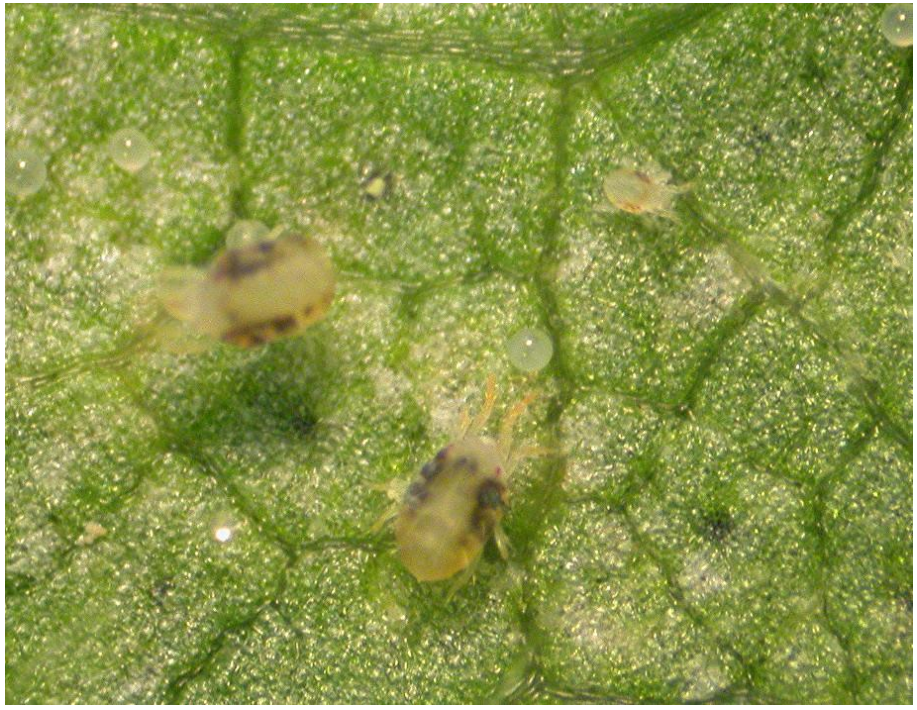
Terminating Spider Mite Applications in Cotton



MSEWG
Mid-South Entomologist Working Group

cotton

Team Members

Mississippi

Gore / Cook

Catchot / Smith / Scott Musser

Jackson

Arkansas

Akin

Lorenz

Studebaker

Missouri

Tindall

Louisiana

Leonard

Tennessee

Stewart

Part of a regional effort to better understand spider mites and effects on yield

Objectives

1) Standardize the evaluation of miticides

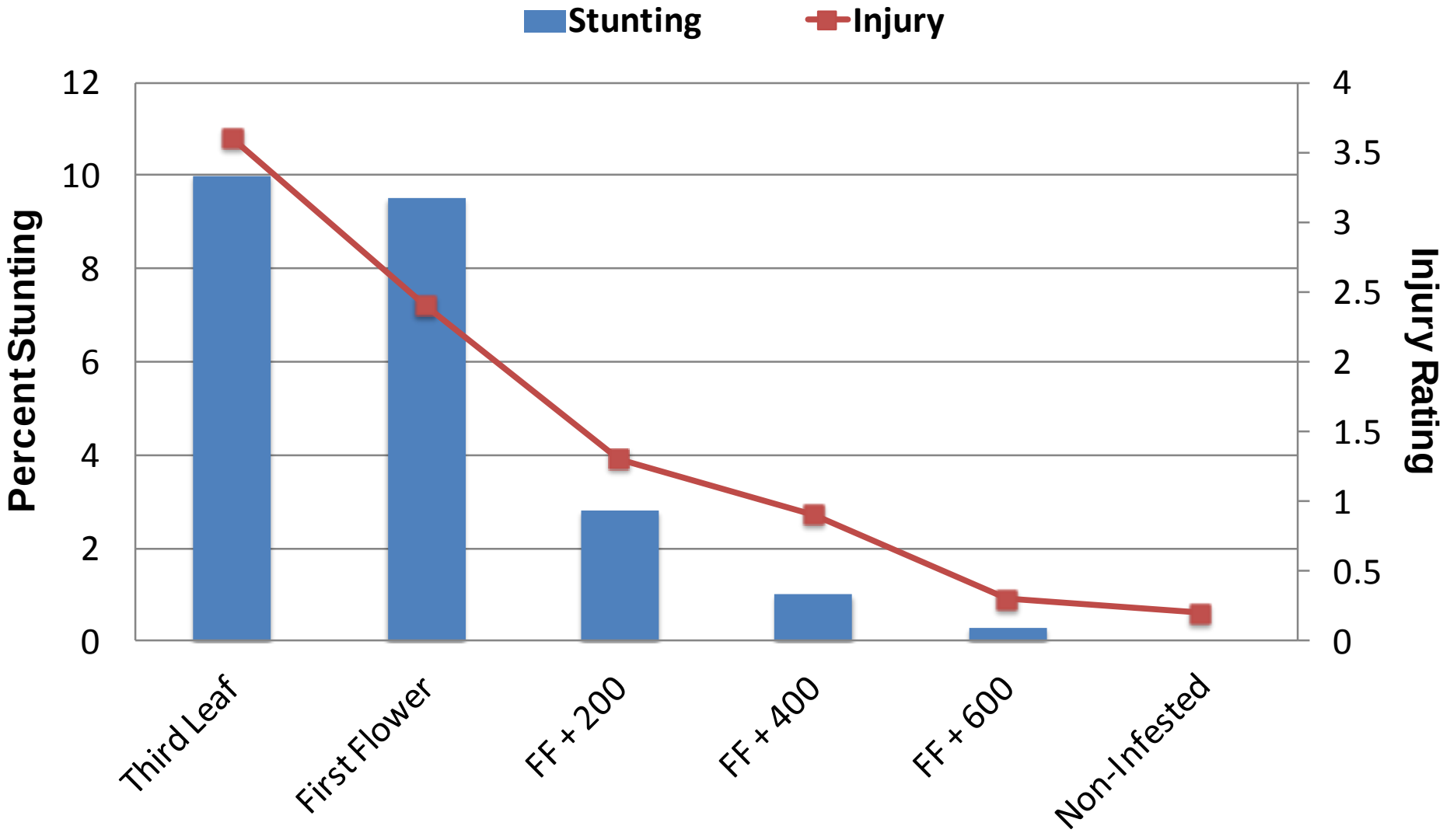
2) Quantify yield losses at different infestation timings

