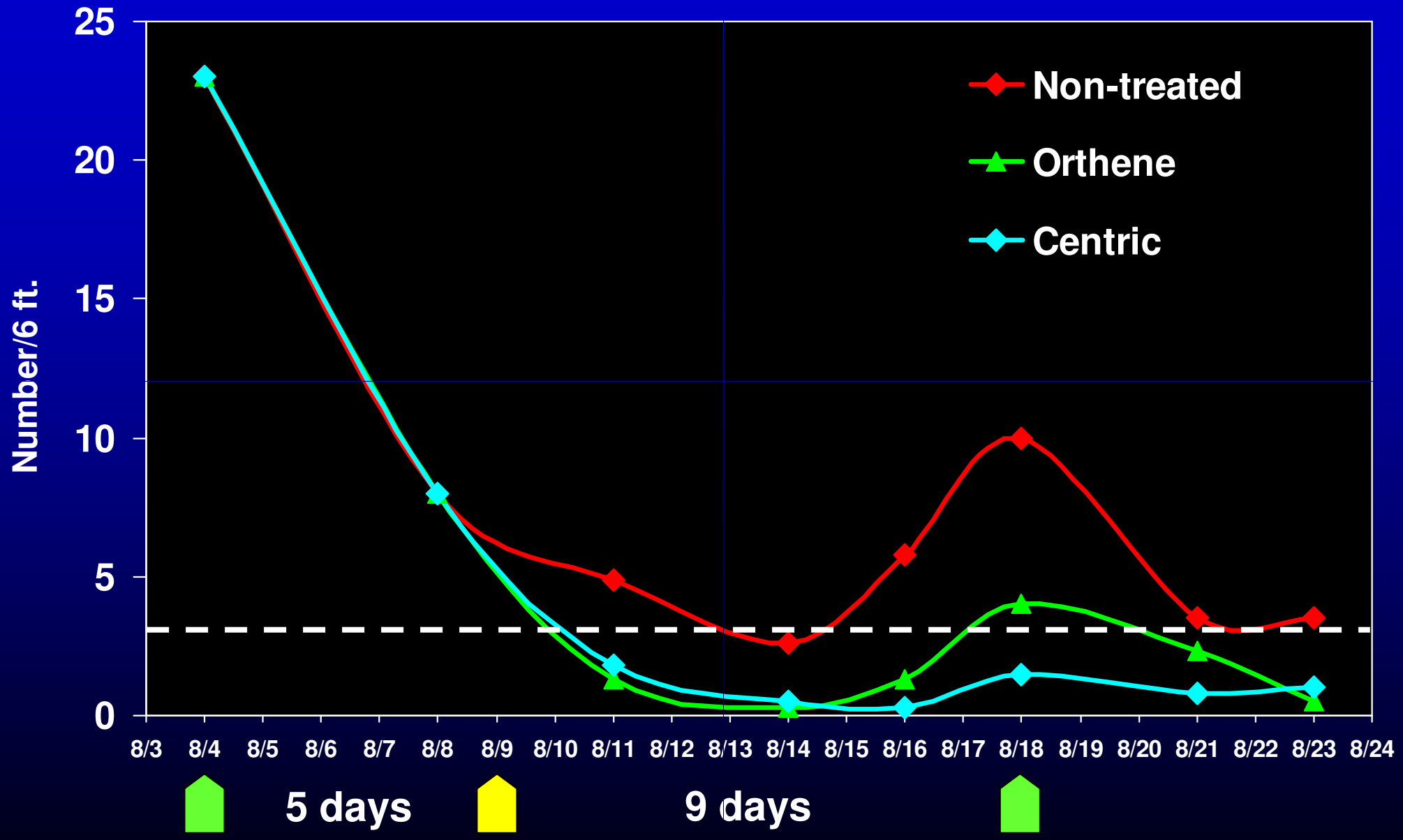


Insecticide Use Strategies

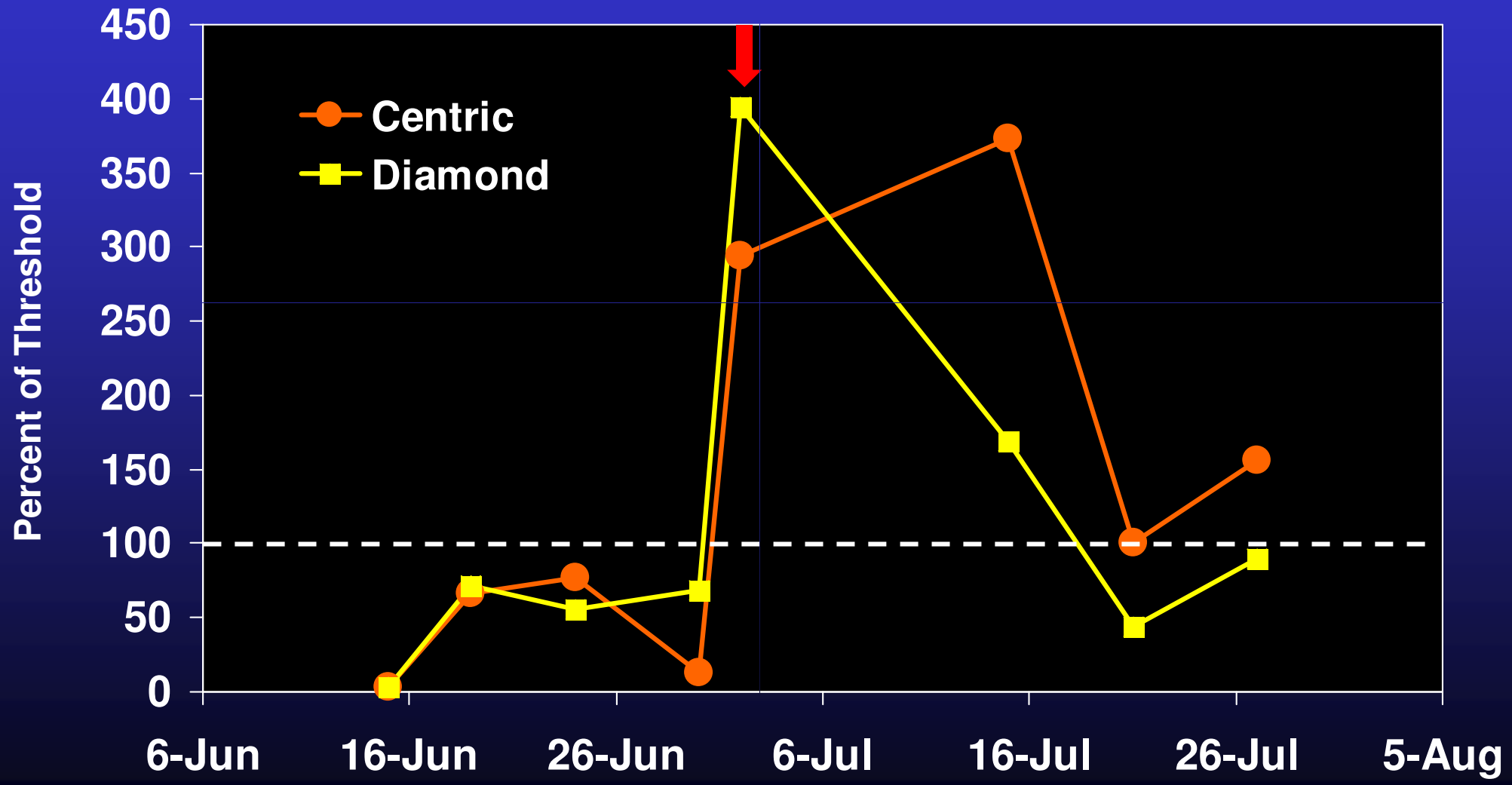
Insecticide Application Intervals



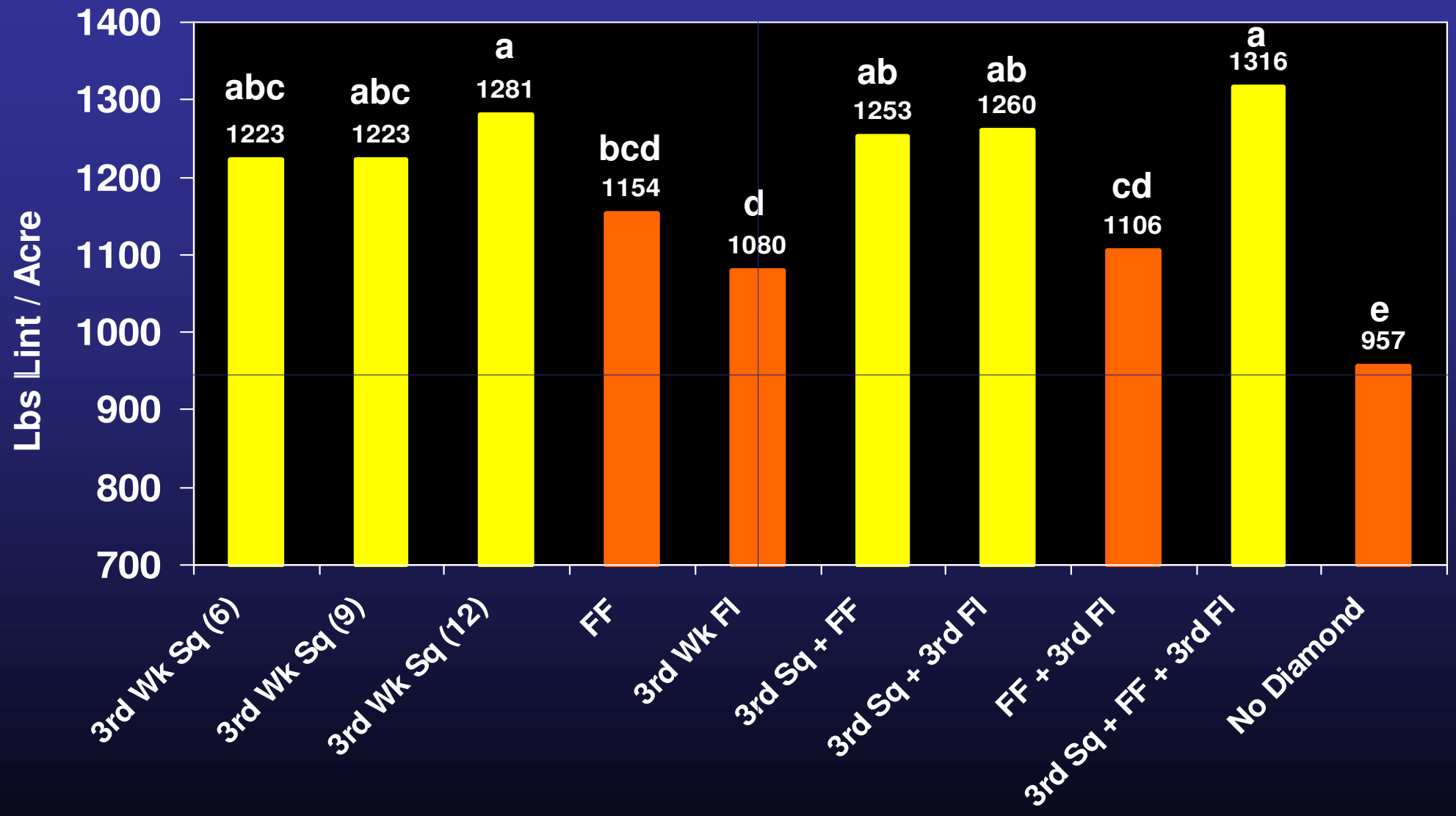
Insecticide Rotations



Diamond Application Timing



Diamond Timing and Number of Applications- 2010



Impact of Diamond on TPB

Instar	LC50	95% CI
1st	2.8 ug/vial	0.69-4.40
2nd	28.8 ug/vial	21.4-49.5
5th	32.4 ug/vial	17.1-44.1

Treatment	Eggs laid/F	% Eggs hatched
