

Terminating Spider Mite Applications in 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

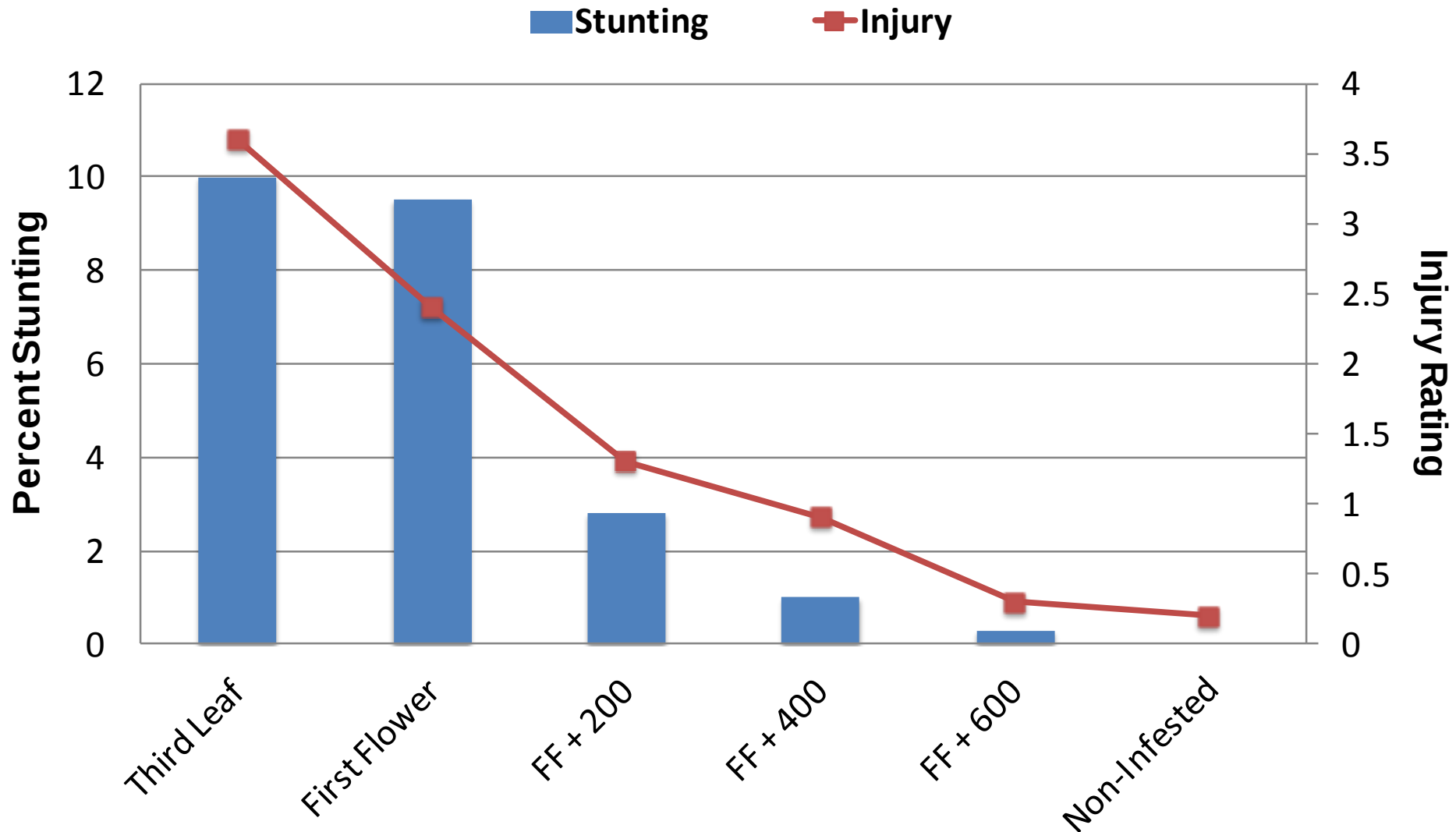
Infestation Timing*Yield



- 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.