3) Determine the impact of mites on different cotton varieties

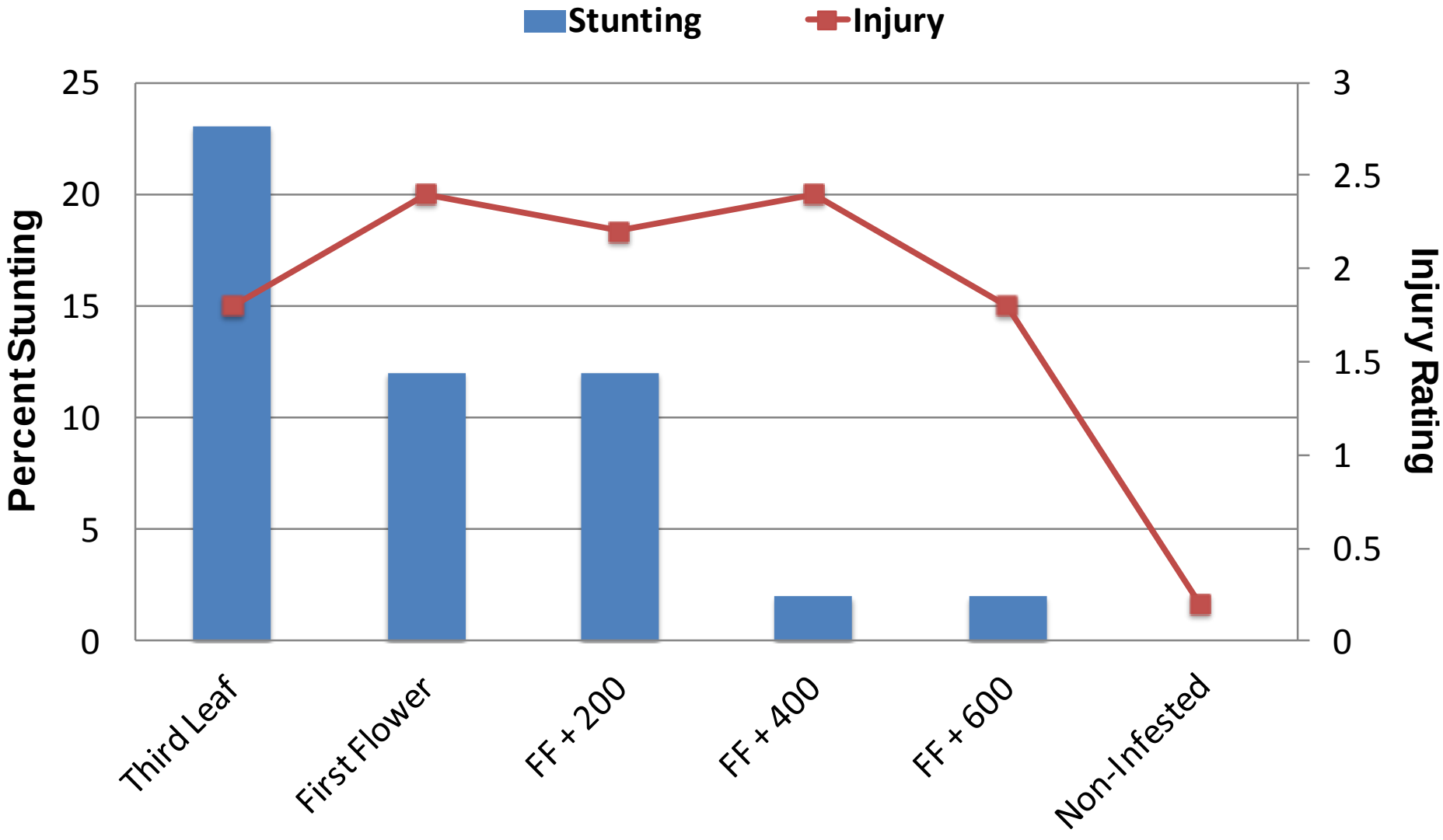
The Protocol
Infestation Timing*Yield

- RCBD, 4 Reps, 4 rows X 15 ft plots
- Only the two center rows infested
- Record stunting and injury at various timings
- Treatments included:
  - Noninfested
  - 3rd True Leaf
  - First Flower
  - First Flower + 200 HU
  - First Flower + 400 HU
  - Etc.

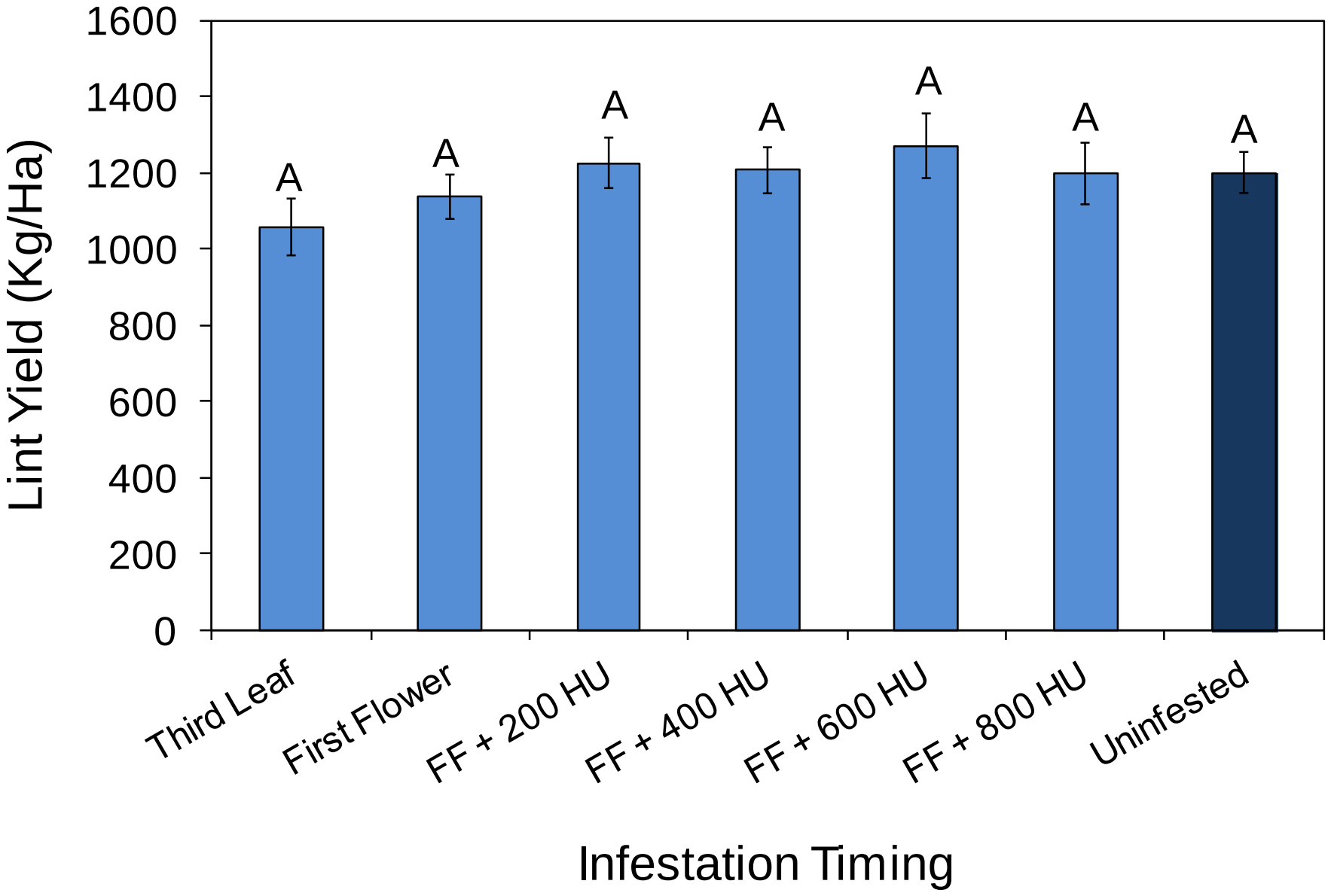
Impact of Spider Mites on Cotton Tennessee – 7/22/2010