Constant	19.9b	1b
Weekly	25.0b	3b
Once	40.3b	12b
Control	91.3a	48a

Overview

- "New" Insecticides

Fyfanon® PLUS ULV
ULTRA LOW VOLUME CONCENTRATE INSECTICIDE

BidrinXPII

Brigadier® Insecticide

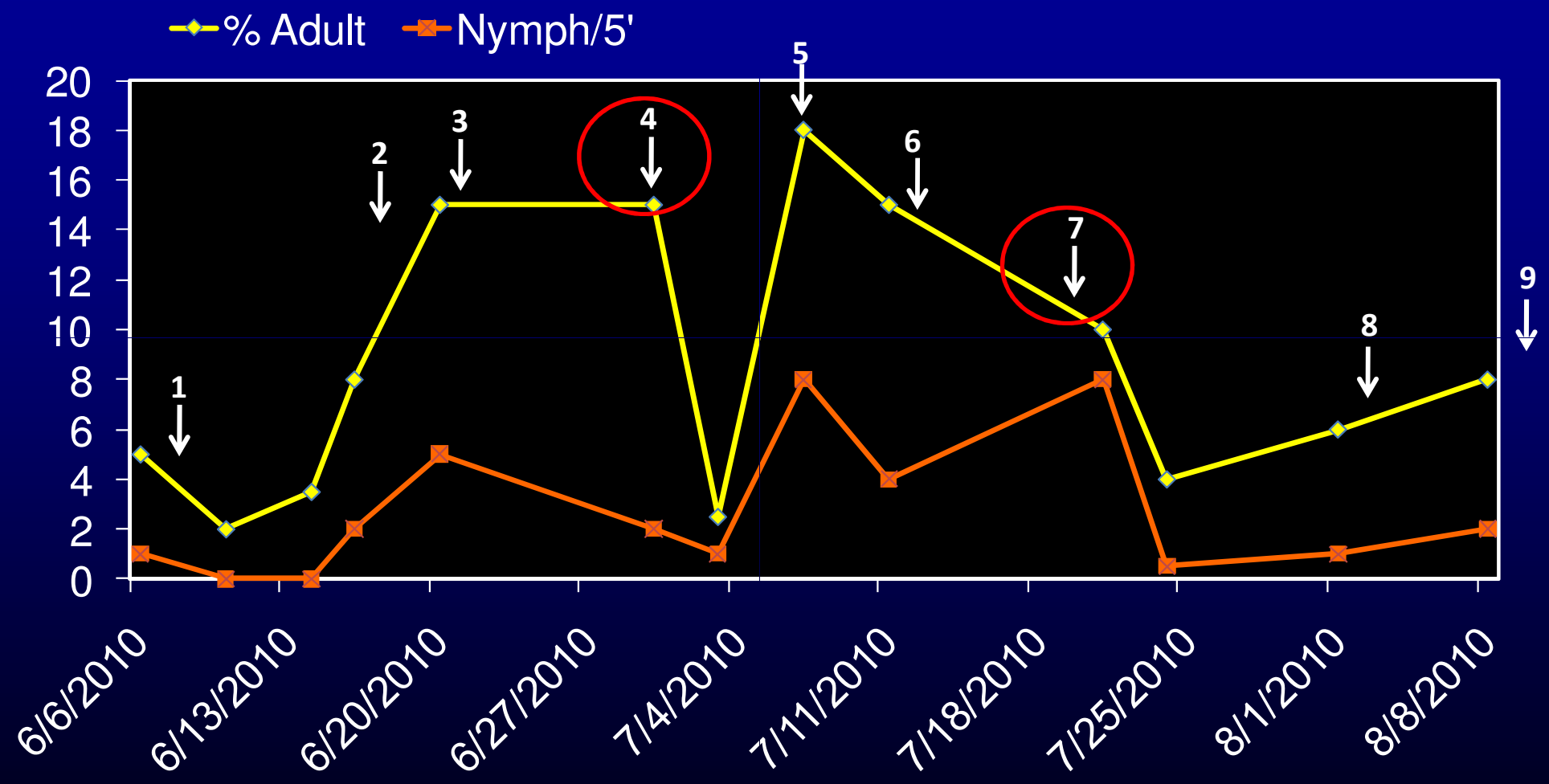
VALENT®
BELAY™ INSECTICIDE

- Cheminova

Fyfanon® PLUS ULV
ULTRA LOW VOLUME CONCENTRATE INSECTICIDE

- Malathion (9.4 lb)
  Gamma-Cyhalothrin (0.15 lb)
- Cotton
- 8-16 oz
- Bugs
  Caterpillars