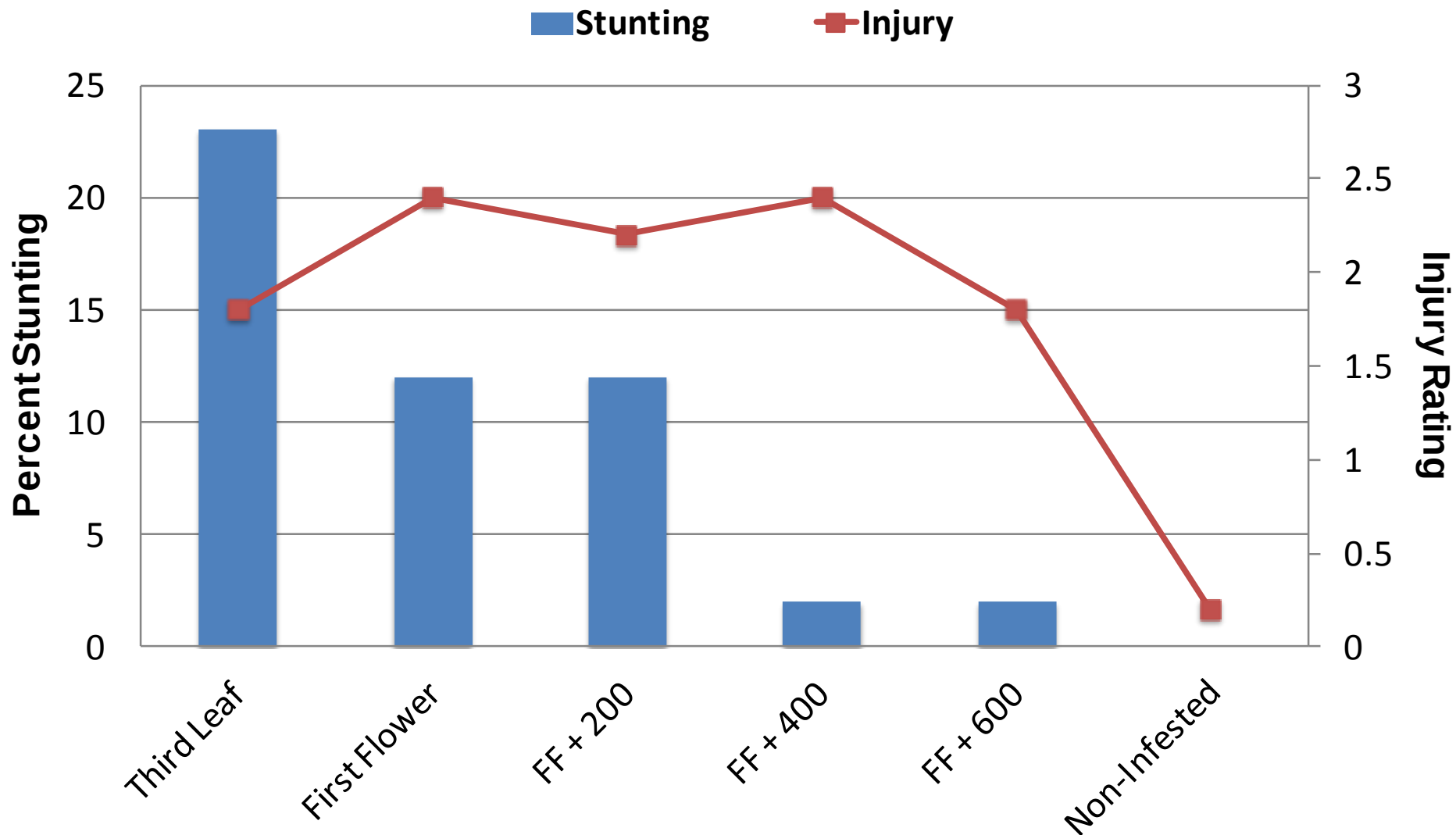


Impact of Spider Mites on Cotton Tennessee – 7/22/2010



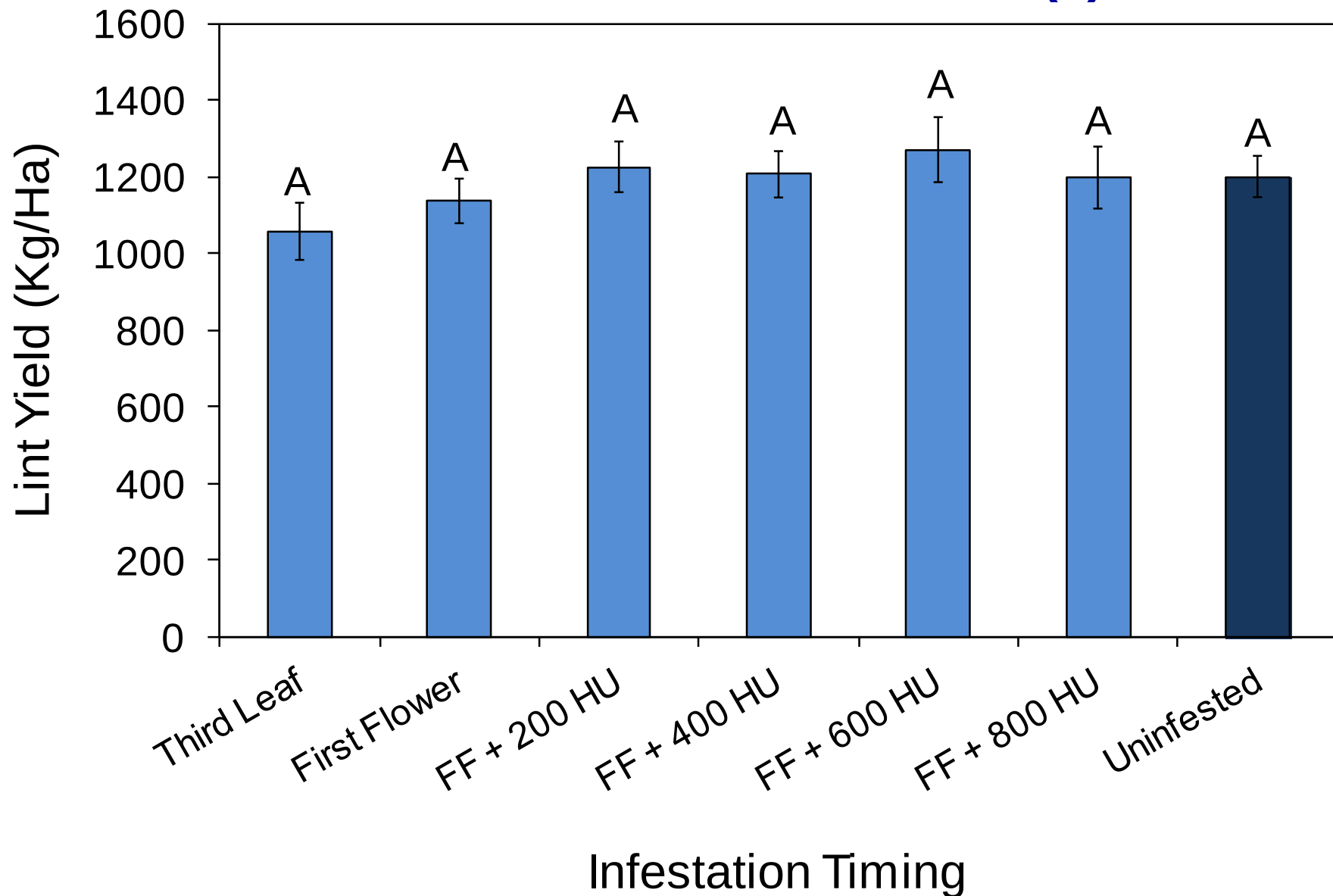


Impact of Spider Mites on Cotton Louisiana – 8/26/2011



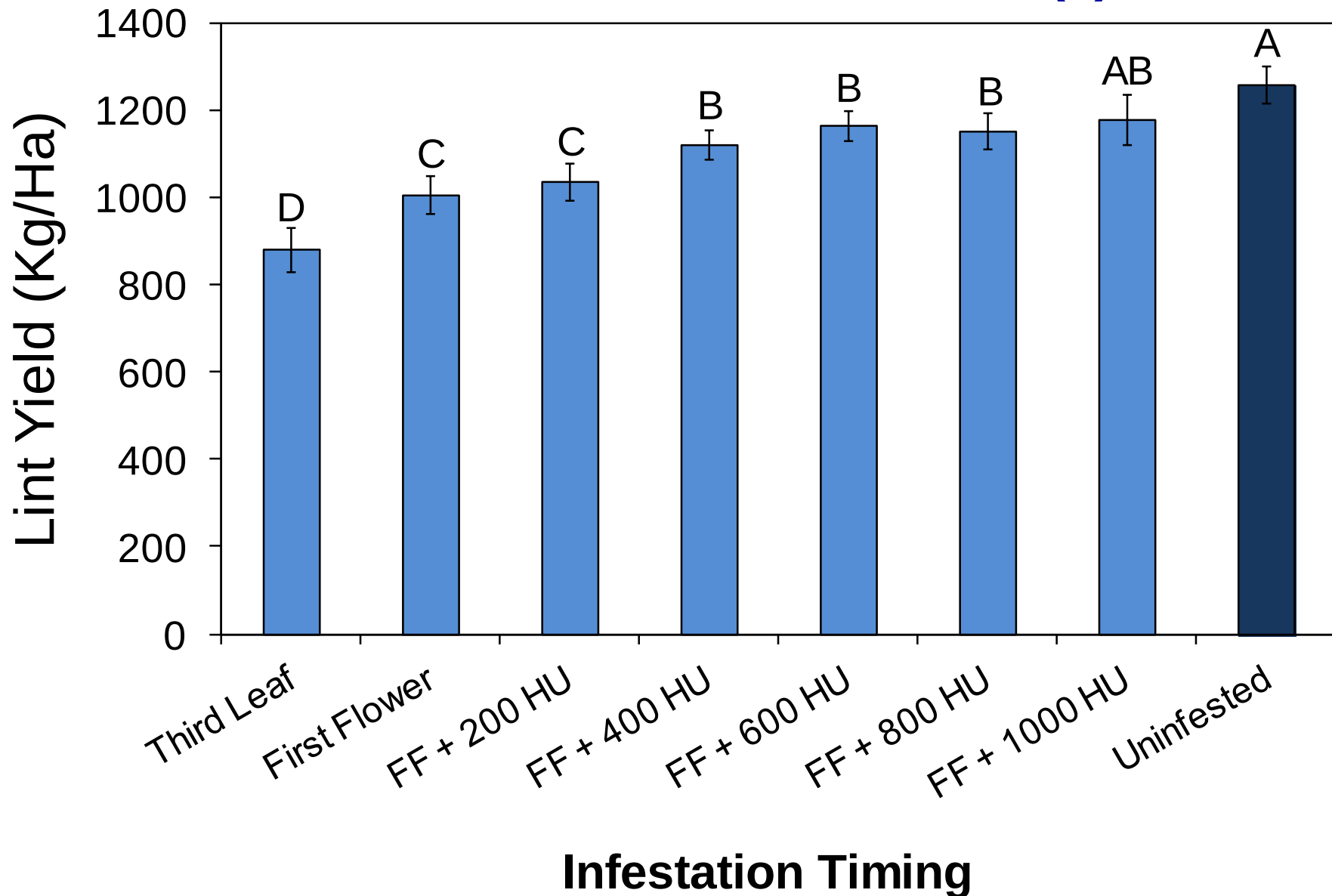