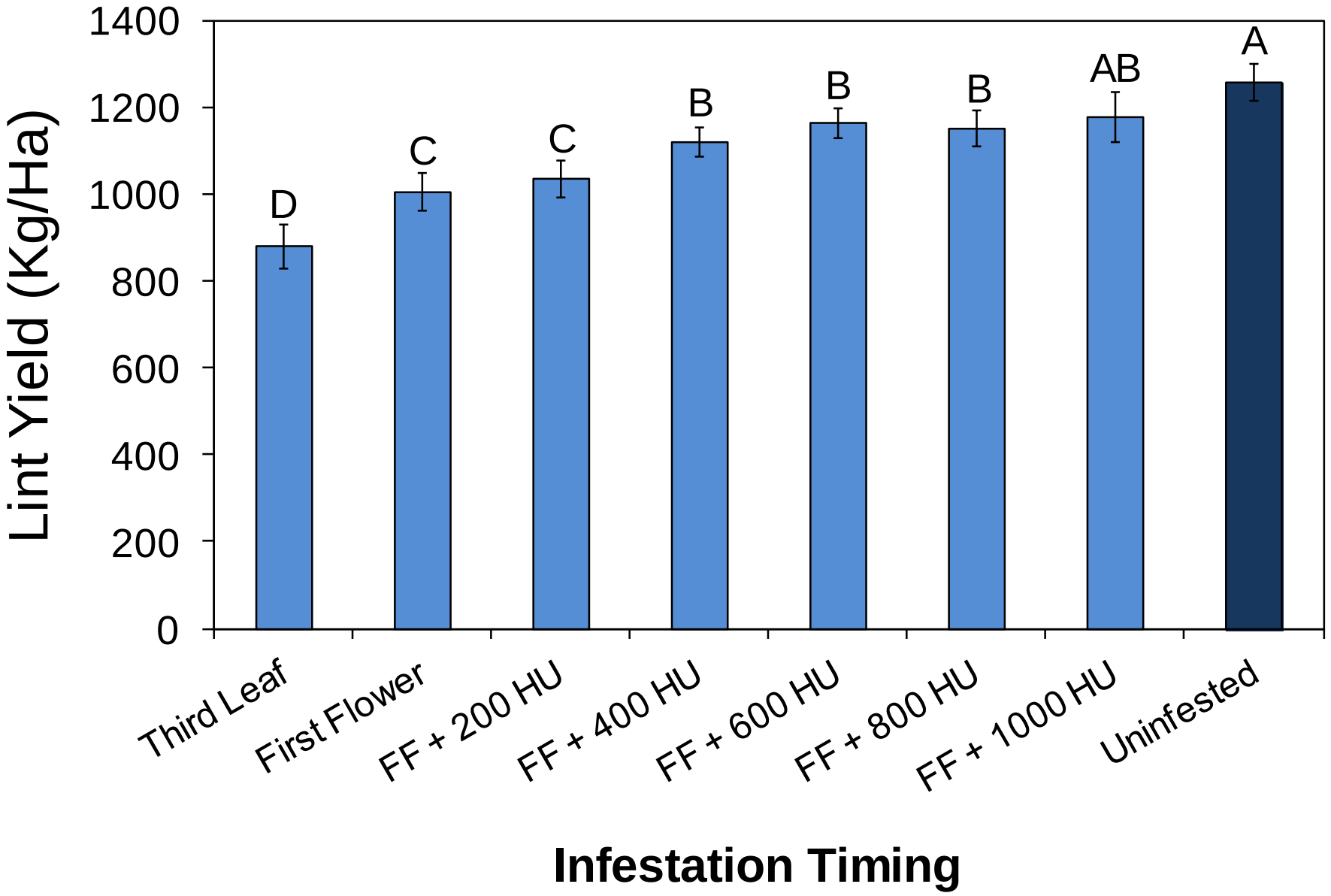
Impact of Spider Mites on Cotton Louisiana – 8/26/2011



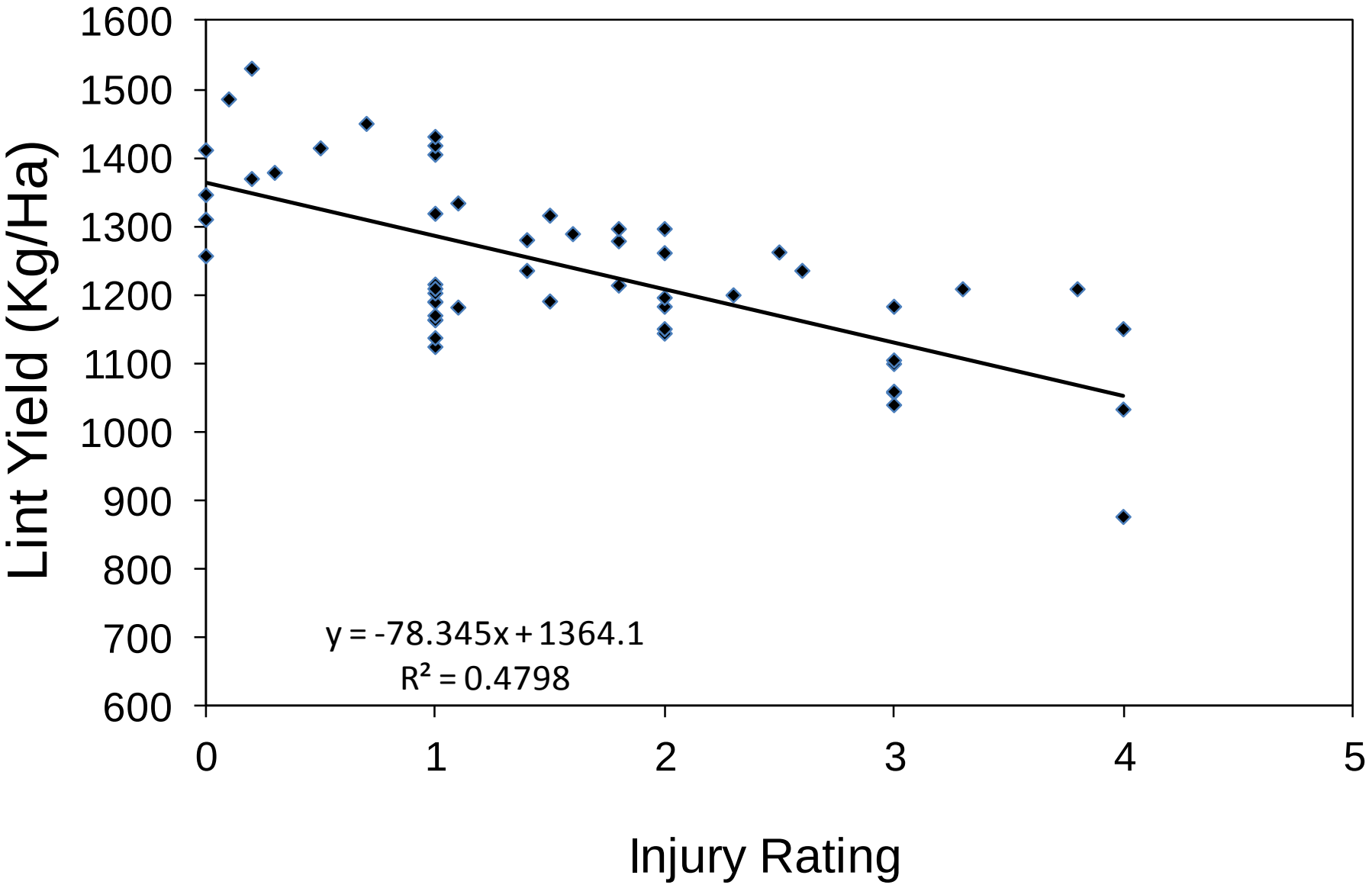
Evaluation of Yield Losses by Spider Mites 2009-2011 – Poor Infestation (9)



