

Lewis spider mite (*Eotetranychus lewisi*) host bioassays

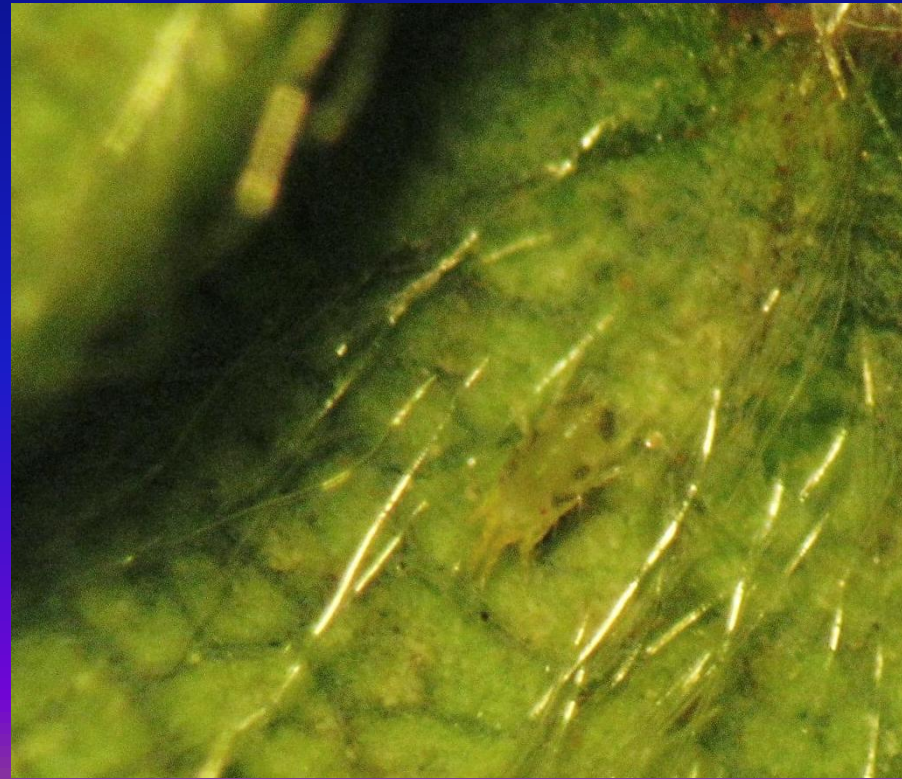


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(UCCE-Ventura)

Annual Strawberry Production Meeting
August 31, 2012

Lewis spider mite (*Eotetranychus lewisi*)

- Populations are increasing in Ventura County
 - Cane berries
 - raspberry
 - Strawberry



Lewis vs. Twospotted spider mite (TSSM)

- Tetranychidae
- Lewis: Multiple spots around the body
- TSSM: One large spot on each side

*larvae are hard to tell until spot patterns form



Lewis adult



Twospotted adult

Damage

- Yellow spots on upper leaf surface
- Red-purple, curled leaf tips
- Webbing & necrosis on underside



- High mite densities can cause:
 - Reduction in fruit size & yield
 - Stunting & leaf drop
 - Kill a stressed plant



Previous lab predatory mite biocontrol results...