Tarnished Plant Bug Adults and Nymphs Through Flowering



(1=Centric 1.7 oz), (2=Centric 1.7 oz), (3=Bidrin 4 oz + Diamond 5 oz), (4=ULV app), (5=Brigade 5 oz + Acephate .75 lb) (6= Acephate 1 lb + Diamond 5 oz), (7=ULV app), (8=Brigade 5 oz + Acephate 0.5 lb), (9=Brigade 5 oz + Acephate 0.8 lb)

Bidrin XPII

- Amvac
- Dicotophos (4 lb)
  Bifenthrin (1 lb)
- Cotton
- Bugs
- No longer a co-pack

Fluid ounces per acre of Bidrin XPII	8.0	10.5	12.8
Contains dicrotophos (lb ai)	0.250	0.333	0.400
Contains bifenthrin (lb ai)	0.063	0.083	0.100

- **FMC Corporation**

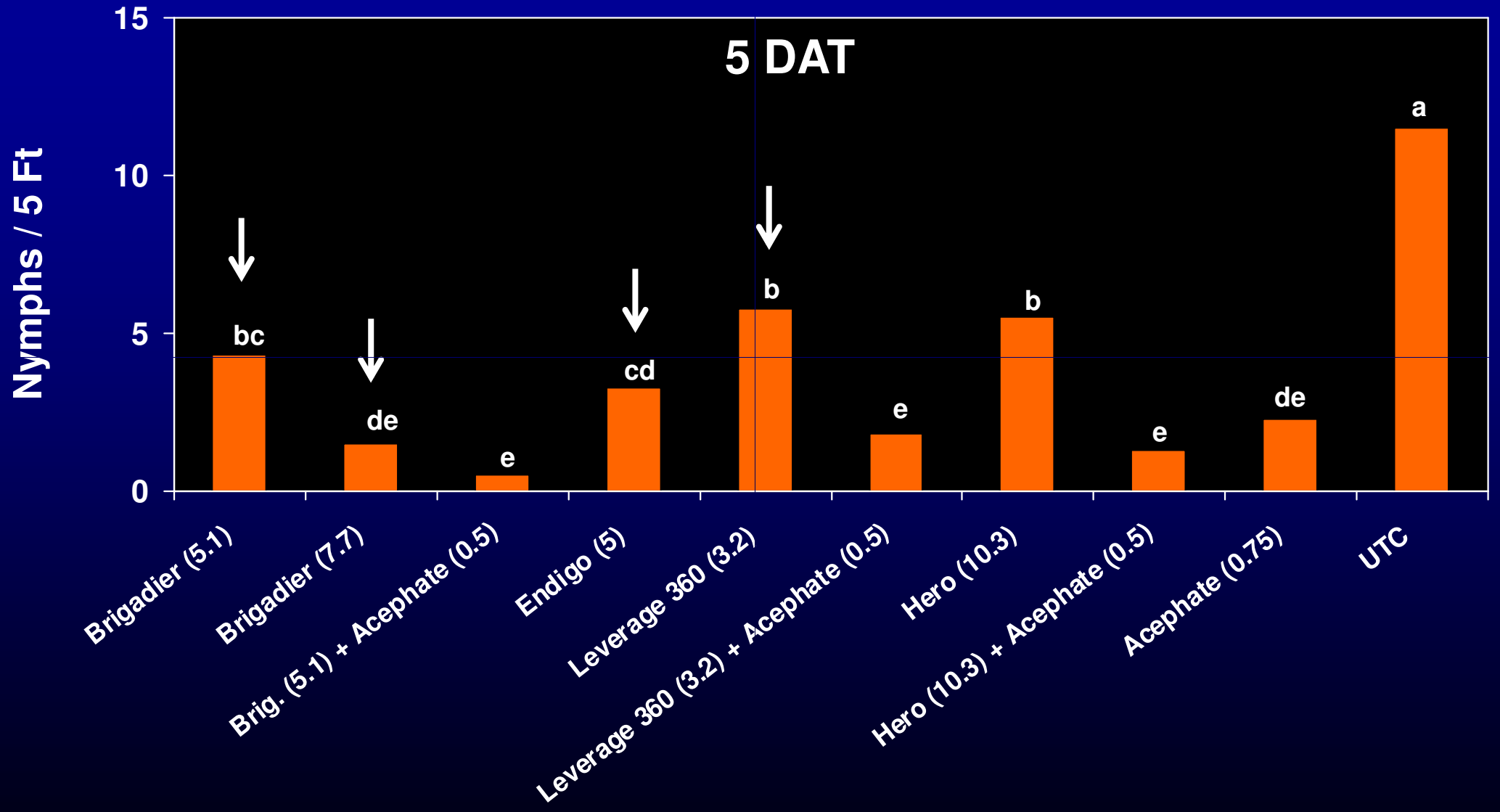
- Imidacloprid (1 lb)
  Bifenthrin (1 lb)

- Cotton, Soybean, Peanut

- 3.8-7.7 oz (Cotton)
- 3.8-6.1 oz (Soybean)
- 3.8-5.6 oz (Peanut)