Evaluation of Yield Losses by Spider Mites 2009-2011 – Good Infestation (7)



Correlation Between Injury Rating and Yield 2009-2011

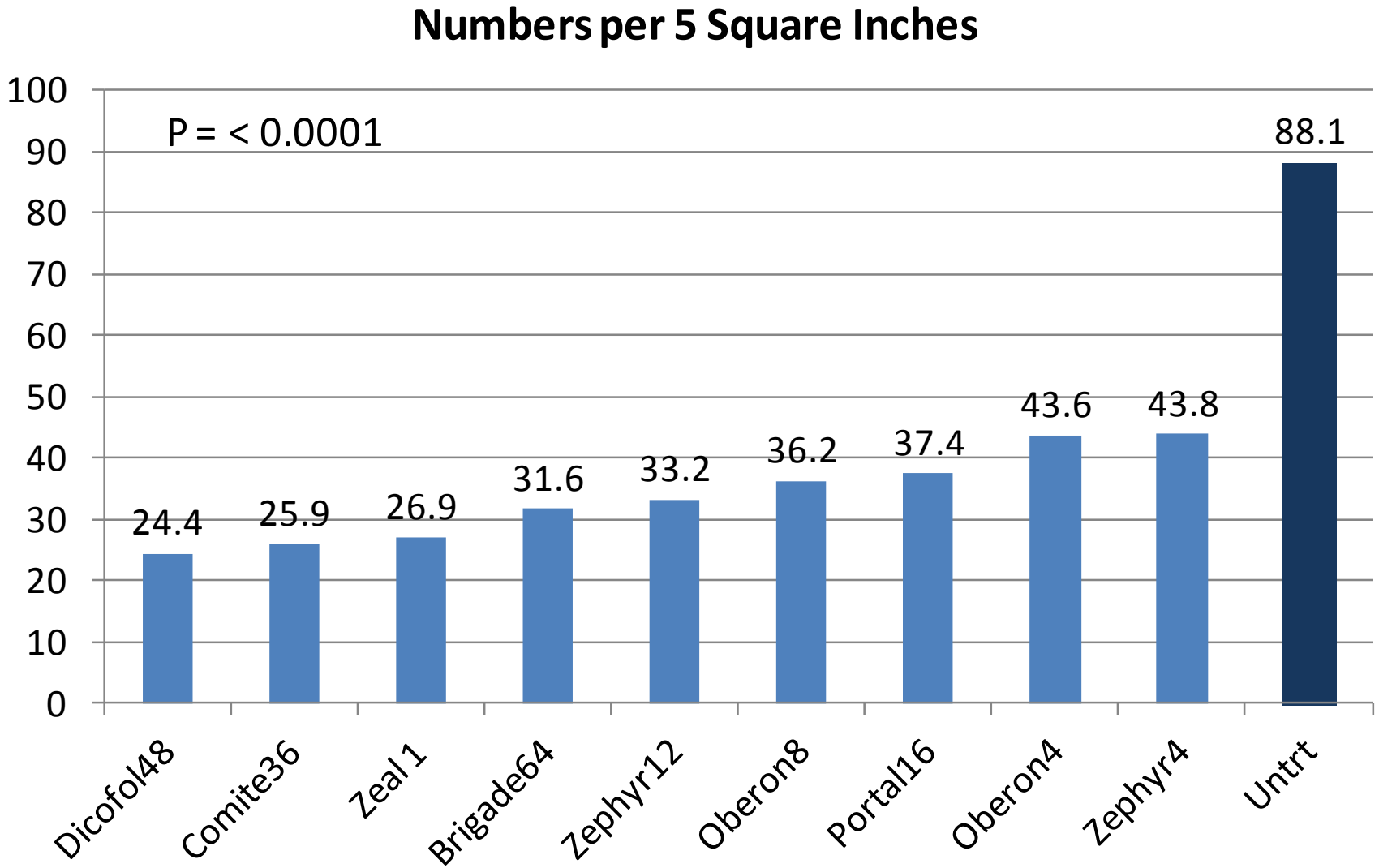


Standardized Efficacy Trial Treatments

Treatment	Rate (oz/acre)
Brigade 2E	6.4
Dicofol 4E	48
Comite II	36
Portal 0.4E	16
Zeal 72WSP	1
Zephyr 0.15E	4
Oberon 4F	4
Zephyr 0.15 E	12
Oberon 4F	8
Untreated	---