TSSM ONLY



P. persimilis



© Photo courtesy
Holt Studios, UK

N. fallacis



A. andersoni



N. californicus



University of Florida

Elena M. Rhodes

Lewis ONLY



P. persimilis



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N. fallacis



A. andersoni



N. californicus



University of Florida

Elena M. Rhodes

Lewis



+

TSSM



~~*P. persimilis*~~



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N. fallacis



A. andersoni



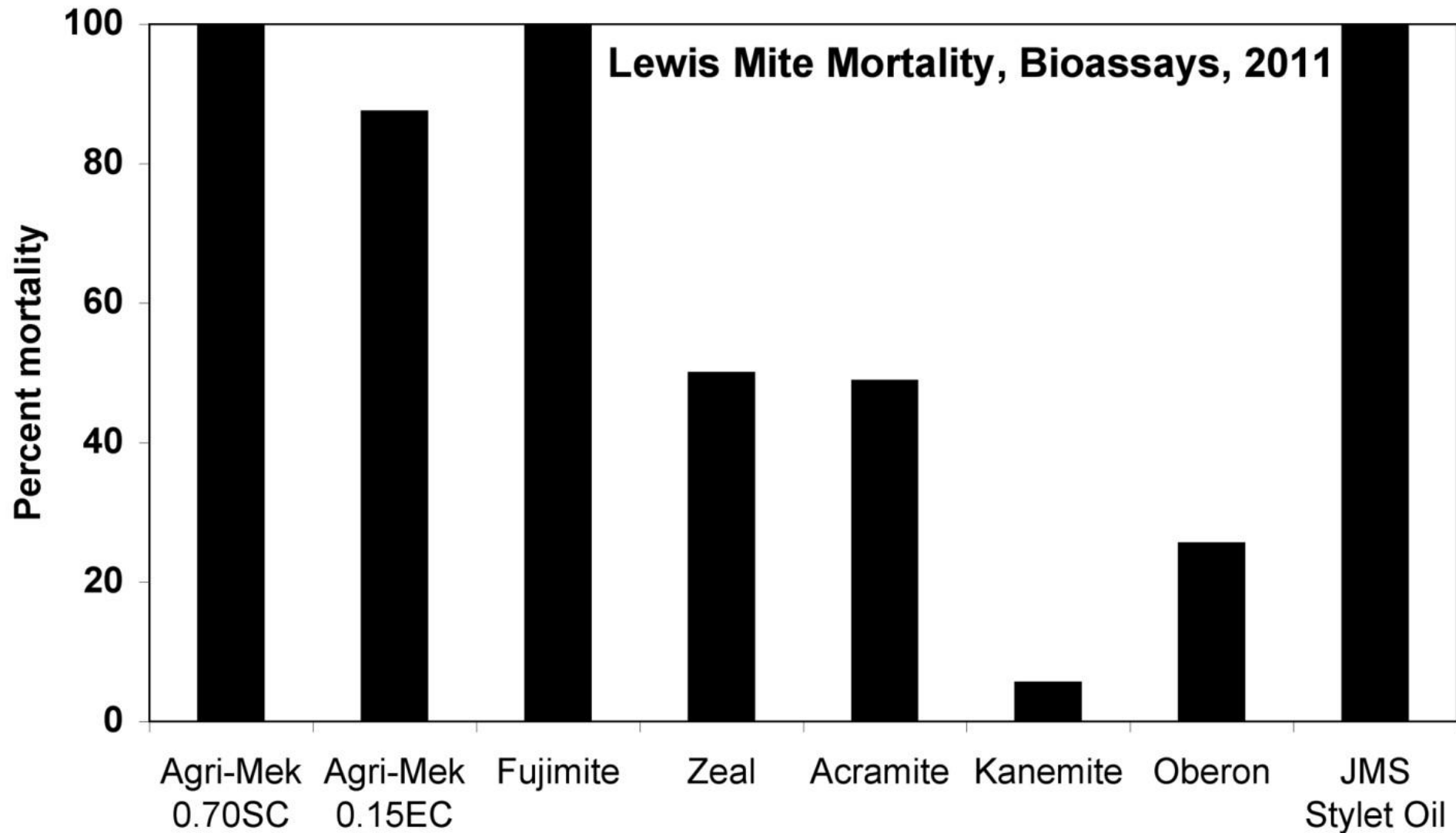
~~*N. californicus*~~



University of Florida

Elena M. Rhodes

Previous lab bioassay results by Frank Zalom



Current study...