- Bugs
  Caterpillars

Tarnished Plant Bug Management - 2010



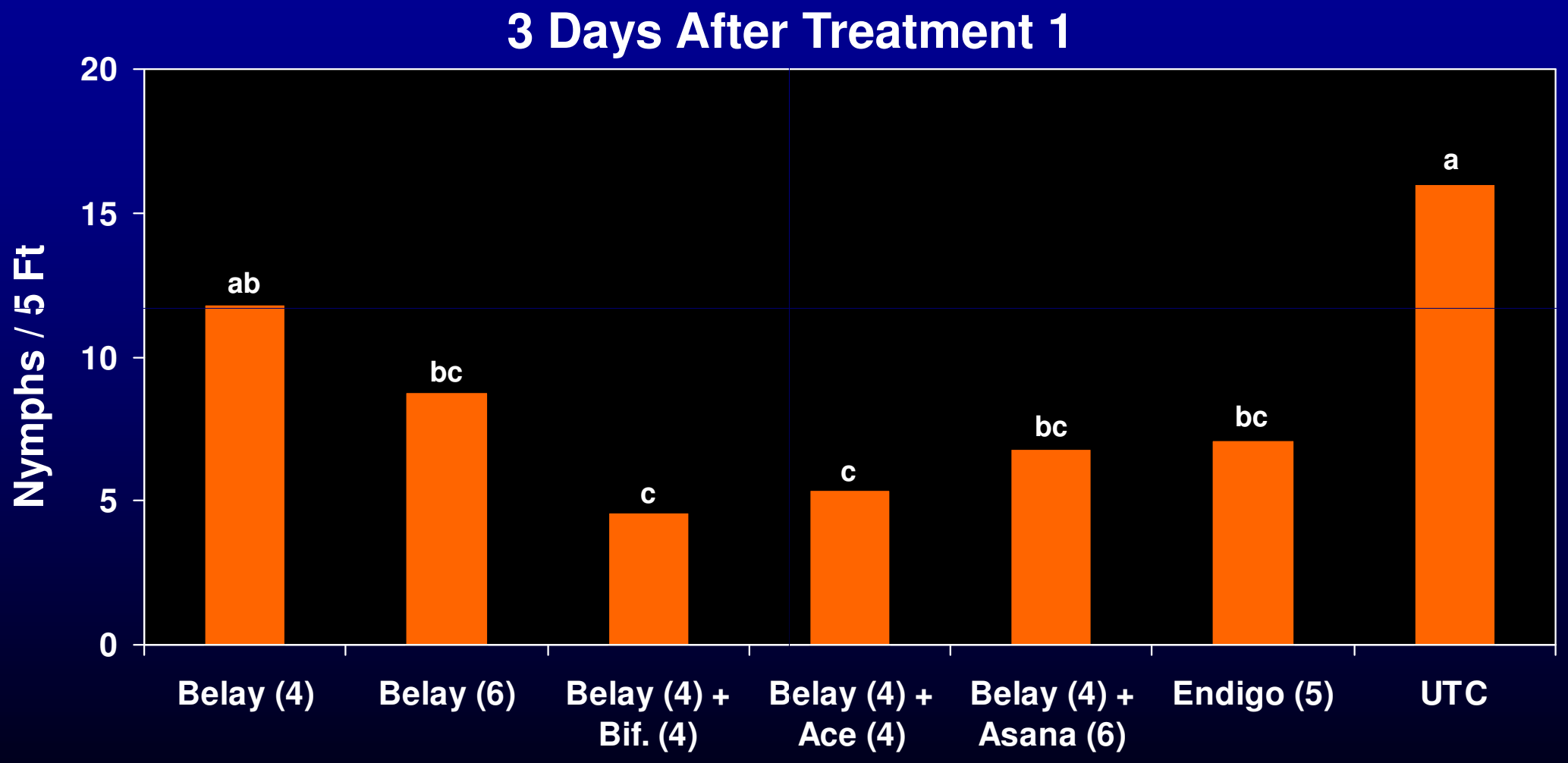
2010

- Valent
- Clothianidin
- 2.13 lbs/Gal SC
- Cotton, Soybean
- 3-6 oz/A
- True Bugs:
  tarnished plant bug,
  stink bugs, cotton aphid

VALENT®

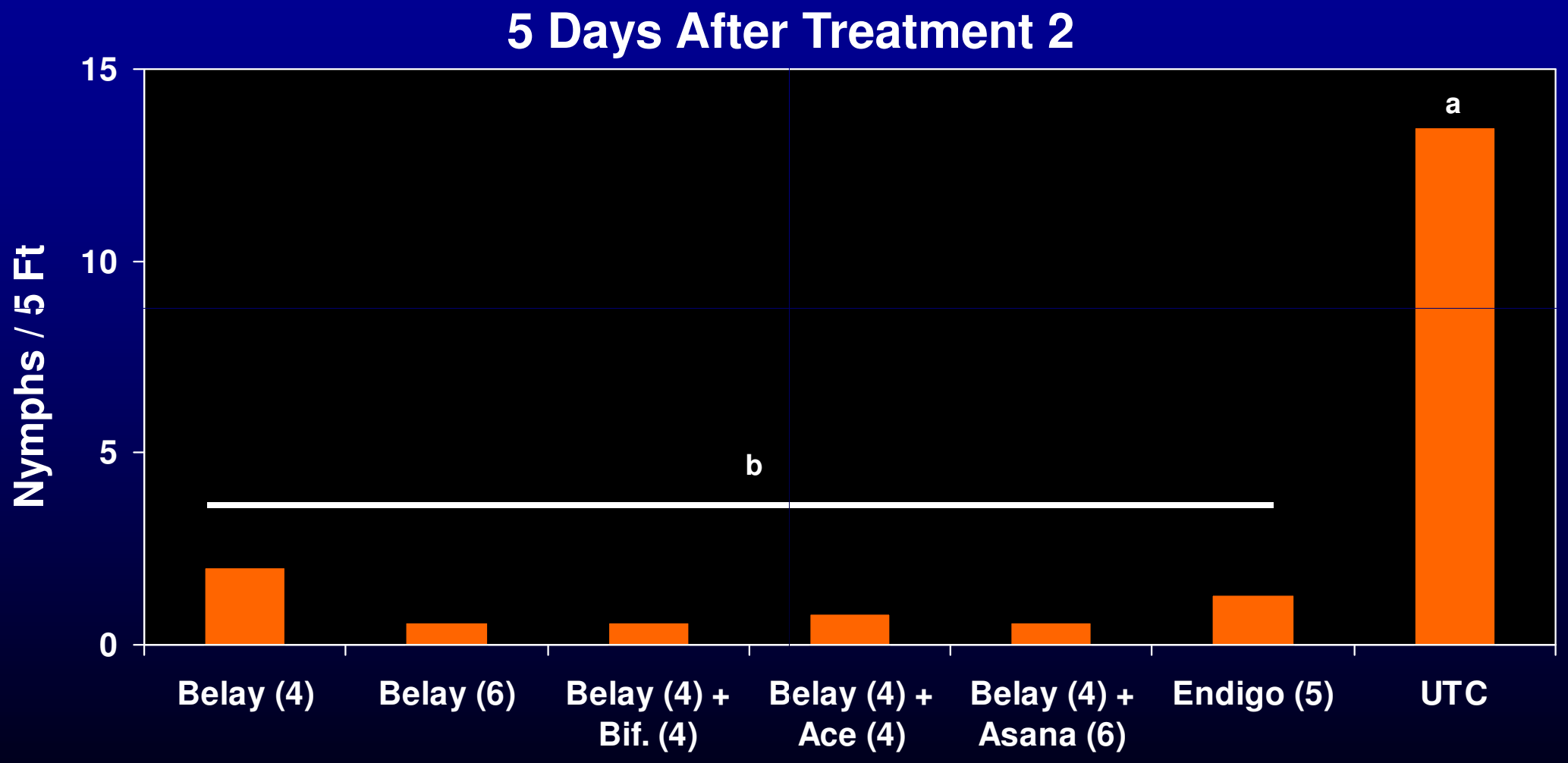
BELAY™
INSECTICIDE

Tarnished Plant Bug Management with Belay
Stoneville, MS - 2010



2010

Tarnished Plant Bug Management with Belay
Stoneville, MS - 2010



2010

Overview

- Future Insecticides

- **Dow AgroSciences**
- **Sulfoxaflor**
- **50% WG**
- **Cotton**
- **0.7-2.88 oz/A**
- **True Bugs:**
  cotton aphid, tarnished plant bug, stink bugs?