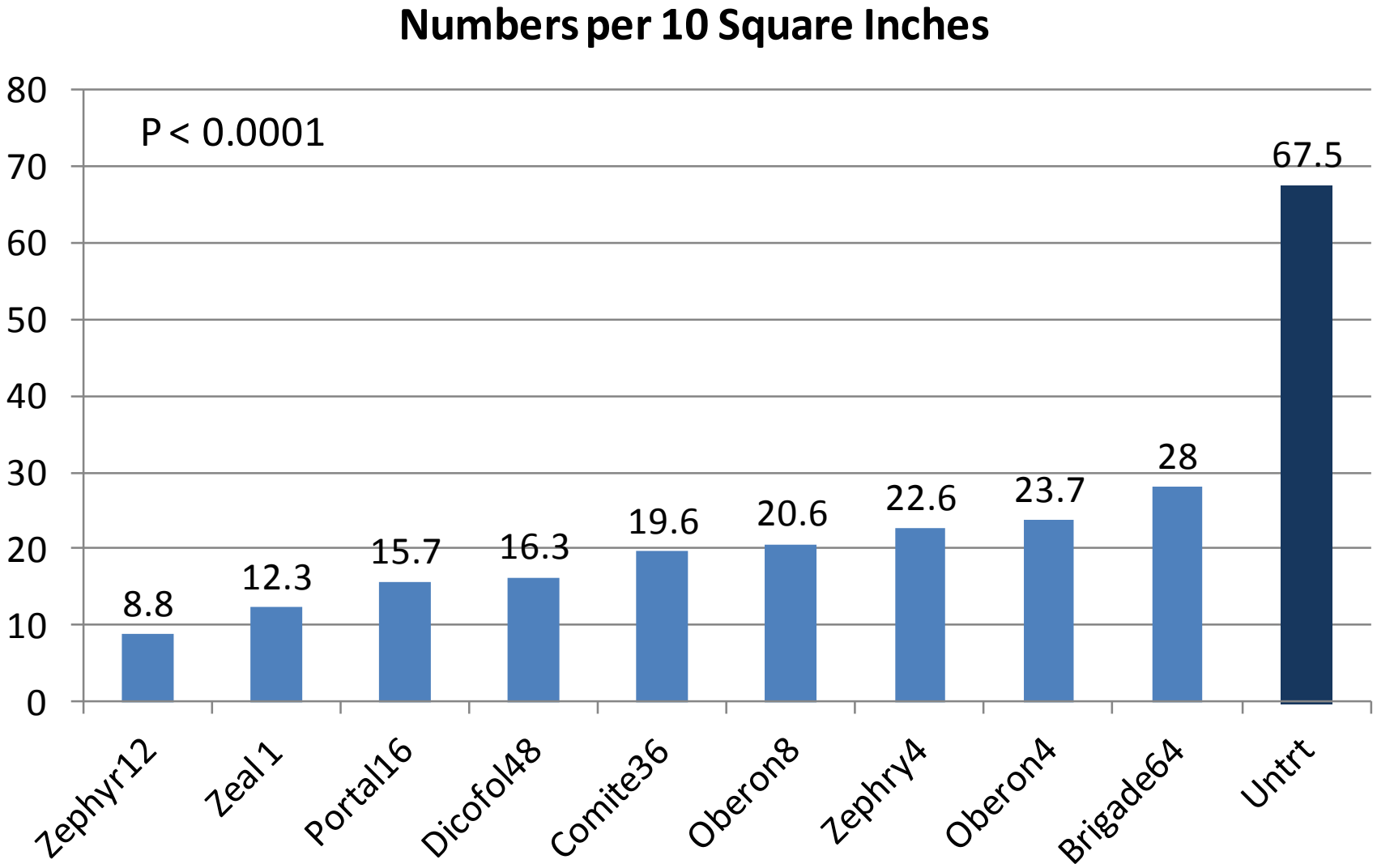
Spider Mites 3-5 DAT

Eleven Locations (2009-2010)



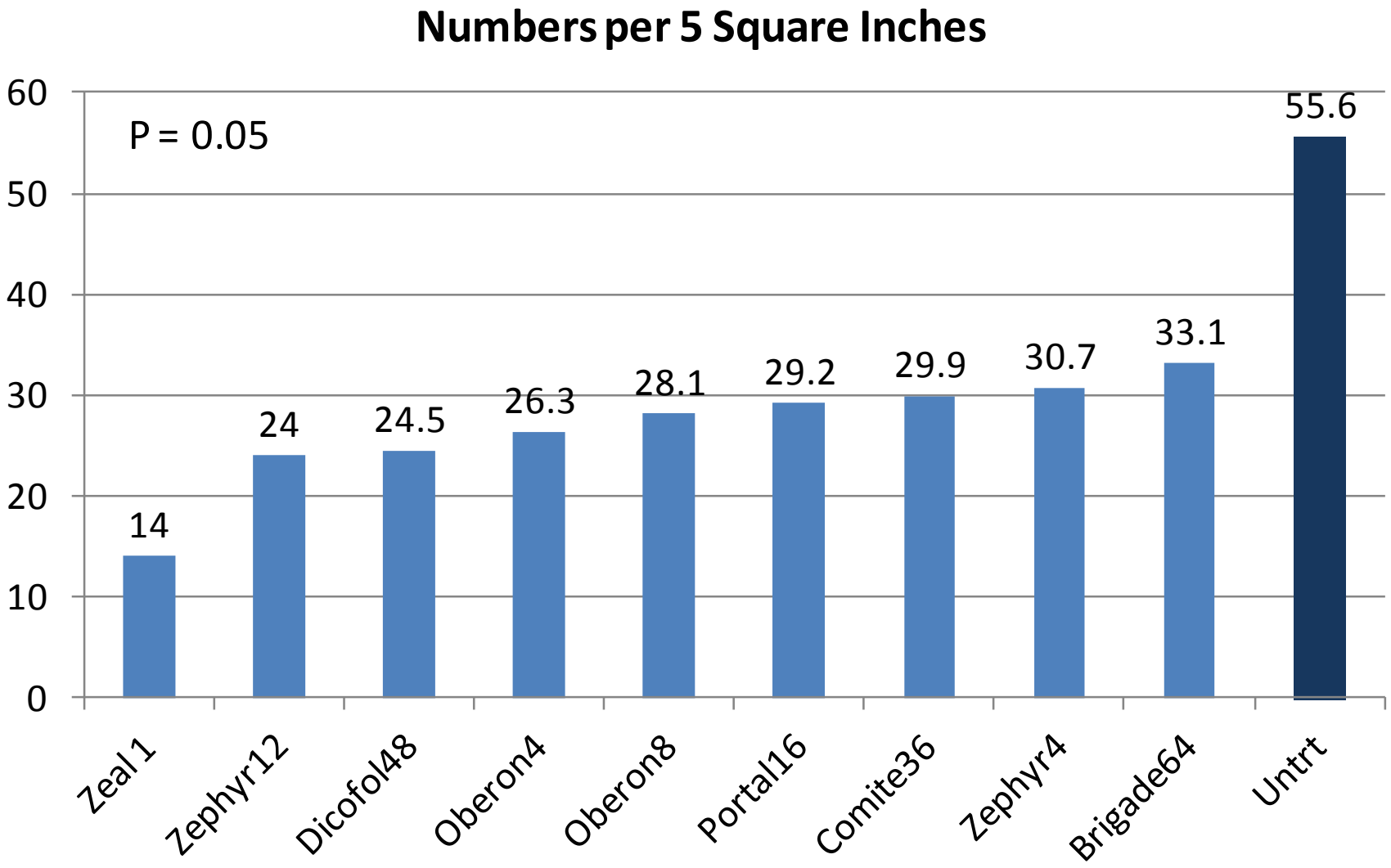
Spider Mites 7-9 DAT

Eleven Locations (2009-2010)