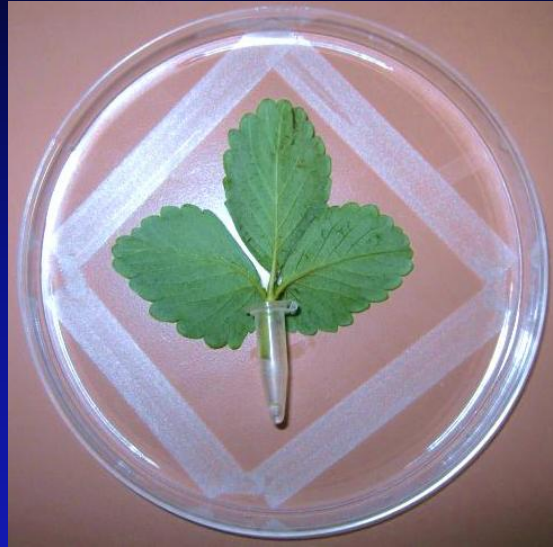
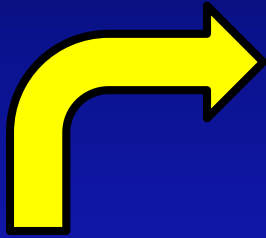
- Does one variety support lewis and twospotted spider mite populations more than other varieties?

Methods

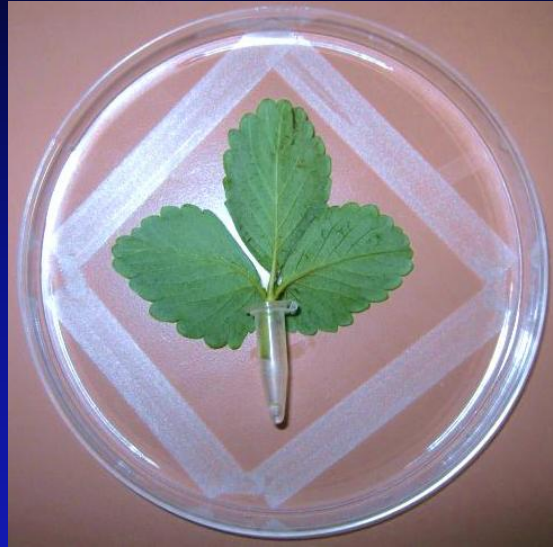
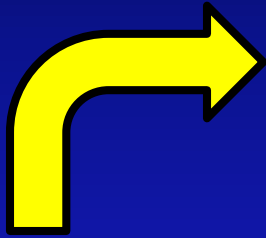
- Collected leaves from 5 different hosts
 - Ventana
 - Benicia
 - San Andreas
 - Raspberry*
 - Mallow*



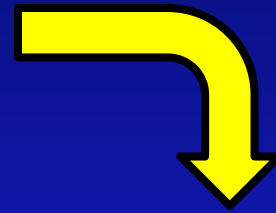
- Transferred Lewis mite onto a new leaf



