Biology & Biocontrol of Lewis spider mite (*Eotetranychus lewisi*) in strawberries

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Lewis spider mite (*Eotetranychus lewisi*)

- Found on the underside of leaves
  - With/without Two Spotted

- Lewis & Two Spotted differ in appearance

Lewis adult

Two Spotted adult
Damage

- Yellow spots on upper leaf surface
- Red-purple, curled leaf tips
- Webbing & necrosis on underside
-Lewis mite populations increasing in Ventura County
  -Strawberries & cane berries

-Phytoseiulus persimilis commonly released predator for Two Spotted mites…
But it may not work for Lewis mite management when mites shifting from Two Spotted to Lewis.

Goal:
- To figure out which predatory mite works best in management of Lewis mites.
Methods

- Collected Lewis mites from the field
- Raised Lewis mite colony on clean strawberry leaves
- Ordered predatory mites
  - *Neoseiulus californicus*
  - *Neoseiulus fallacis*
  - *Amblyseius andersoni*
- Transferred 40 Lewis mites onto a new leaf
- Settle for one day
- Added 10 predators of a particular species per plate
- 4 plates per predator species
- 4 plates for control (no predators)
- Lab conditions: 18:6 (day:night), ~75 °F, ~52% RH

- Counted number of Lewis mites every 4th day for 2 weeks
All 3 predatory mites can control Lewis mites…

But what happens when you have both Two Spotted & Lewis mites?

Do the predatory mites prefer one over the other?
Same methods as before EXCEPT
-Added 20 Lewis + 20 Two Spotted
Recommended biocontrol for…

-Two Spotted ONLY
  - *P. persimilis*
  - *N. fallacis*
  - *A. andersoni*
Recommended biocontrol for…

-Lewis ONLY
  - *N. californicus*
  - *N. fallacis*
  - *A. andersoni*
Recommended biocontrol for...

- Lewis AND Two Spotted
  - *N. fallacis*
  - *A. andersoni*
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