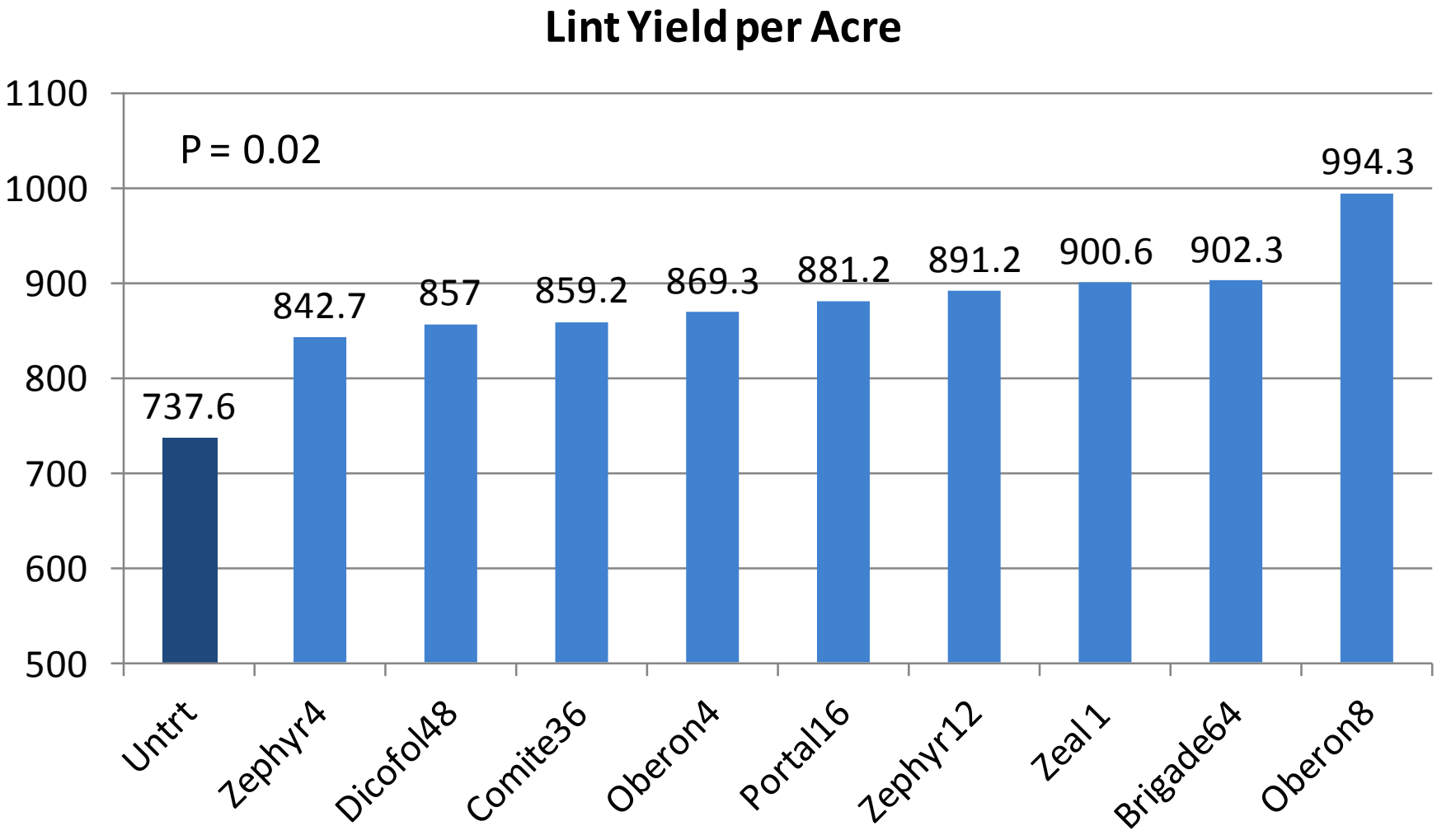
Spider Mites 10-14 DAT

Six Locations (2009-2010)



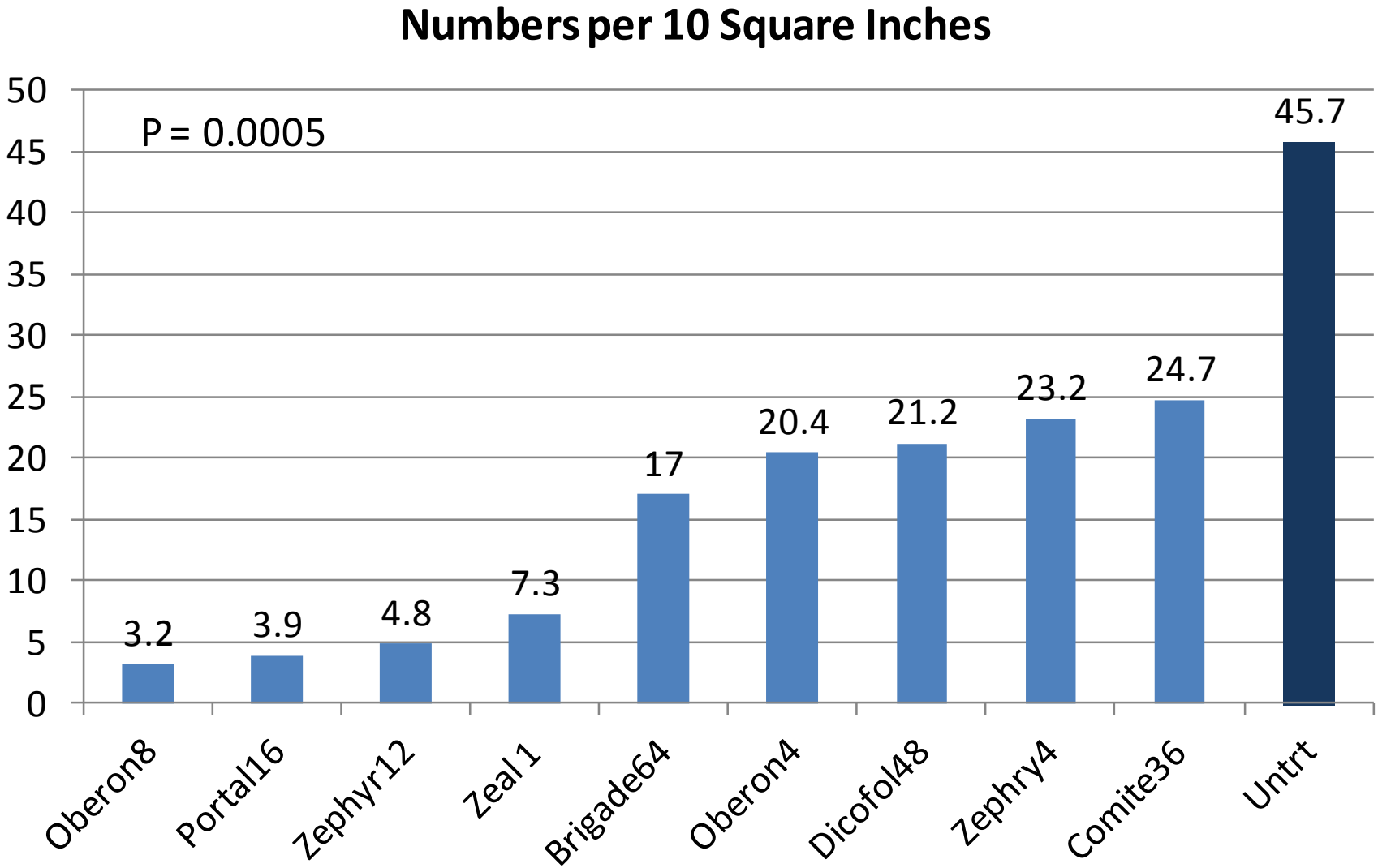
Yield

Five Locations (2009-2010)