- 4 plates per host



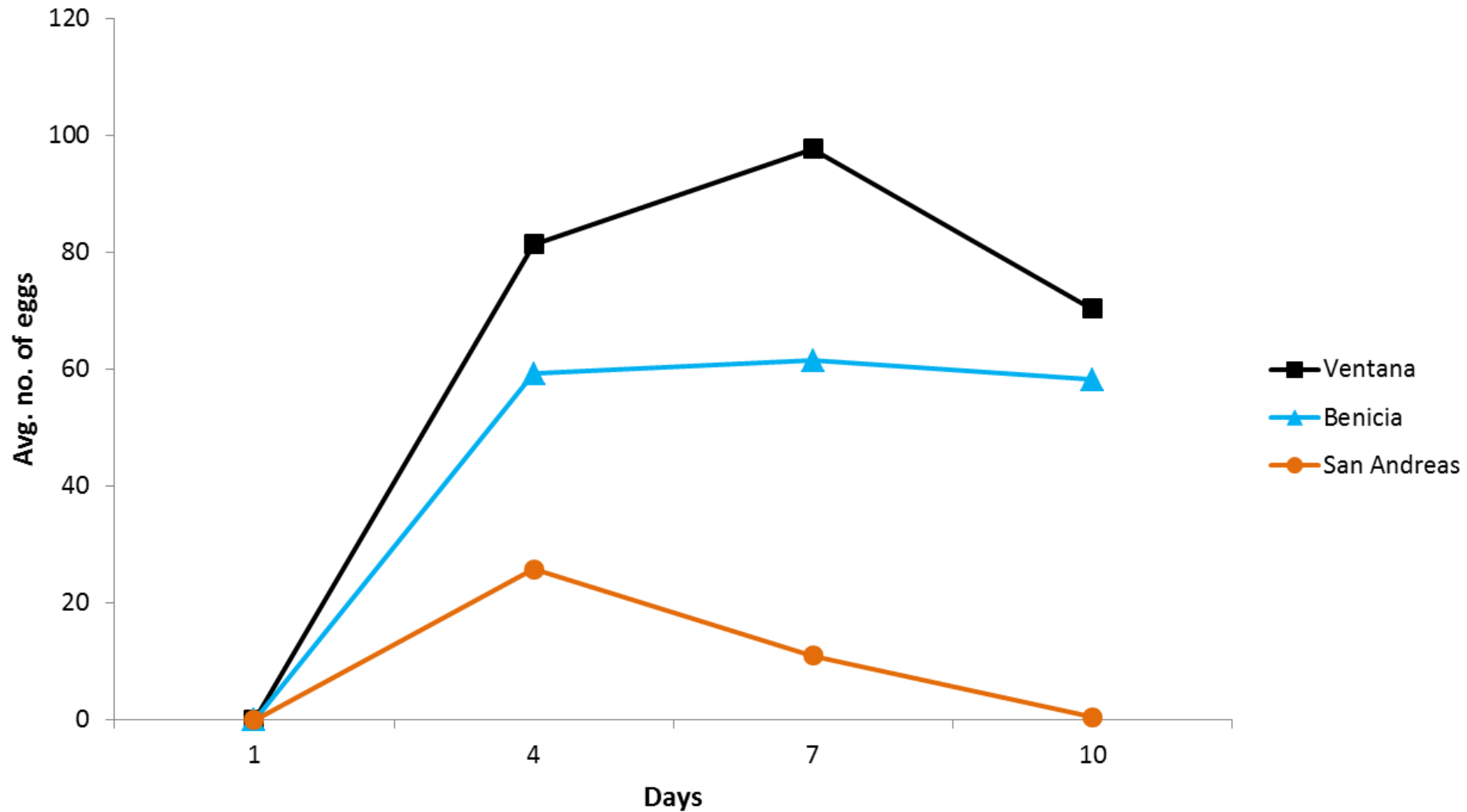
x4



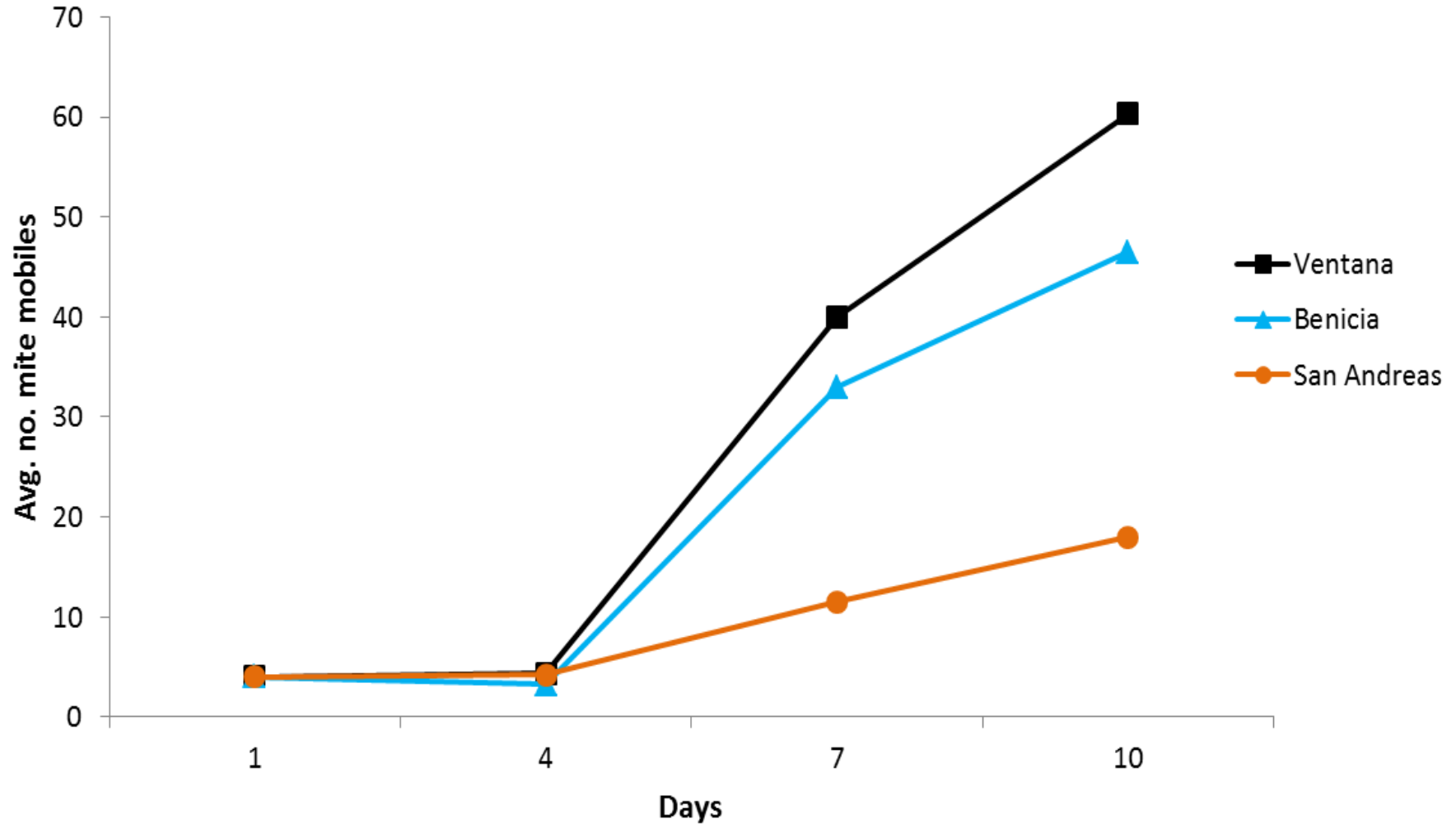
- Lab conditions: 18:6 (day:night), ~73 °F, ~45% RH
- Counted number of Lewis mite eggs & mobiles (larvae + nymphs + adults) every 4th day for 10 days