Dow AgroSciences™

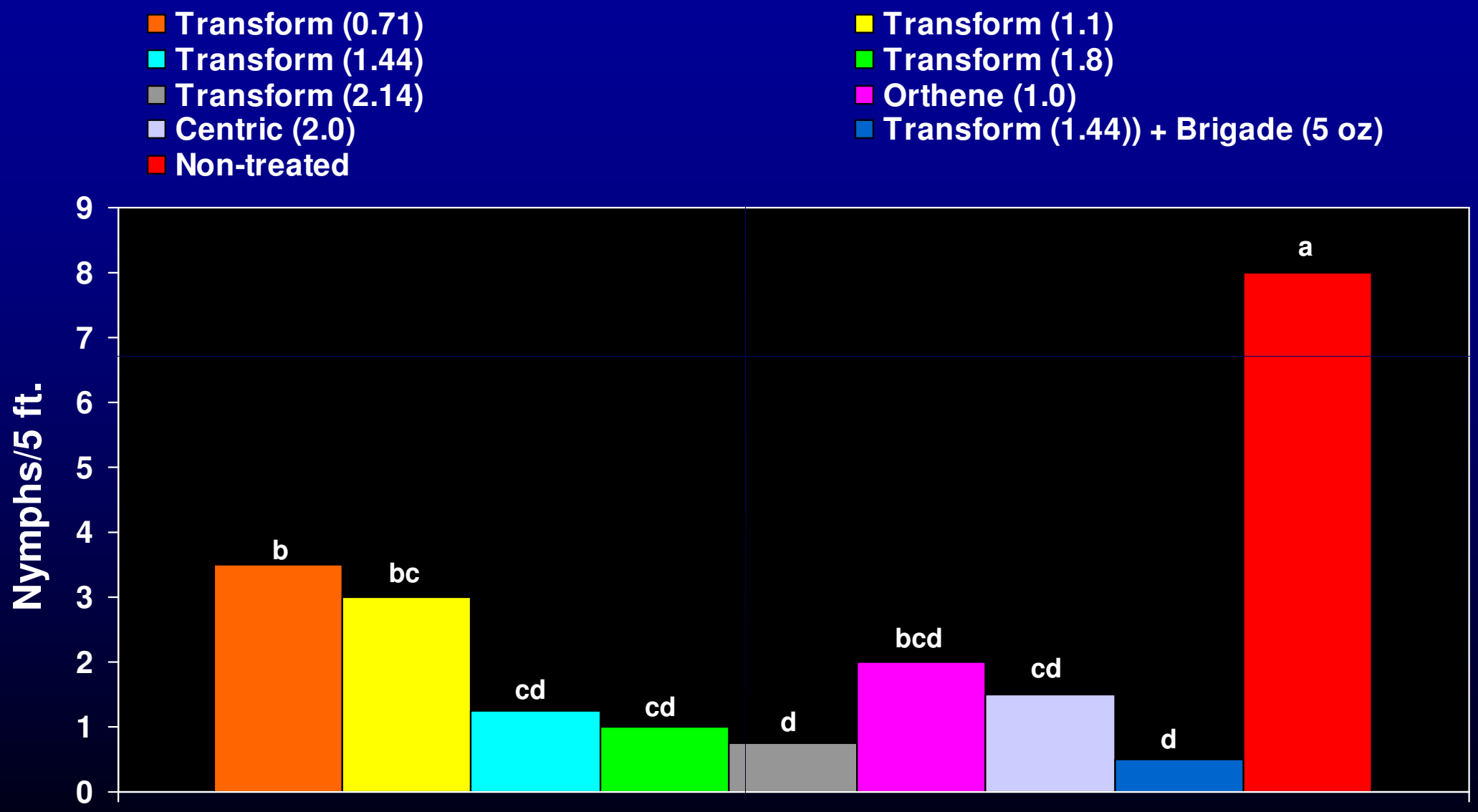
Transform™ WG

Insecticide

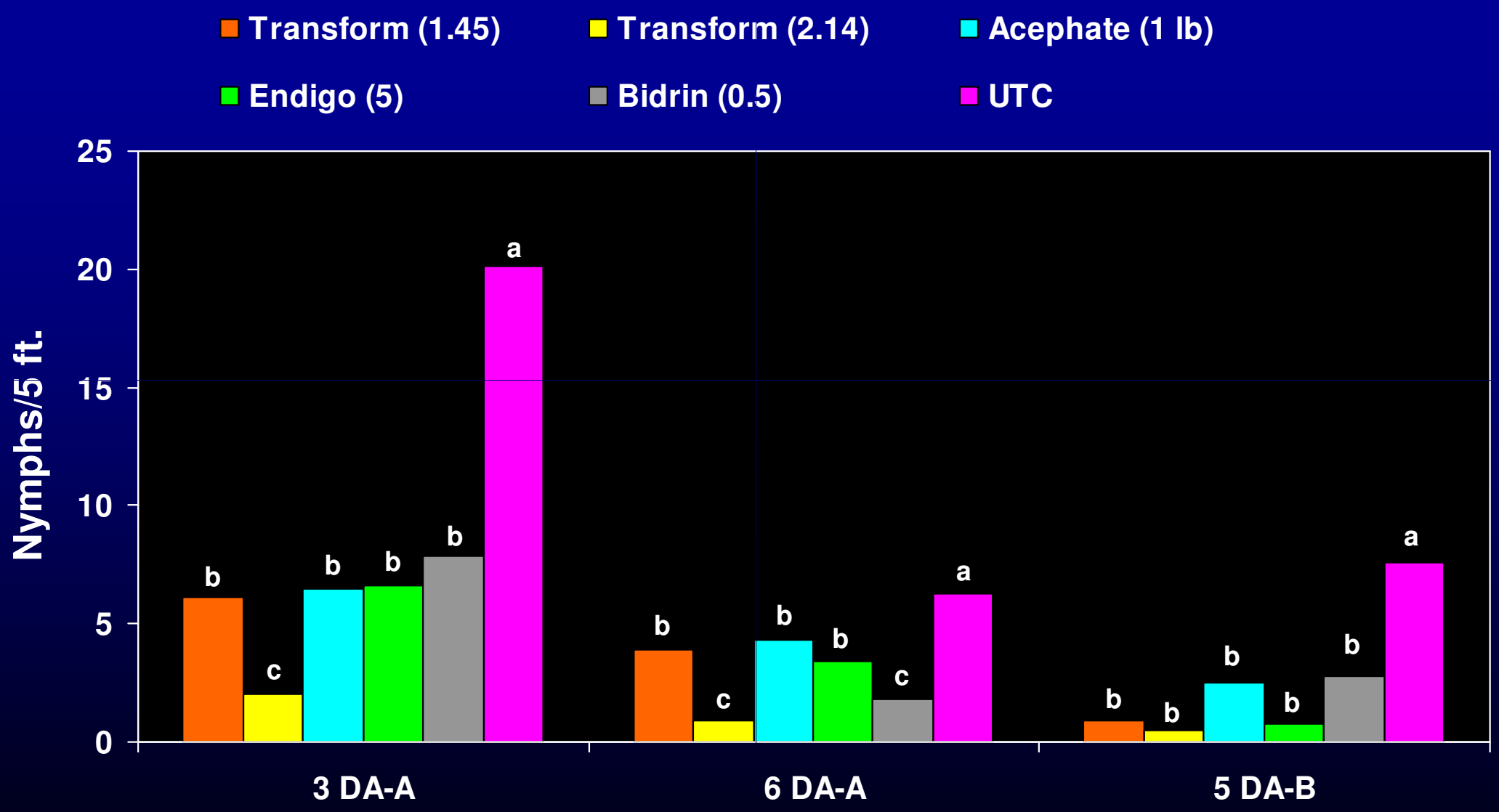
™Trademark of Dow AgroSciences LLC

****Transform is not labeled at this time****

Efficacy of Transform Against Plant Bugs