Evaluation of Yield Losses by Spider Mites 2009-2011 – Poor Infestation (9)



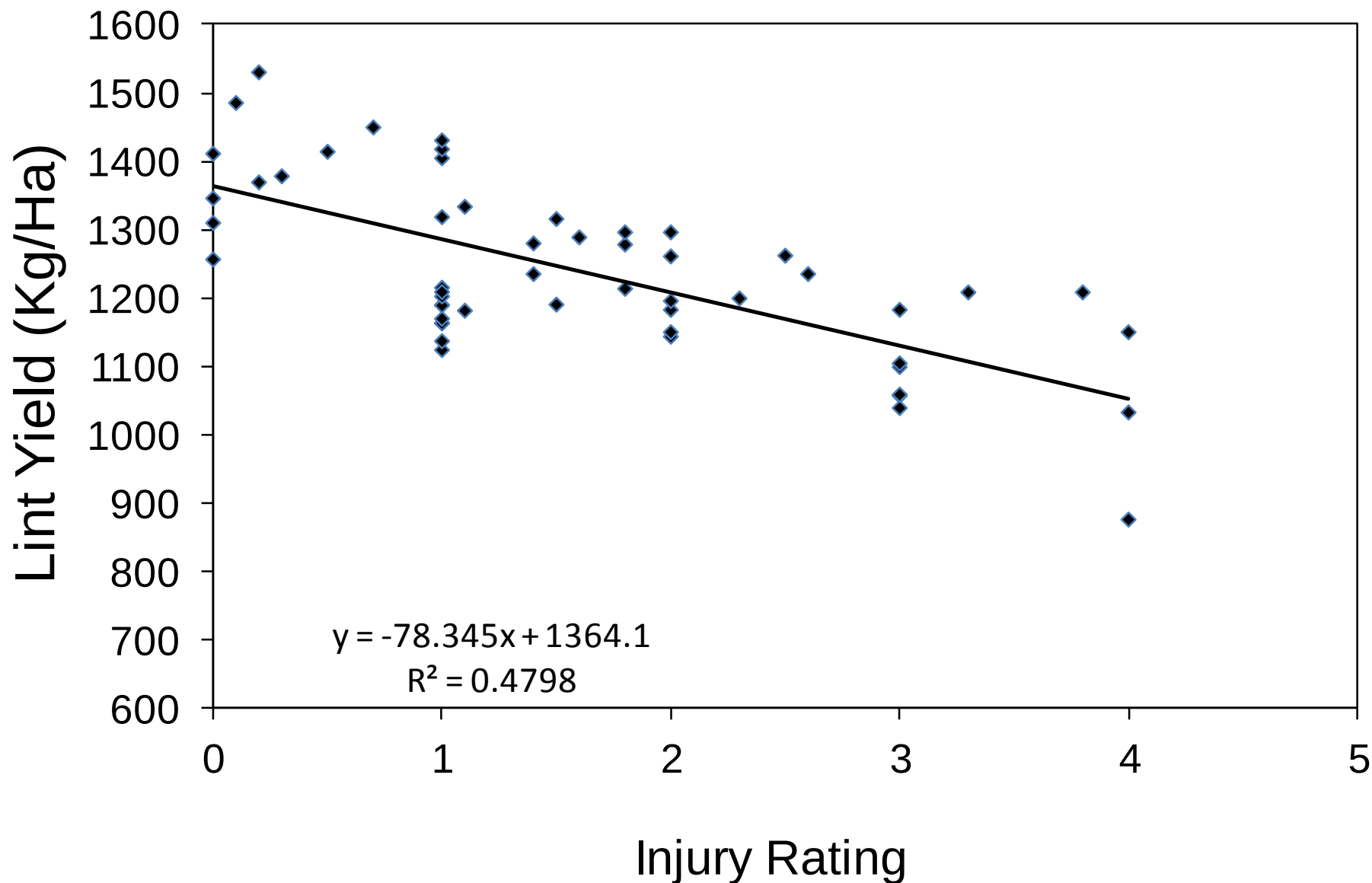


Evaluation of Yield Losses by Spider Mites 2009-2011 – Good Infestation (7)