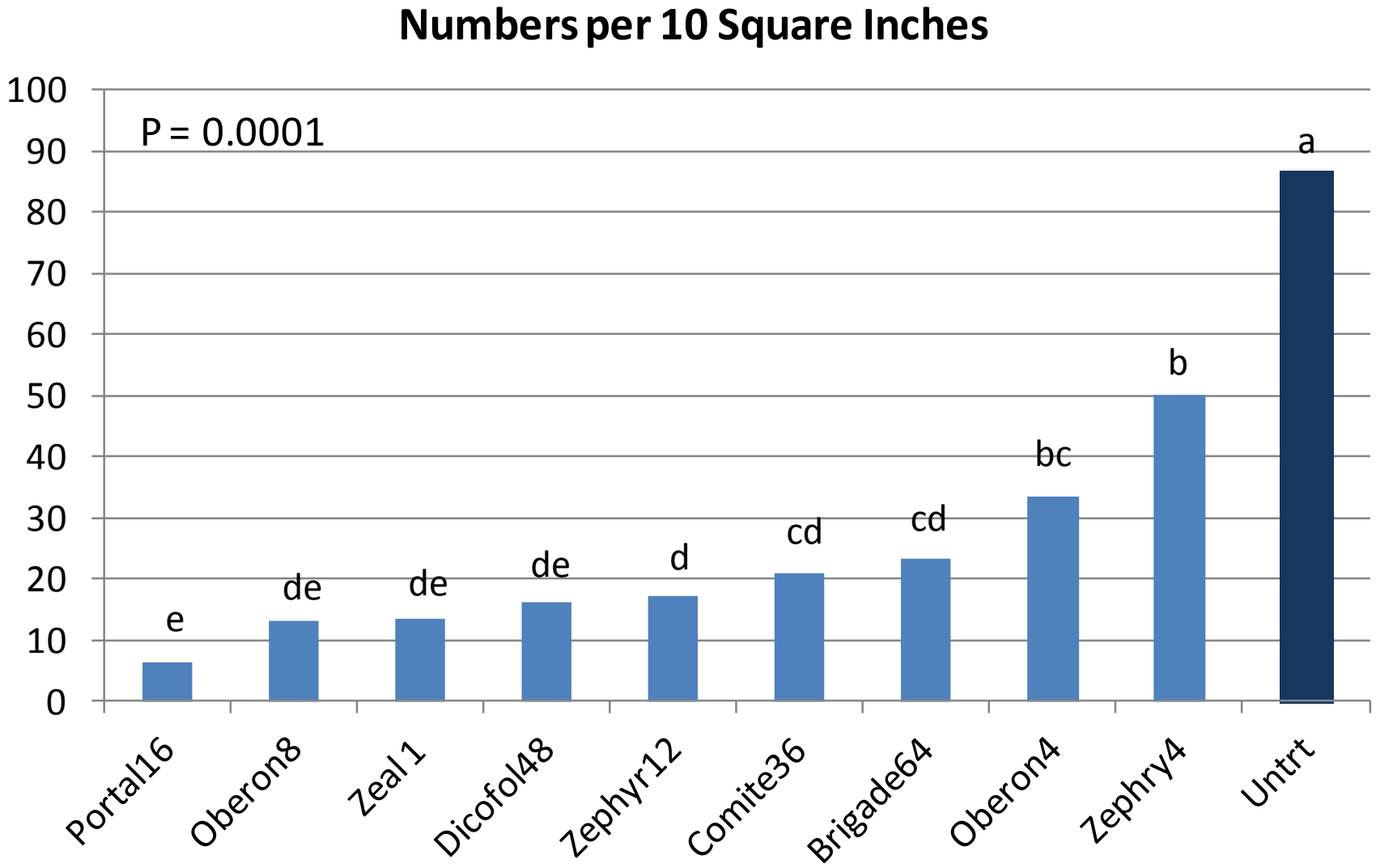
Spider Mites 8 DAT

Tennessee (2009)



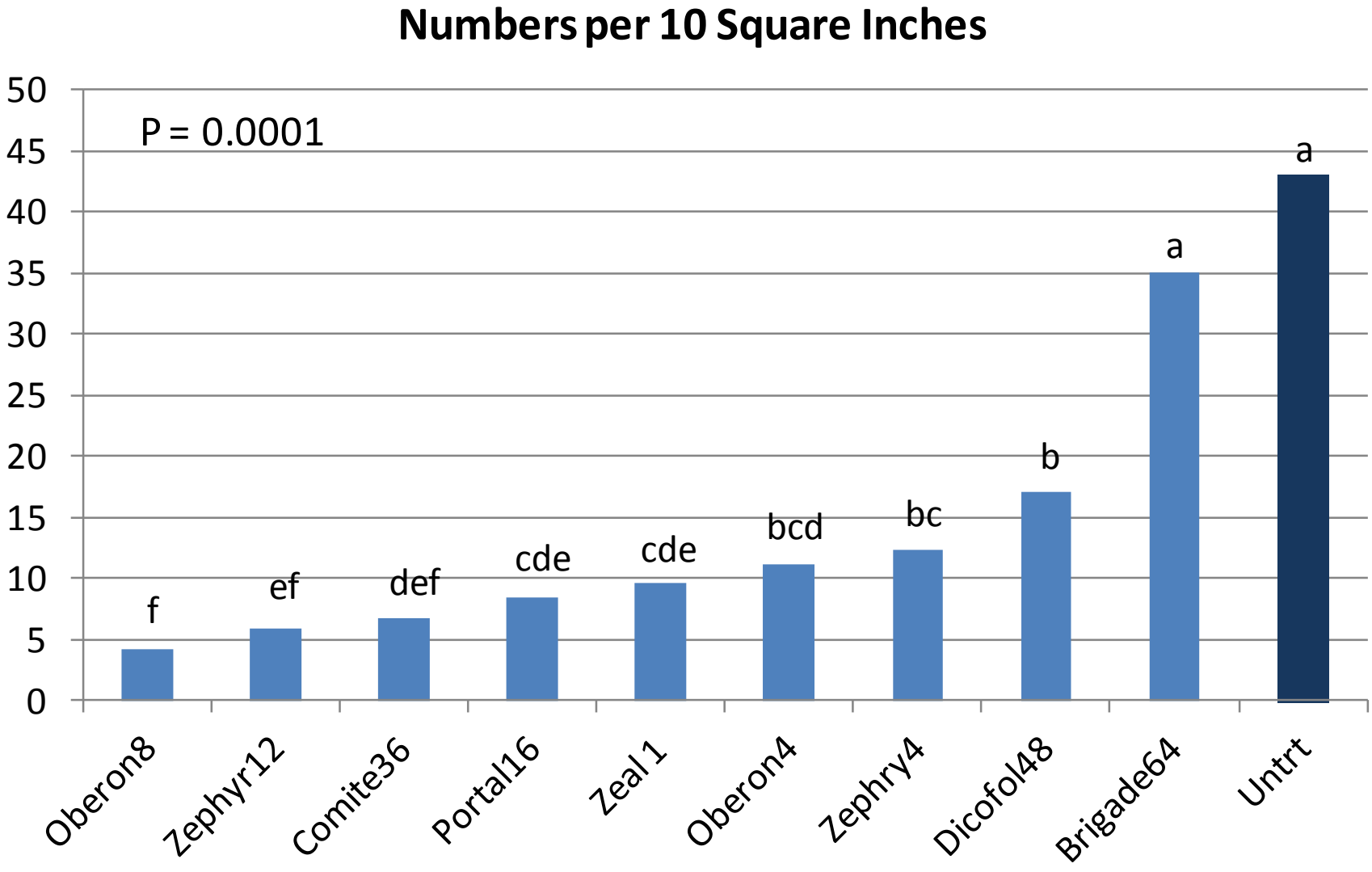
Spider Mites 5 DAT-A

Mississippi (2010)