Tarnished Plant Bug Management with Transform



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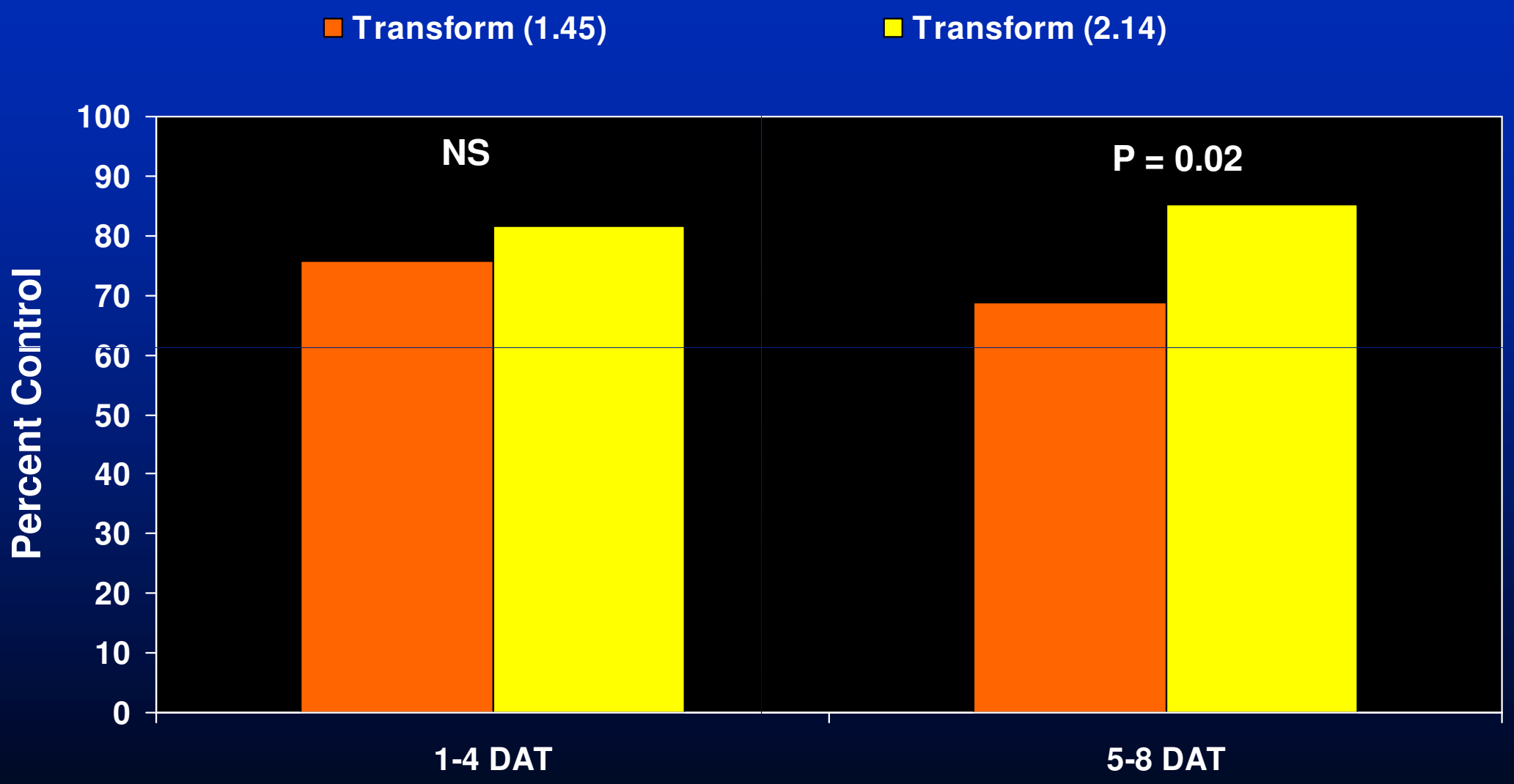
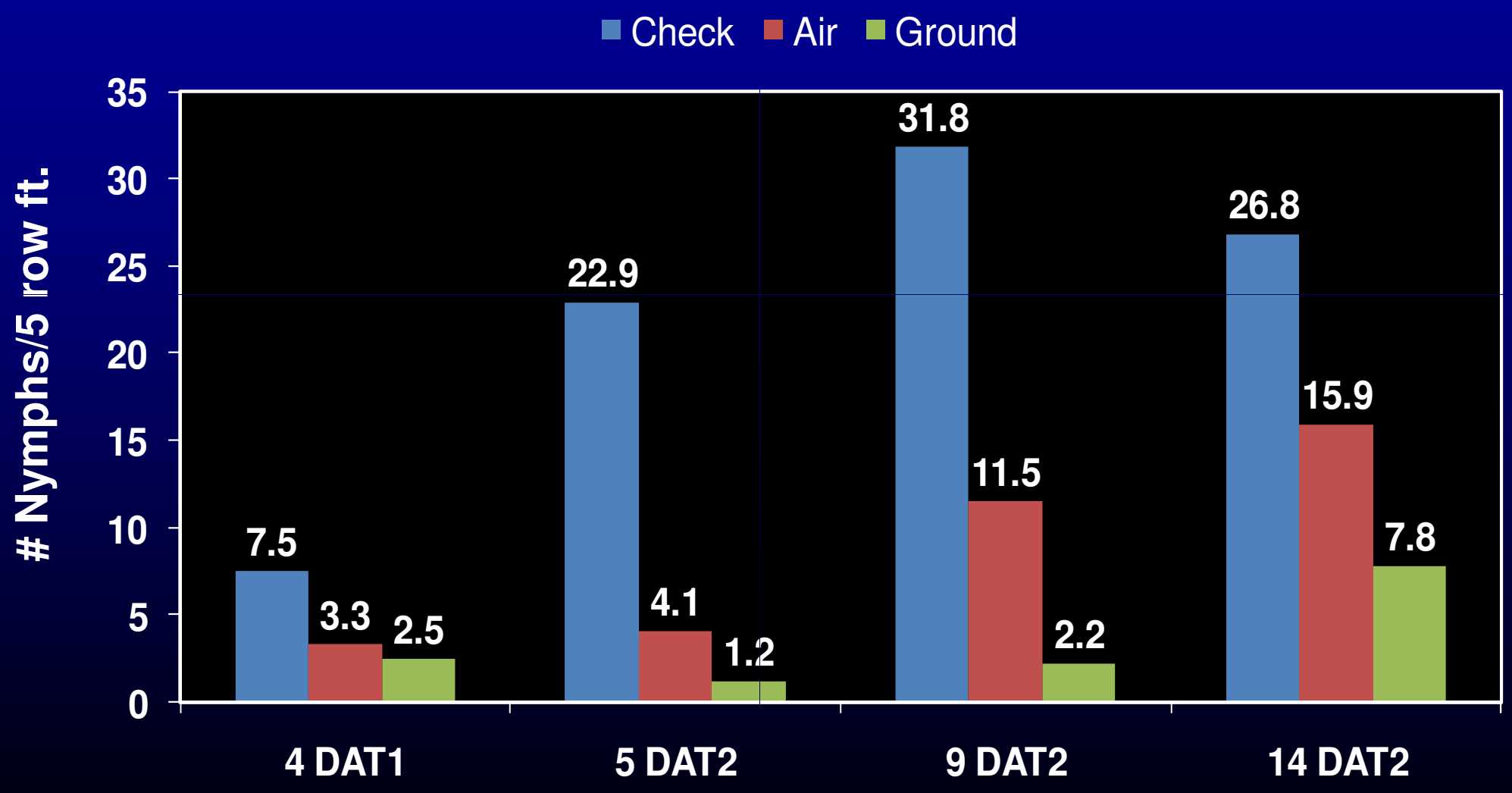
2010