Correlation Between Injury Rating and Yield 2009-2011





Standardized Efficacy Trial Treatments

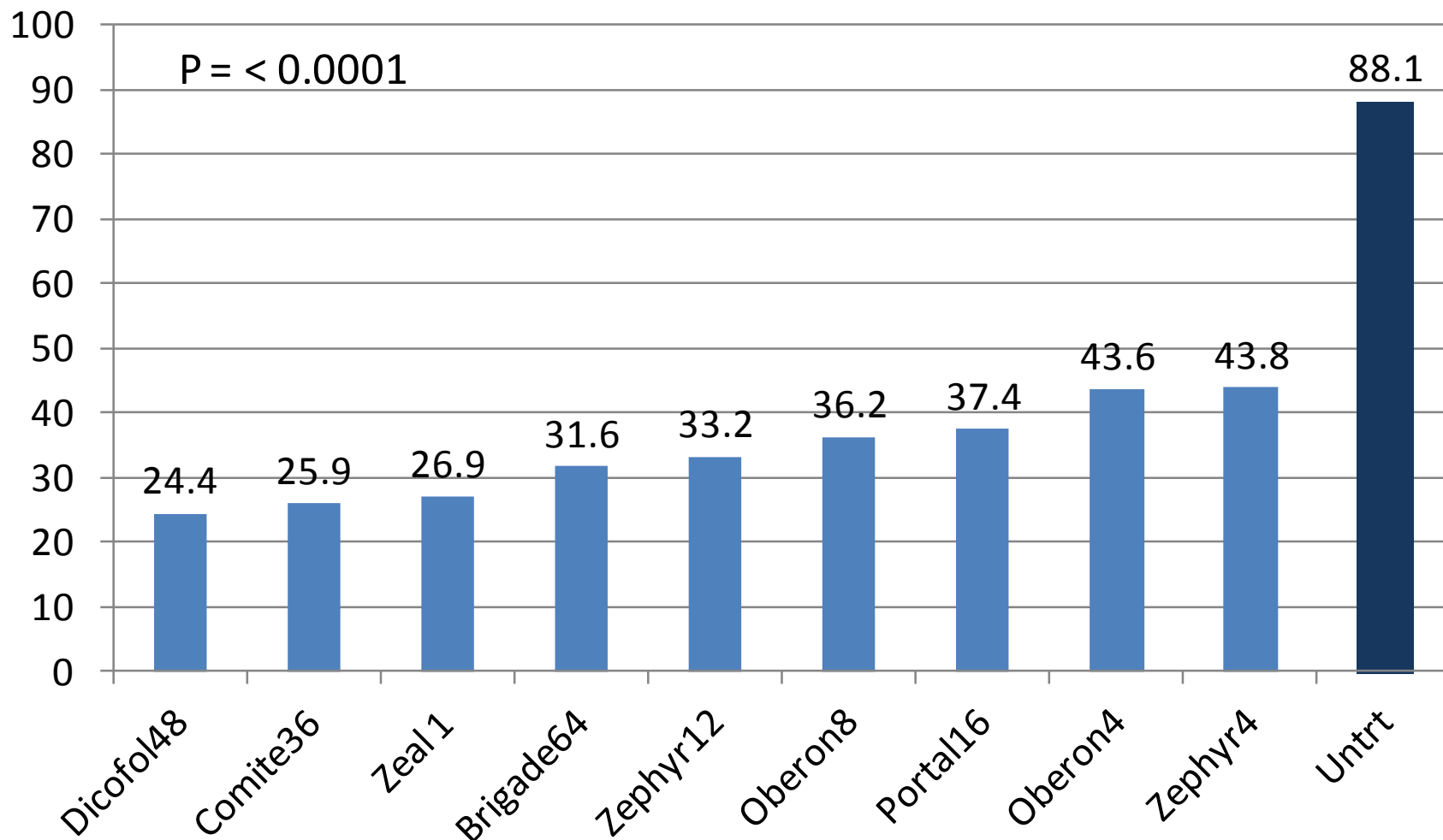


Treatment	Rate (oz/acre)
Brigade 2E	6.4
Dicofol 4E	48
Comite II	36
Portal 0.4E	16
Zeal 72WSP	1
Zephyr 0.15E	4
Oberon 4F	4
Zephyr 0.15 E	12
Oberon 4F	8
Untreated	---

Spider Mites 3-5 DAT

Eleven Locations (2009-2010)

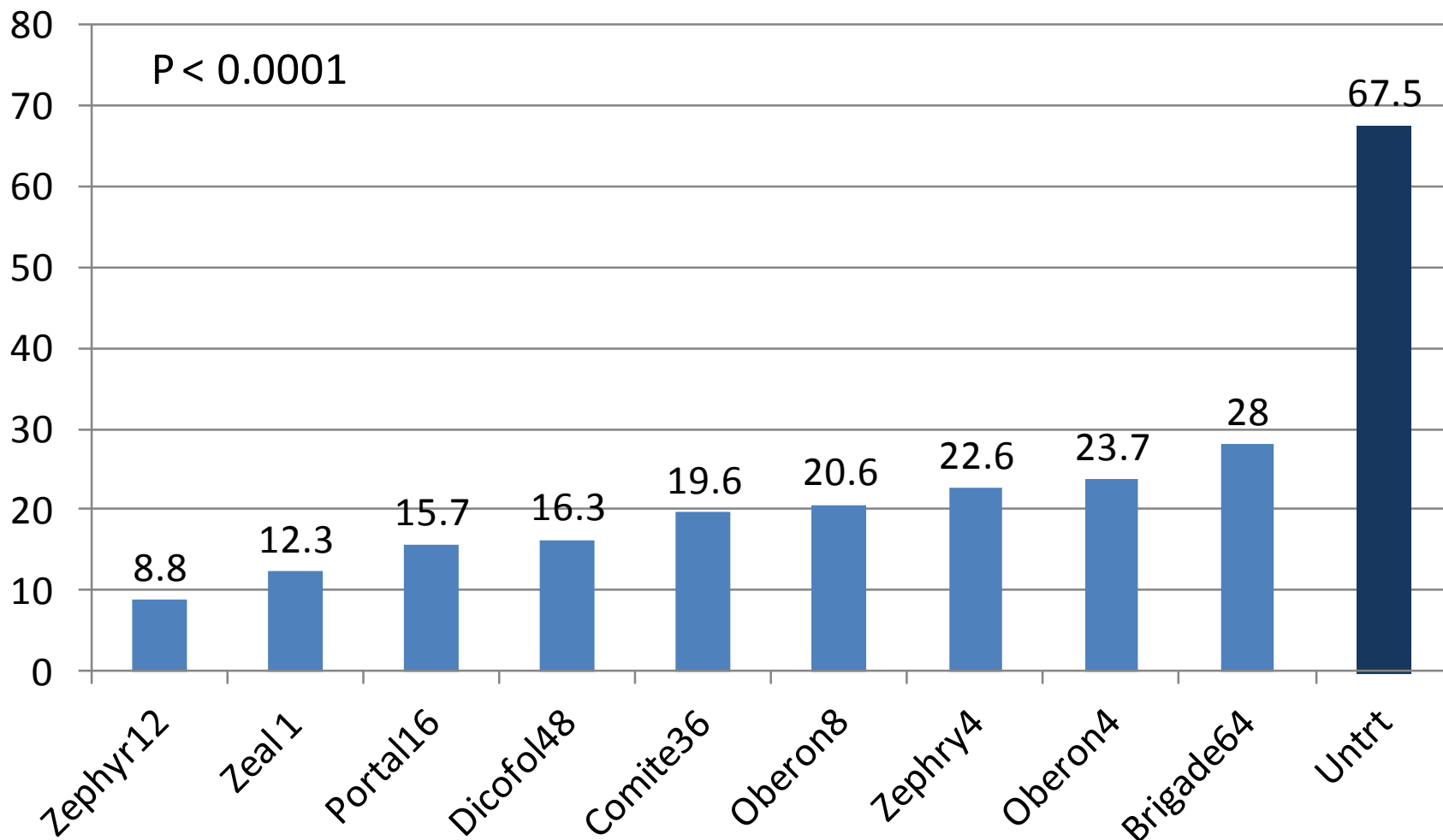
Numbers per 5 Square Inches



Spider Mites 7-9 DAT

Eleven Locations (2009-2010)