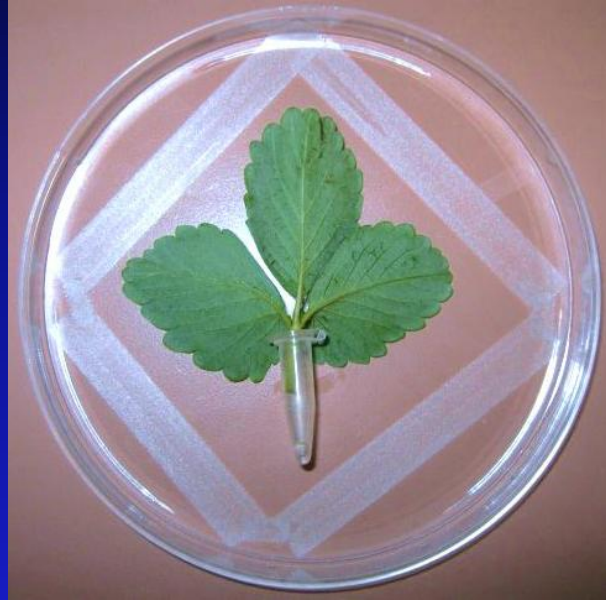
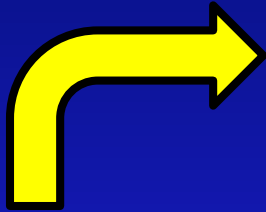
Lewis eggs (strawberry host only)



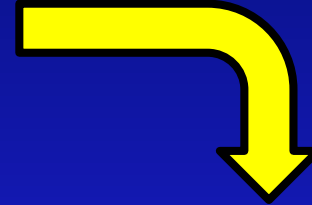
Lewis mobiles (strawberry host only)