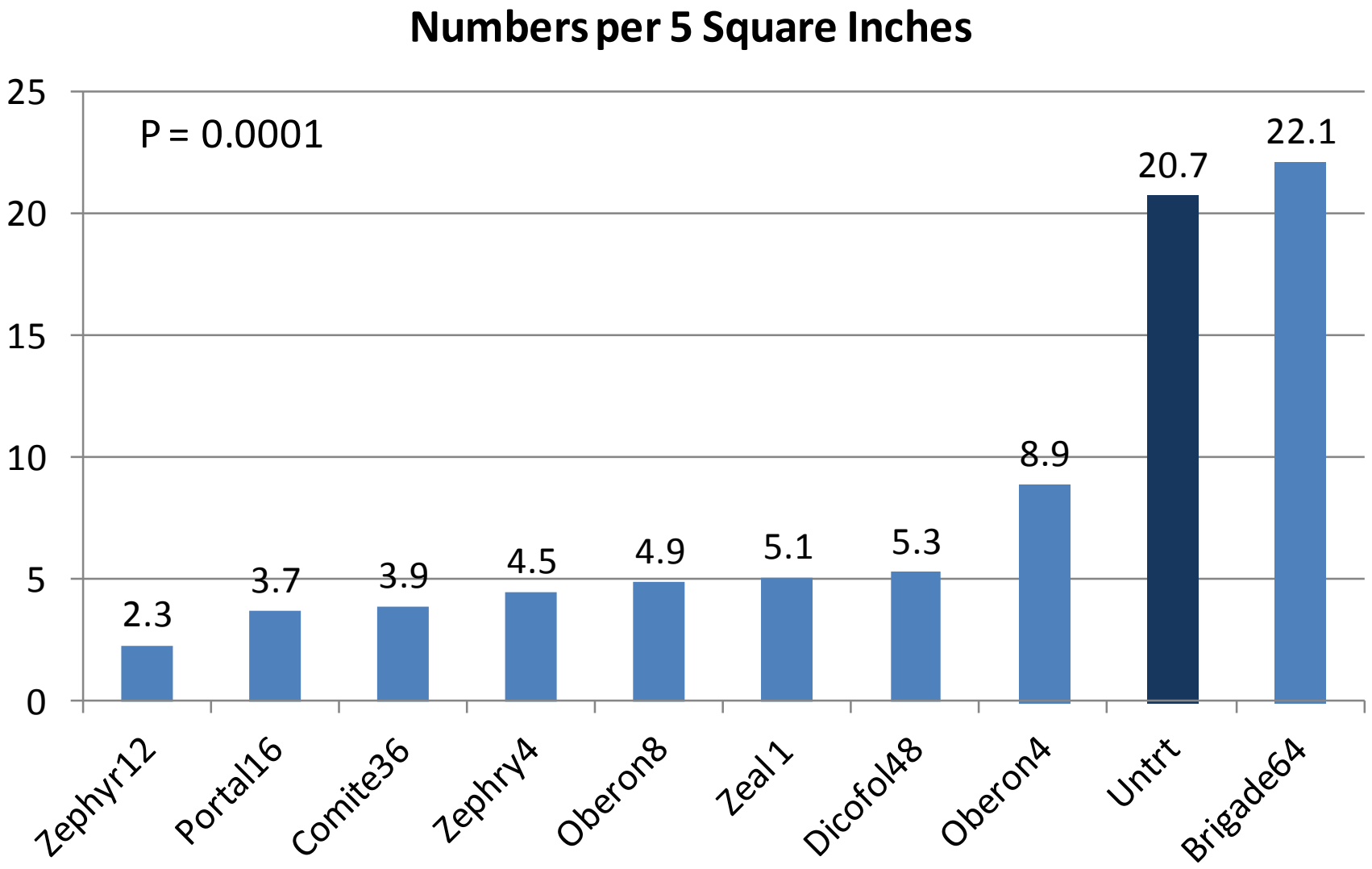
Spider Mites 12 DAT-A

Mississippi (2010)



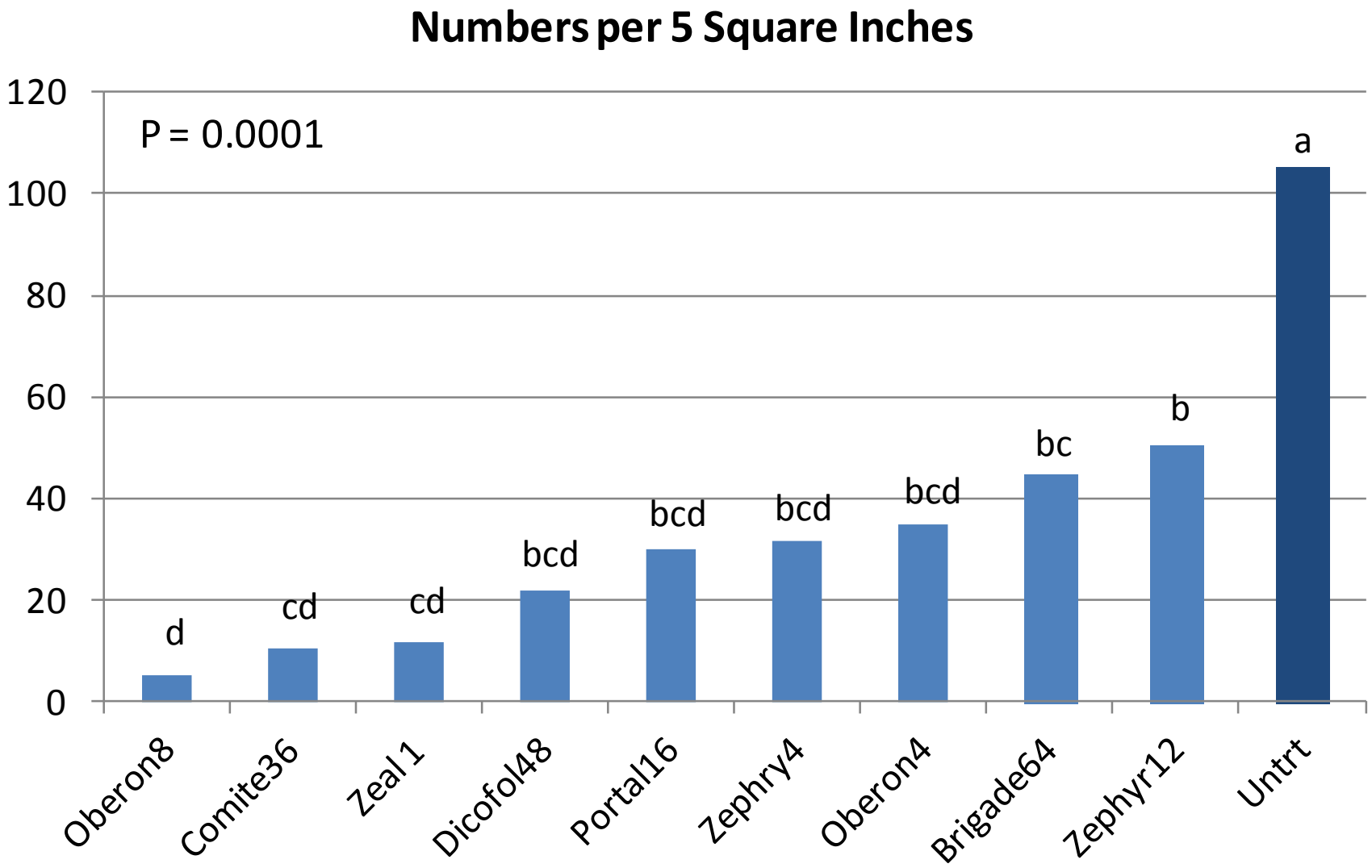
Spider Mites 4 DAT-B

Mississippi (2010)



Spider Mites 4 DAT

Arkansas (2010)



Summary and Conclusions
Standardized Efficacy

- All miticides/insecticides provided control when averaged across locations.
- Some of the “older” miticides were less consistent.
- Newer miticides provided better control, especially at higher rates.

Summary and Conclusions
Infestation Timing*Yield

- Early infestations significantly stunted plants
- Spider mites caused significant yield losses up to 800 HU past first flower
- No significant yield losses were observed at ≥1000 HU

Summary and Conclusions
Infestation Timing*Yield

- Cotton should be protected at least until 1000 heat units past first flower

- Approximately 35-45 days


cotton


MSEWG
Mid-South Entomologist Working Group