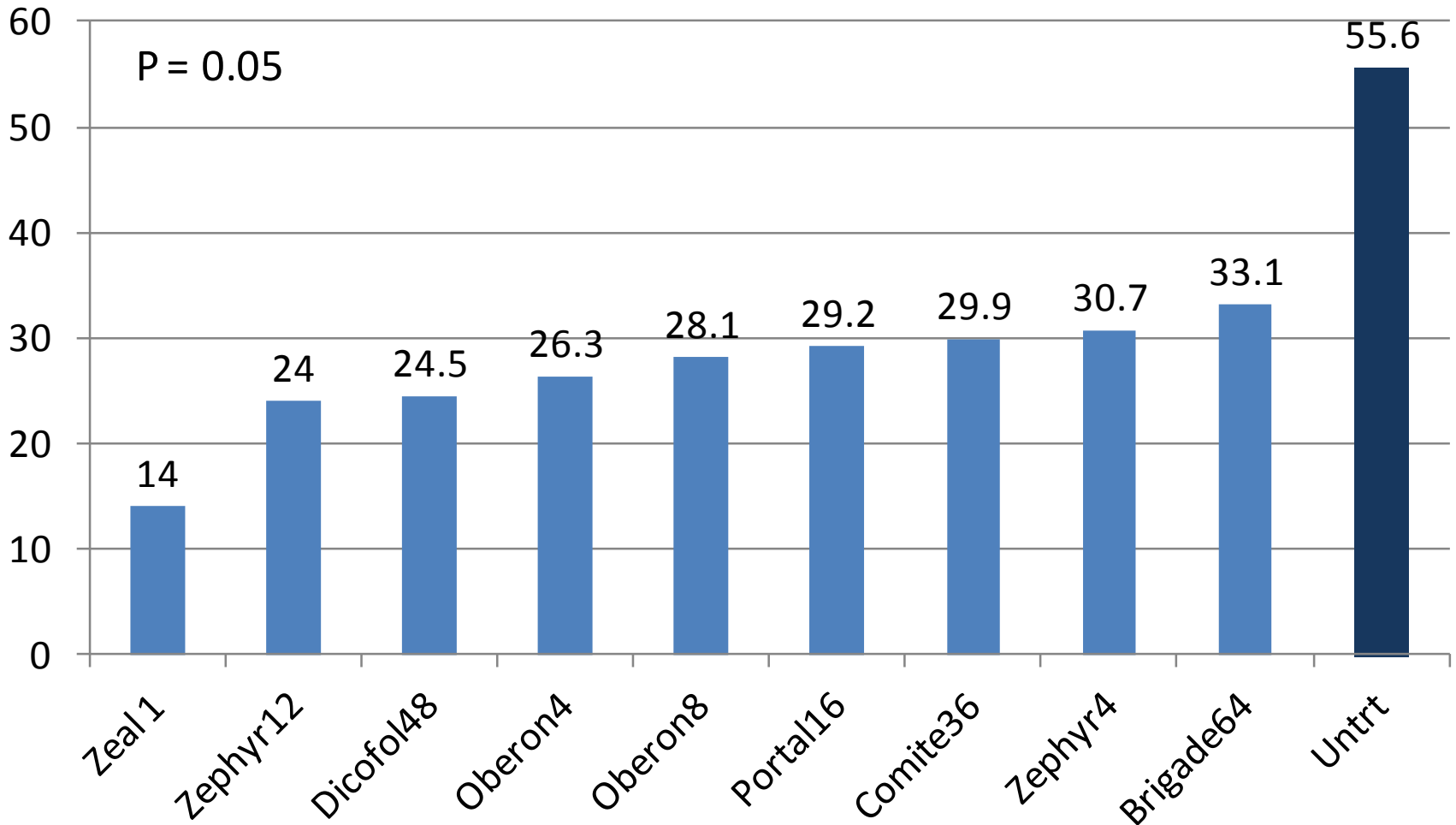
Numbers per 10 Square Inches



Spider Mites 10-14 DAT

Six Locations (2009-2010)