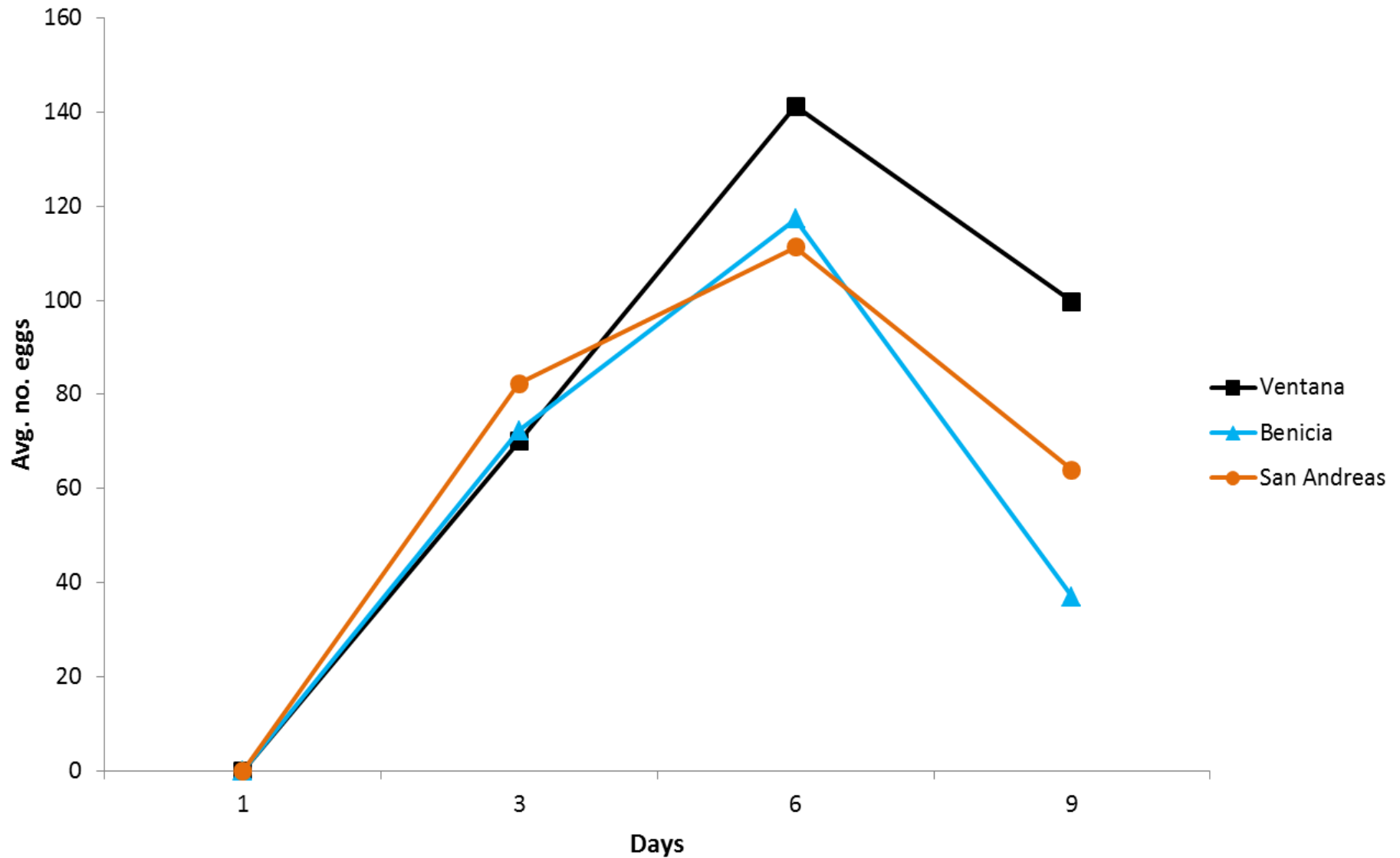
Same methods as before EXCEPT
-Added twospotted spider mite