Tarnished Plant Bug Management with Sulfoxaflor



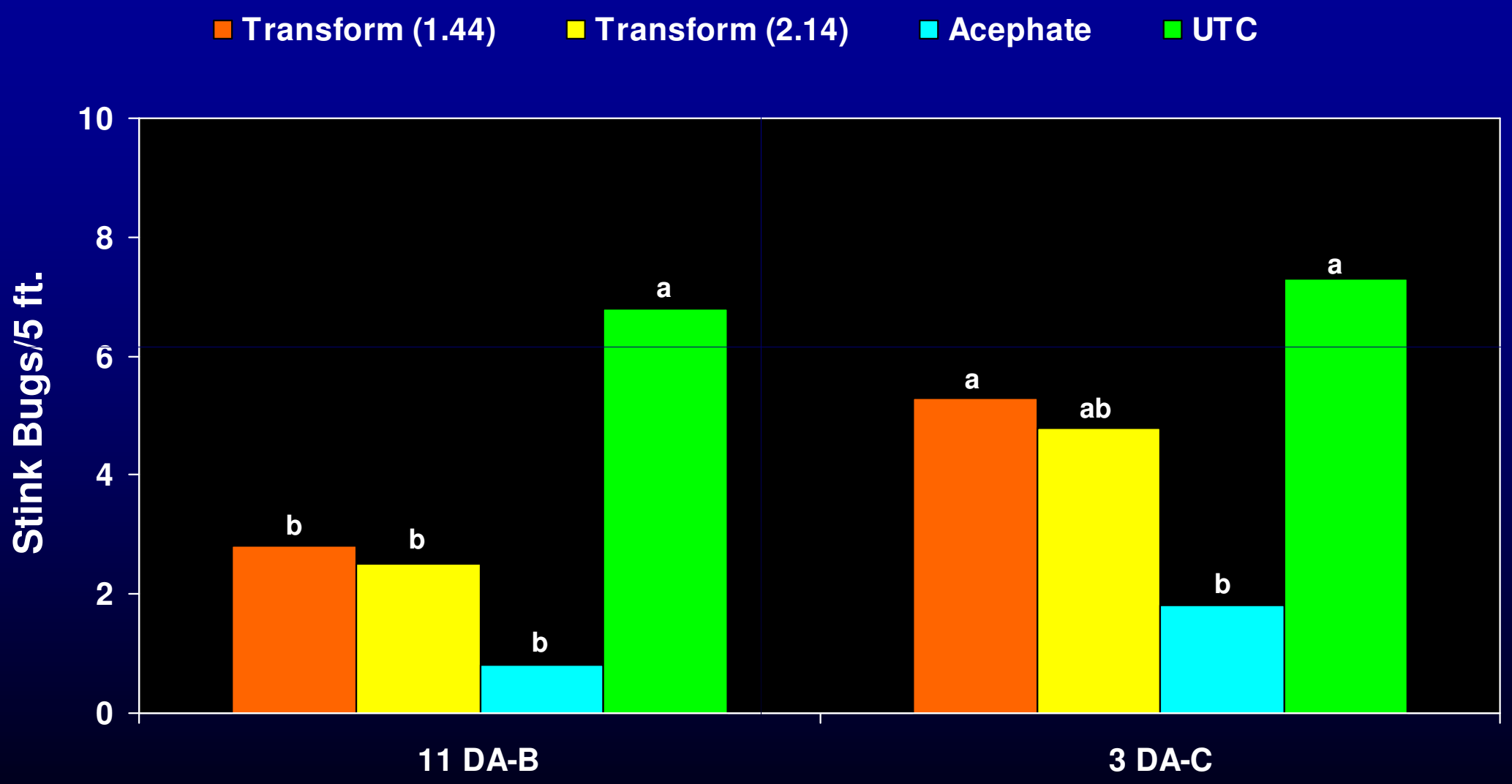
2010

Air vs. Ground Transform Test Glendora, MS 2010



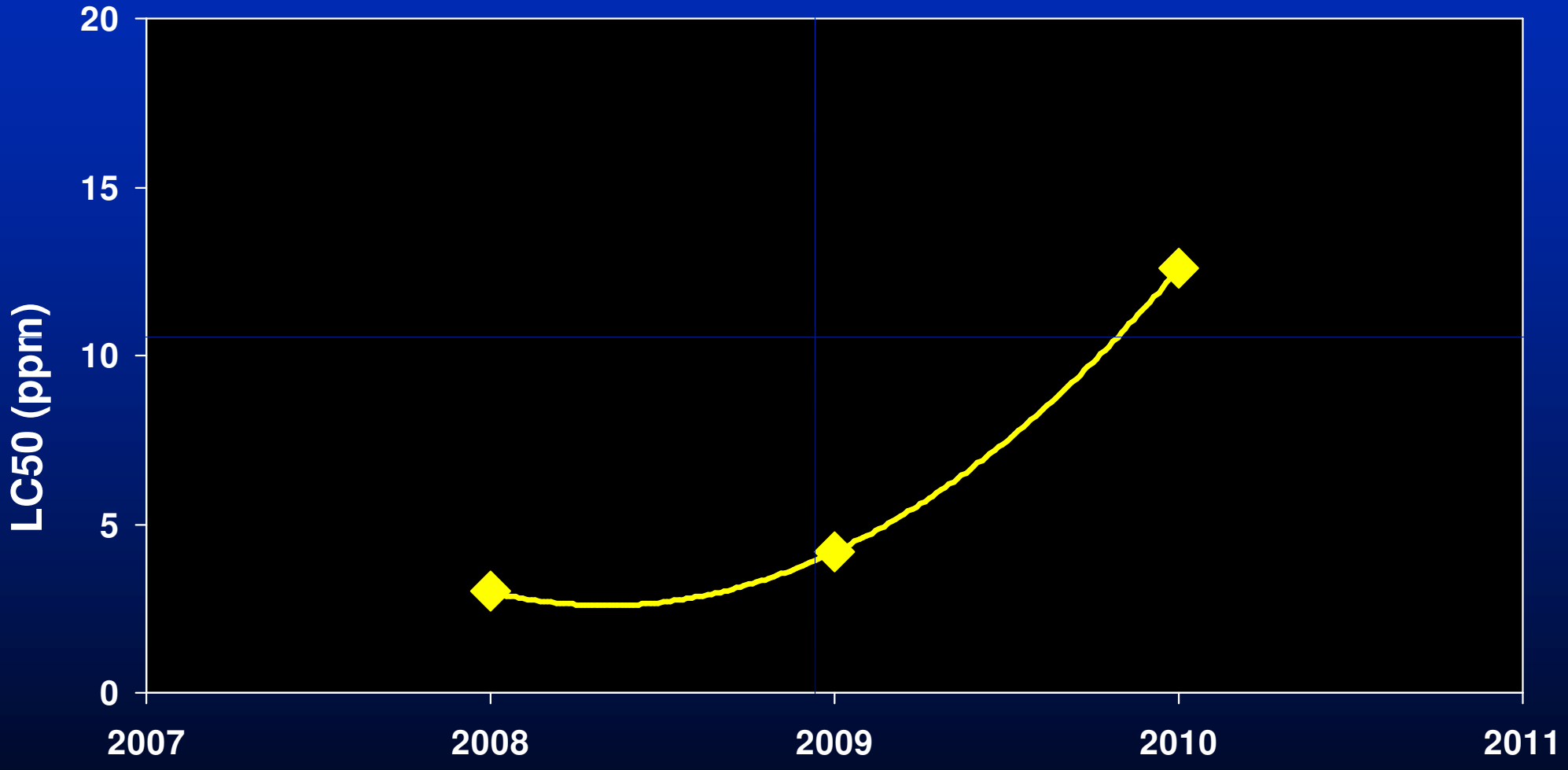
Stink Bug Management with Transform

Cotton



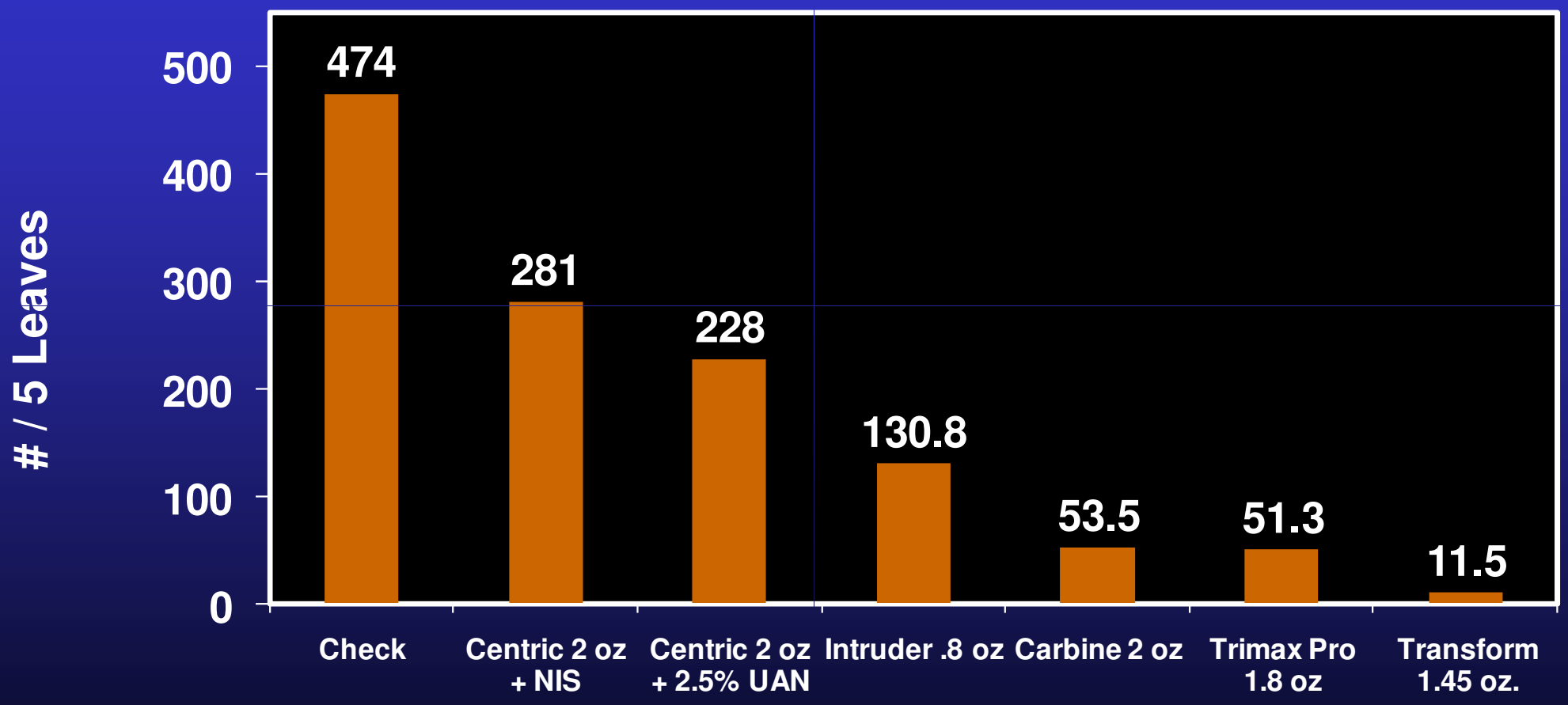
2010

Susceptibility of Cotton Aphids from Non-Treated Fields to Thiamethoxam



Foliar Aphid Control - 2008

Angus Catchot - Grenada, MS



Centric LC50 = 10.71 at 72h

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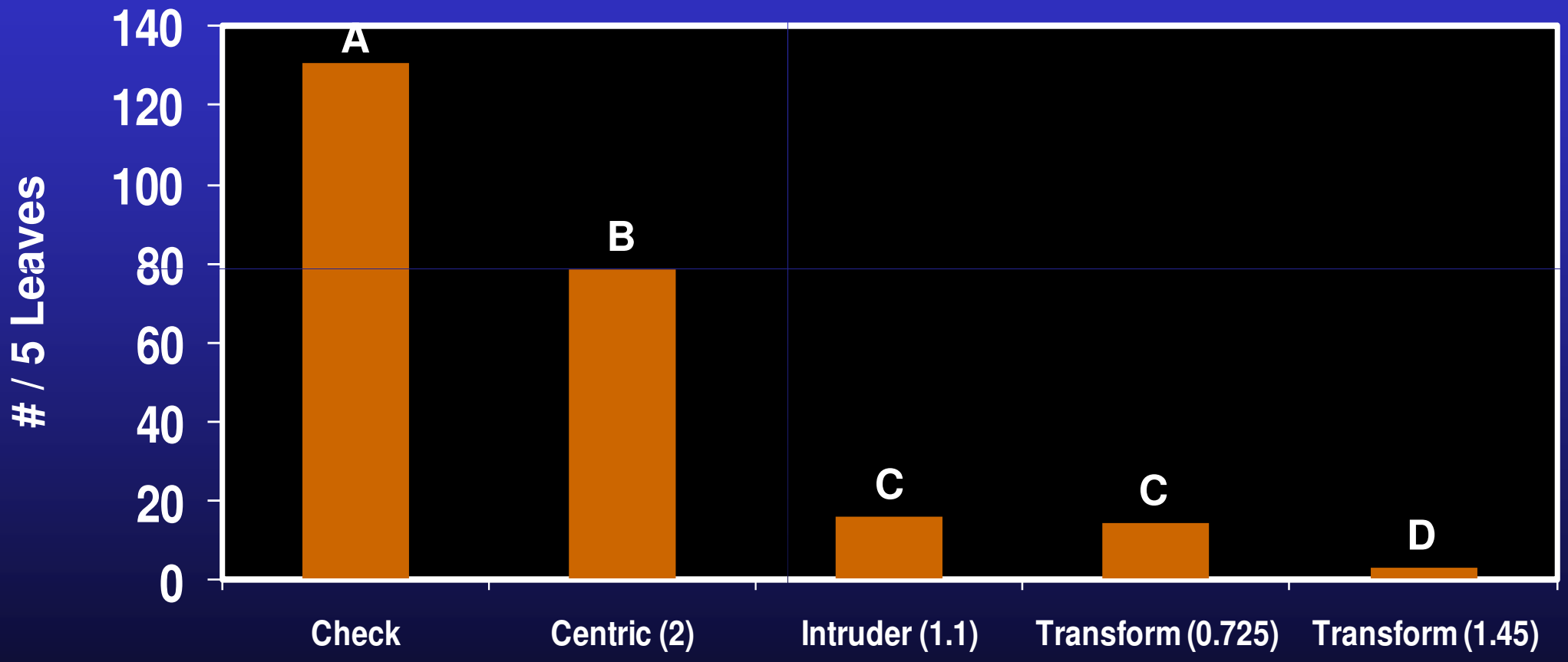
Foliar Aphid Control - 2010

Stoneville, MS



Centric LC50 = 17.71 at 72h

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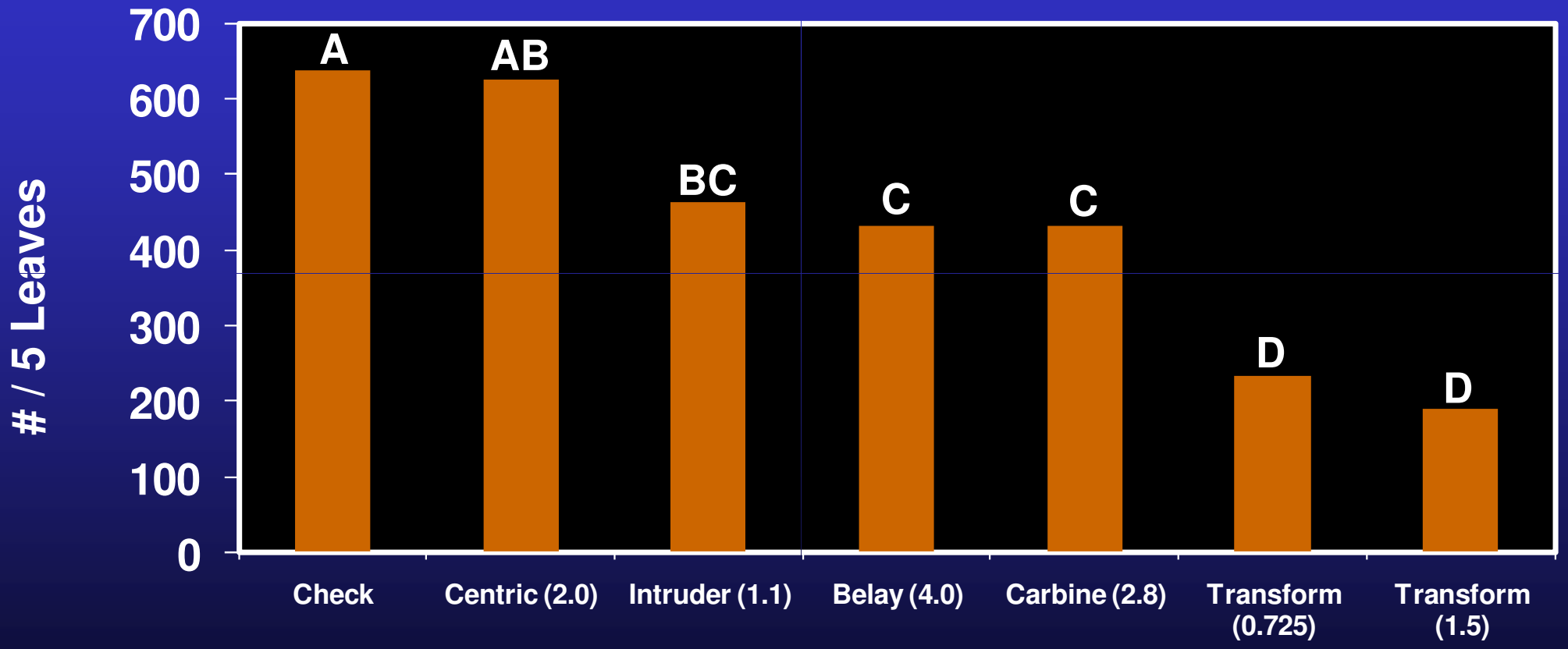
Foliar Aphid Control - 2010

Angus Catchot - Grenada, MS



Centric LC50 = 20.9 at 72h

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Insecticide Rotation Strategy

Neonicotinoid Seed Trt.

1-2 Applications

1-3 Applications

Do not spray (dimethoate)

Neonicotinoids Carbine

Organophosphates OP + Pyrethroid Diamond

Organophosphates Neonicotinoids + Pyrethroid Diamond

DO NOT SPRAY

Planting

1st Square

1st Flower

Peak Flower

Cutout

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Summary and Conclusions

- Standard insecticides do not provide the same level of control they once did.
- Tank mixes and pre-mixes are important.
- Crop maturity impacts tarnished plant bug management.

Summary and Conclusions

- New information about Diamond, ULV Malathion, and Transform will help.
- An integrated approach that relies on many different tactics in addition to chemical insecticides will be the only way to economically and effectively manage tarnished plant bugs.

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