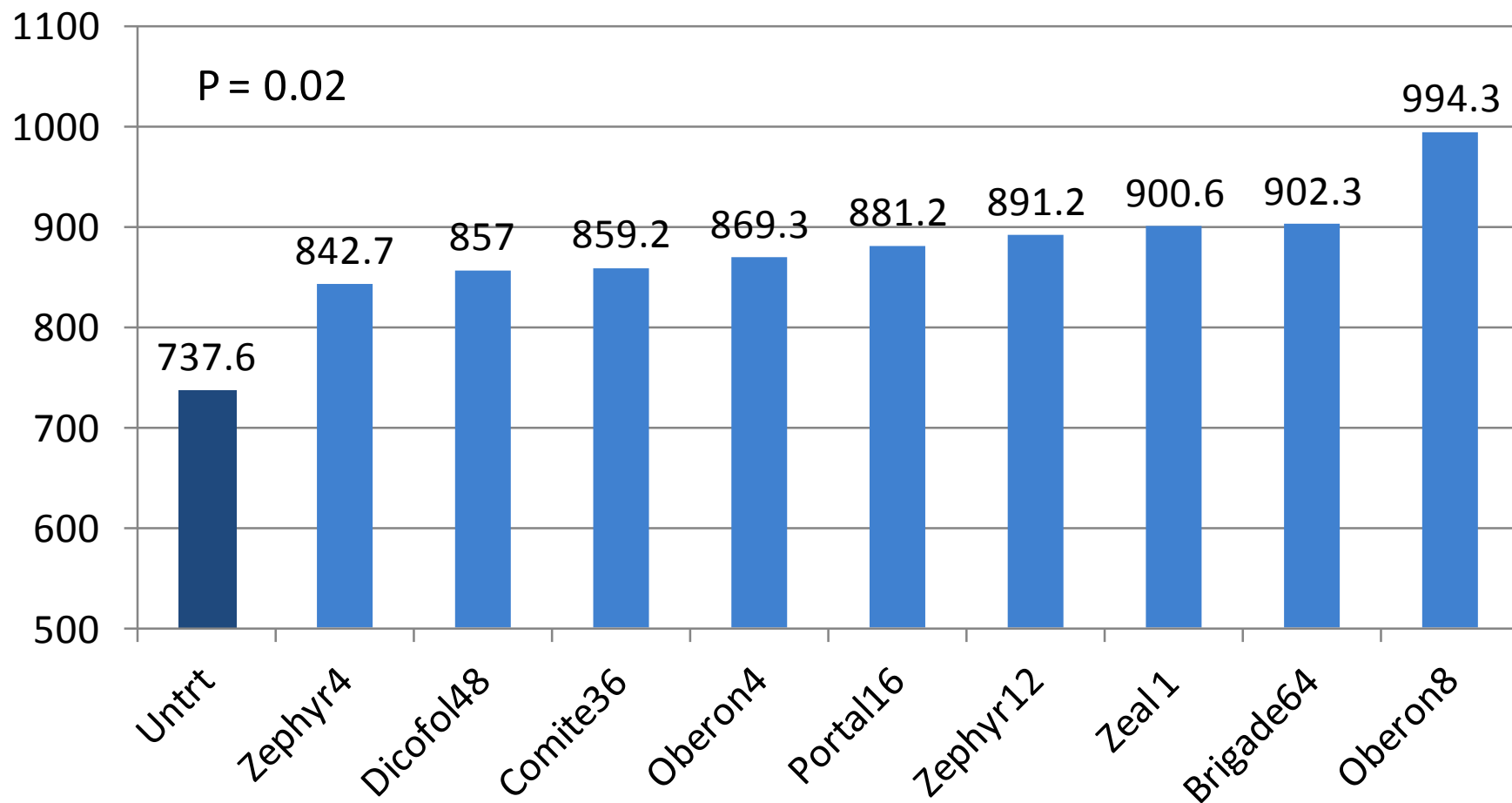
Numbers per 5 Square Inches



Yield

Five Locations (2009-2010)

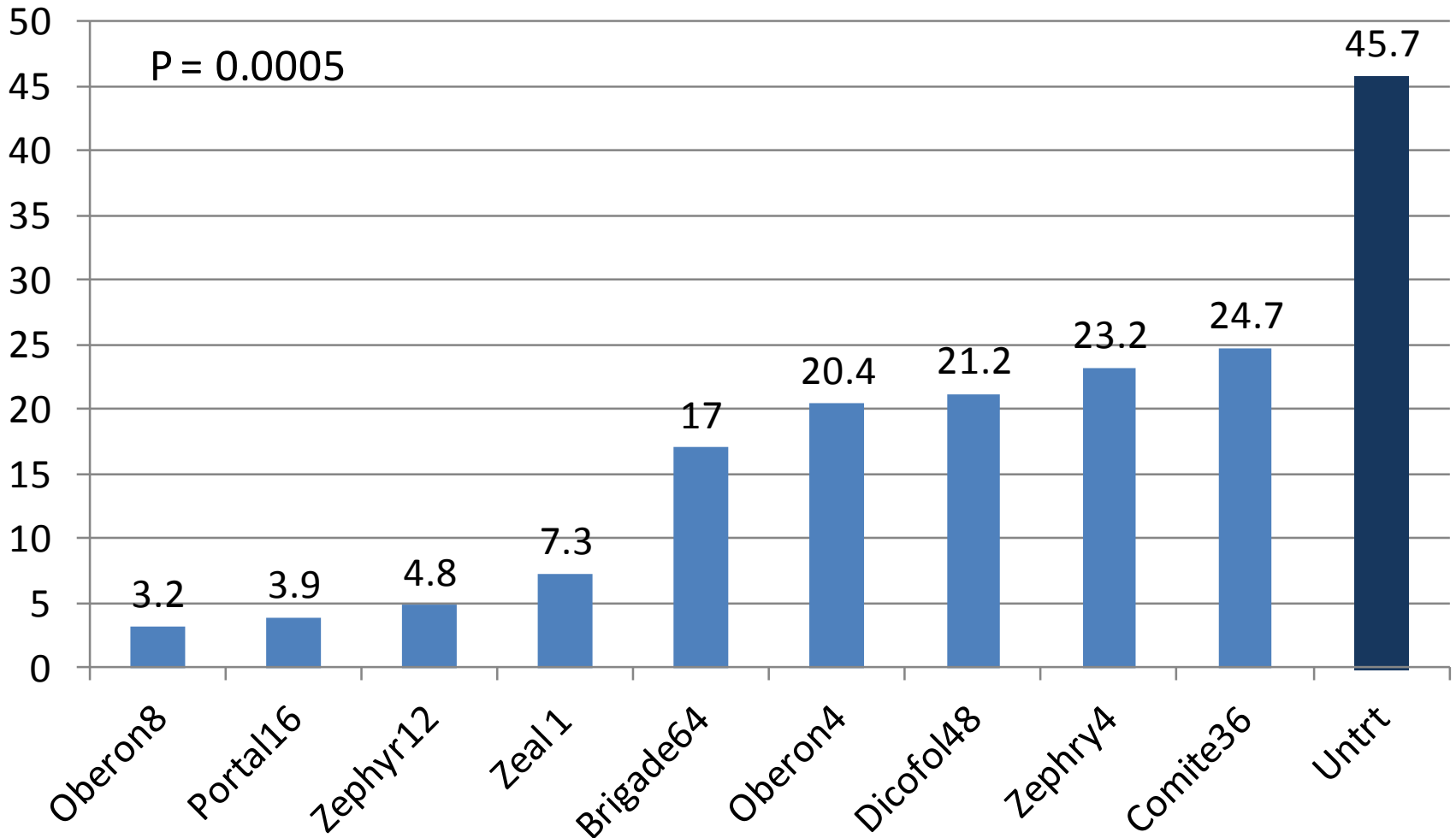
Lint Yield per Acre



Spider Mites 8 DAT

Tennessee (2009)