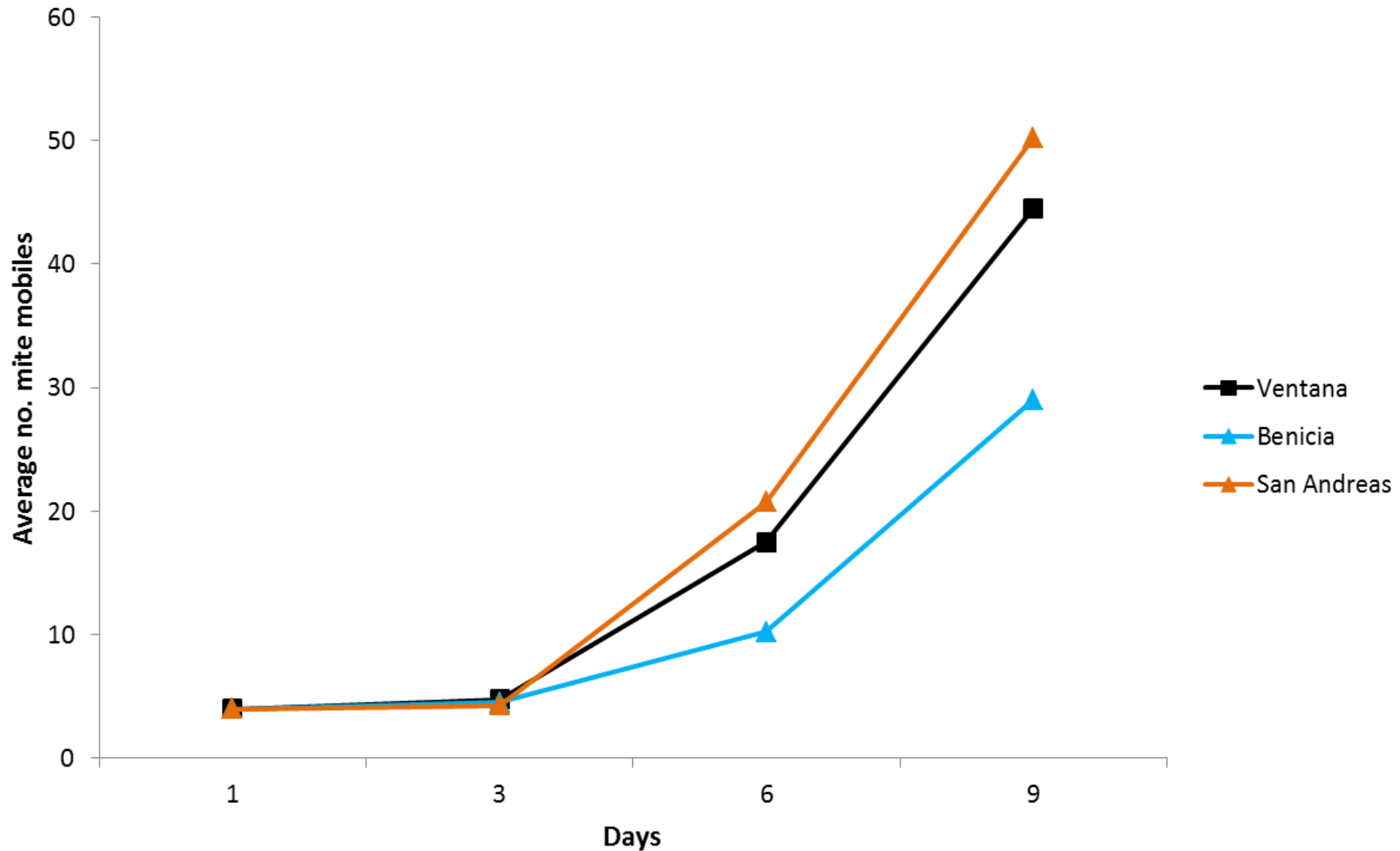
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TSSM eggs (strawberry host only)



TSSM mobiles (strawberry host only)





- All three varieties supported both Lewis & TSSM
 - Lewis reproduced more on Ventana & Benicia
 - TSSM reproduces well on all varieties

- Future/current Projects
 - Large scale field evaluations of predatory mite efficiency
 - Environmental variability
 - Spatial variability



- Quick note on thrips...

- Preliminary bioassays show possible resistance occurrence in Ventura Co. to Radiant & Success
- Both are Group 5 (Spinosyns) MOA
- Don't rotate with the same group. This will increase resistance to group 5 compounds!
- Rotate using a different group



Acknowledgements

Frank Zalom - UC Davis

Syngenta Bioline for phytoseiid donations

California Strawberry Commission