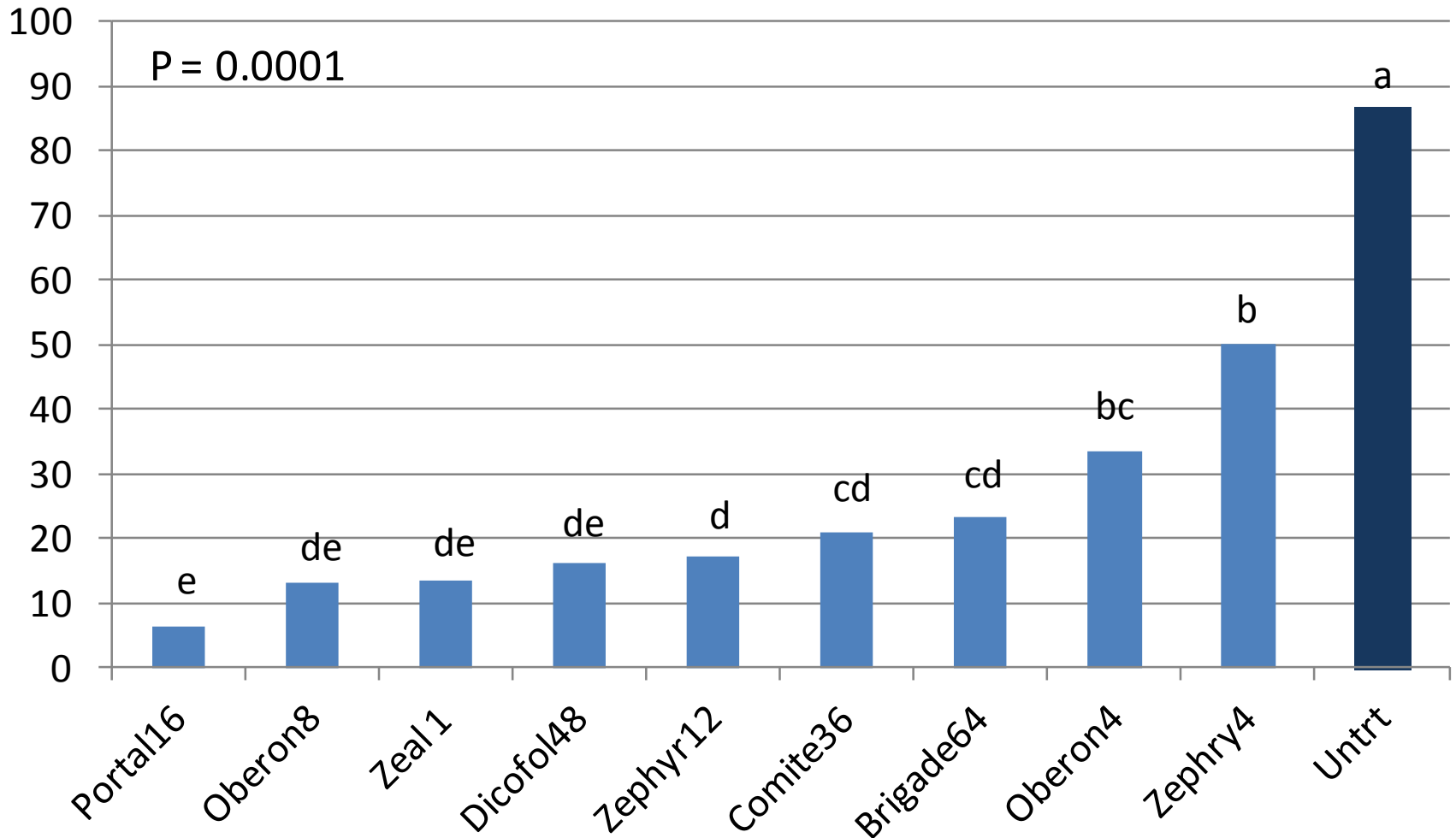
Numbers per 10 Square Inches



Spider Mites 5 DAT-A

Mississippi (2010)

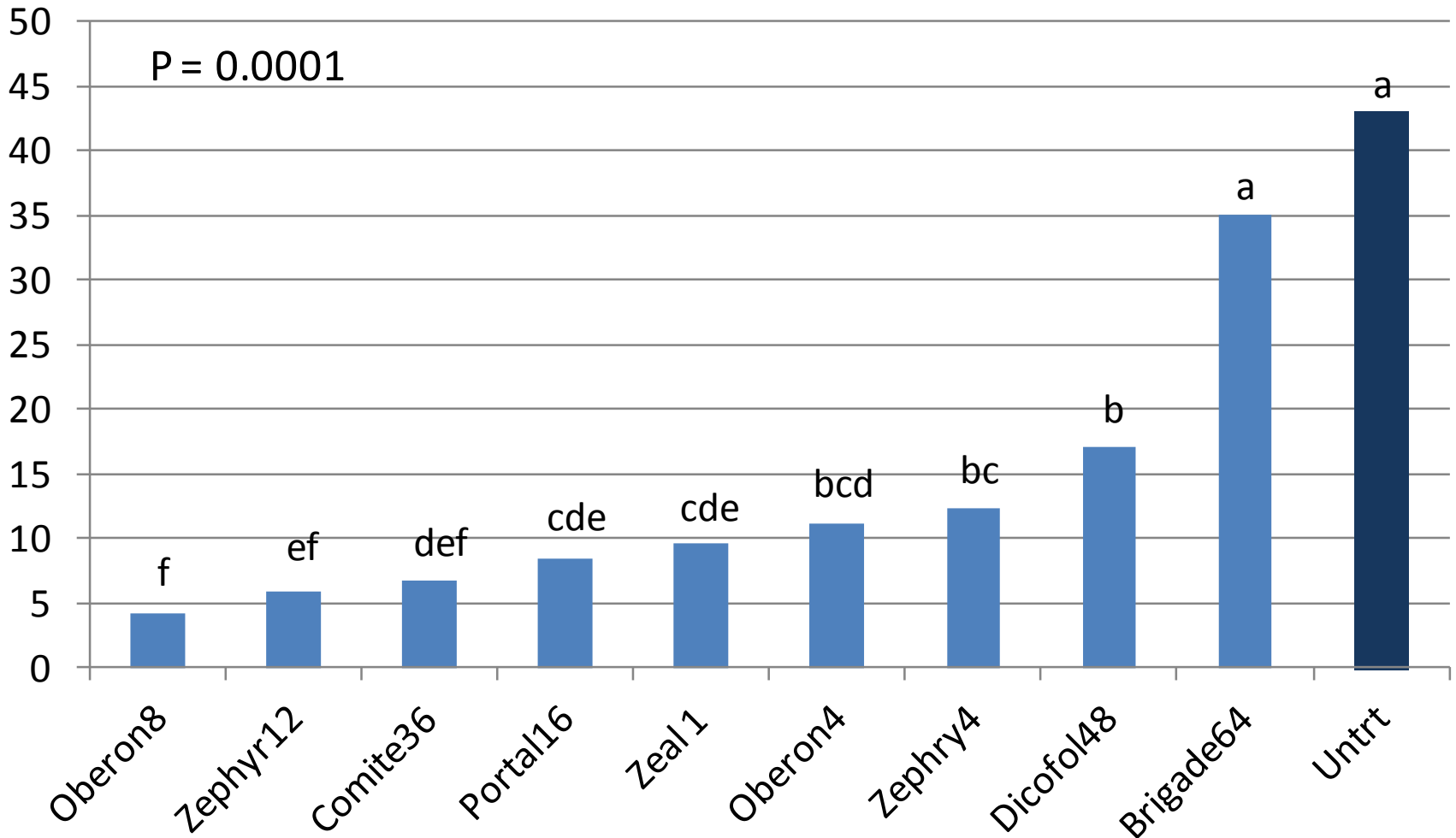
Numbers per 10 Square Inches



Spider Mites 12 DAT-A

Mississippi (2010)

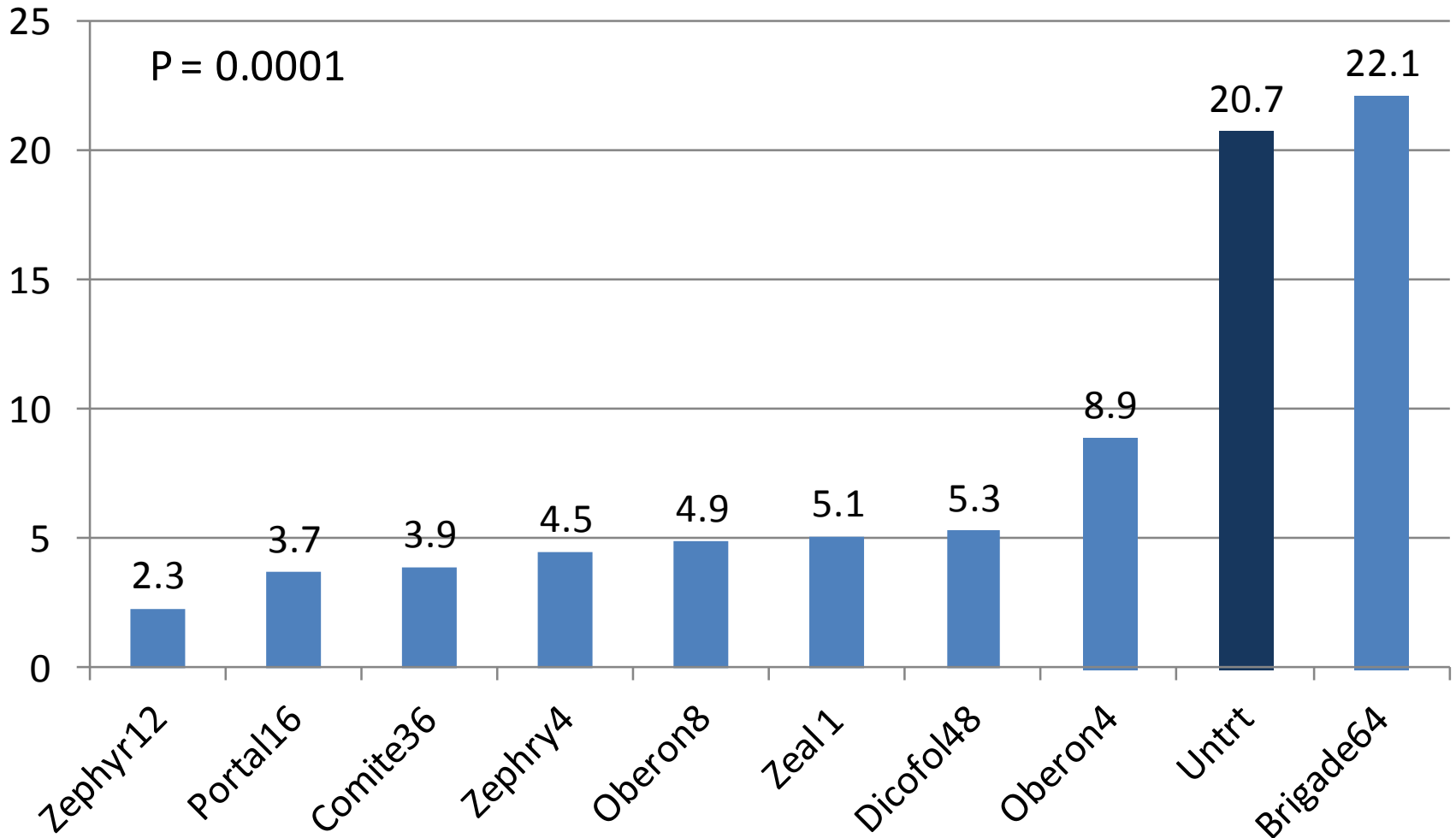
Numbers per 10 Square Inches



Spider Mites 4 DAT-B

Mississippi (2010)

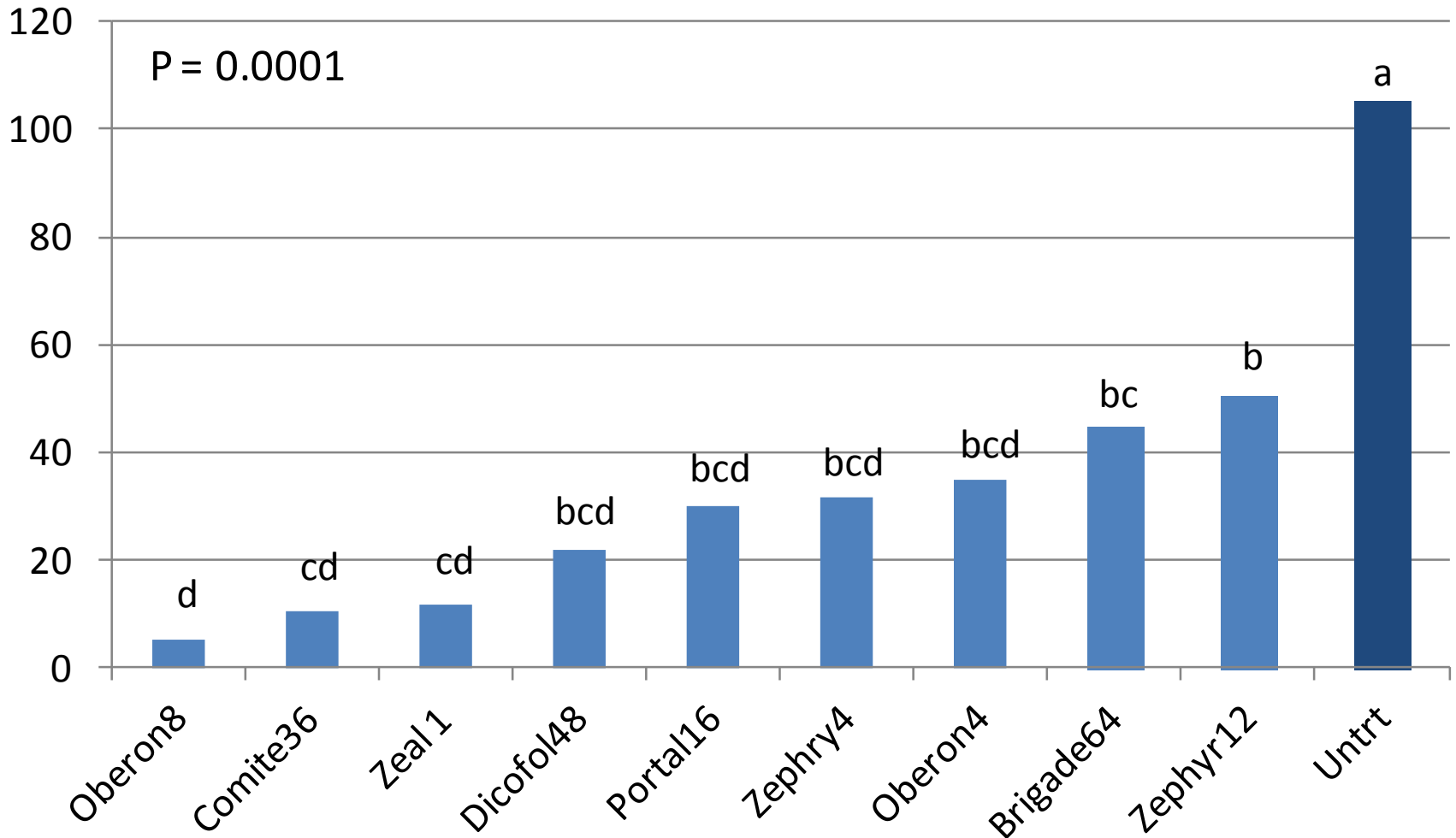
Numbers per 5 Square Inches



Spider Mites 4 DAT

Arkansas (2010)

Numbers per 5 Square Inches





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

