



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

mites shifting from Two Spotted to Lewis

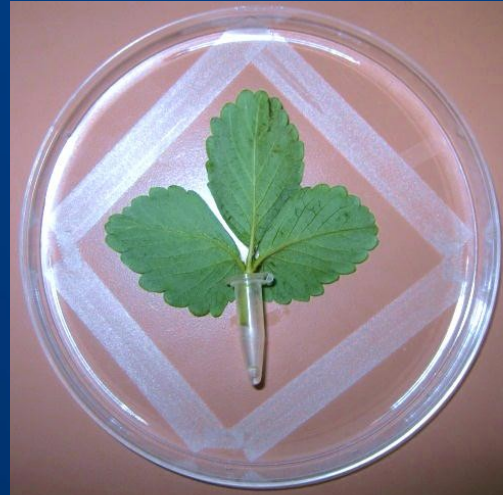
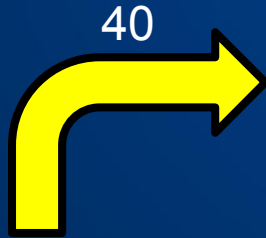
How do you control this?
Goal:

-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*

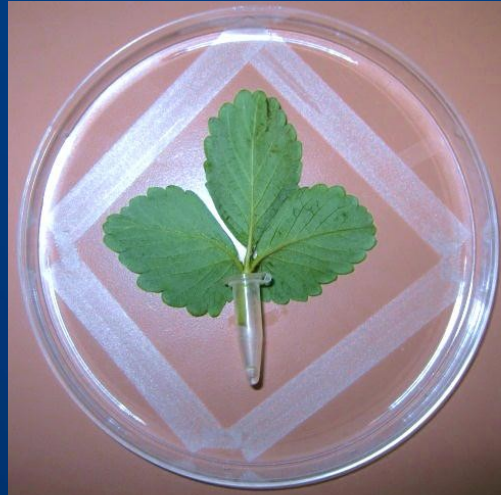
- Transferred 40 Lewis mites onto a new leaf
- Settle for one day



- Added 10 predators of a particular species per plate



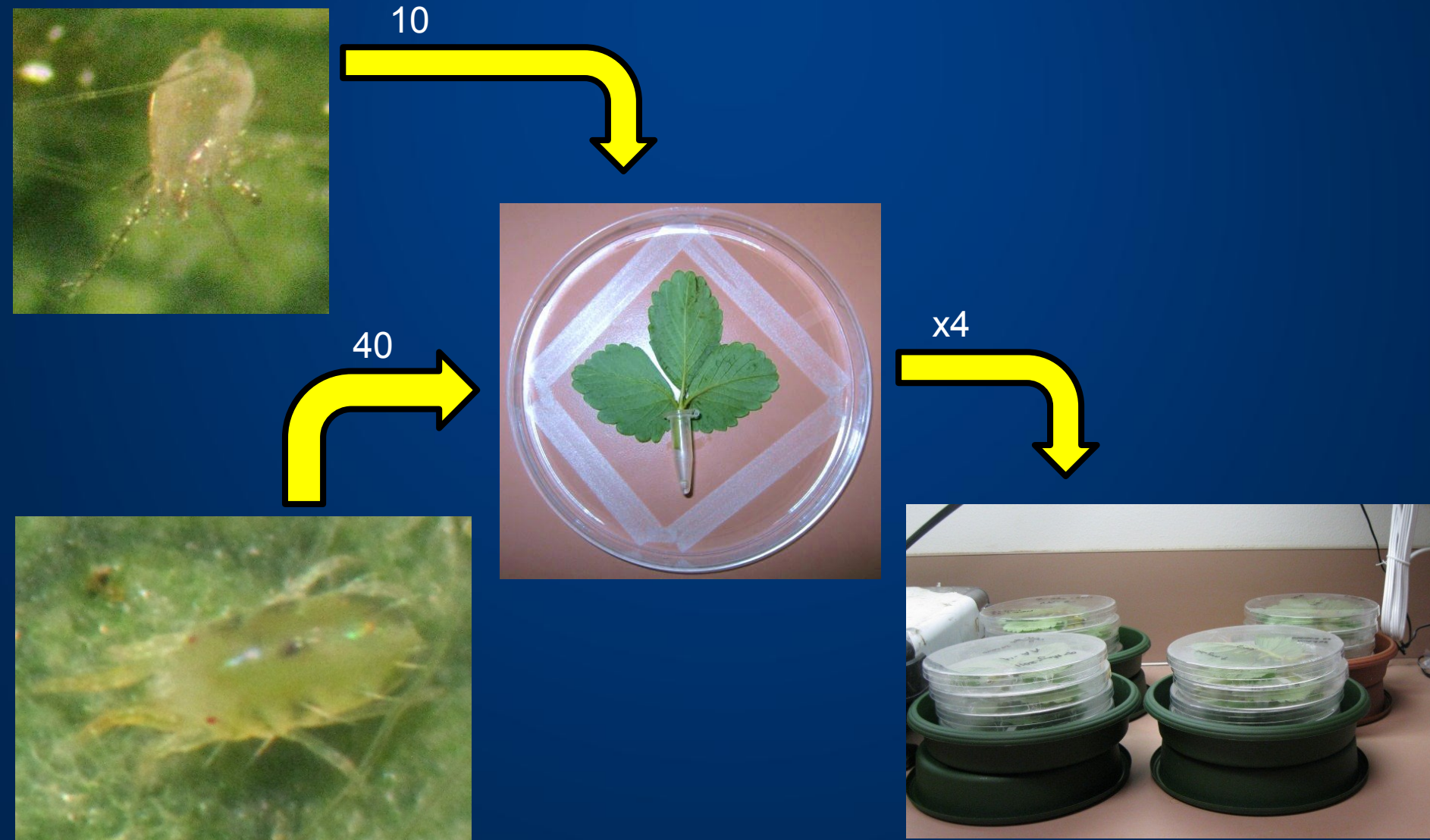
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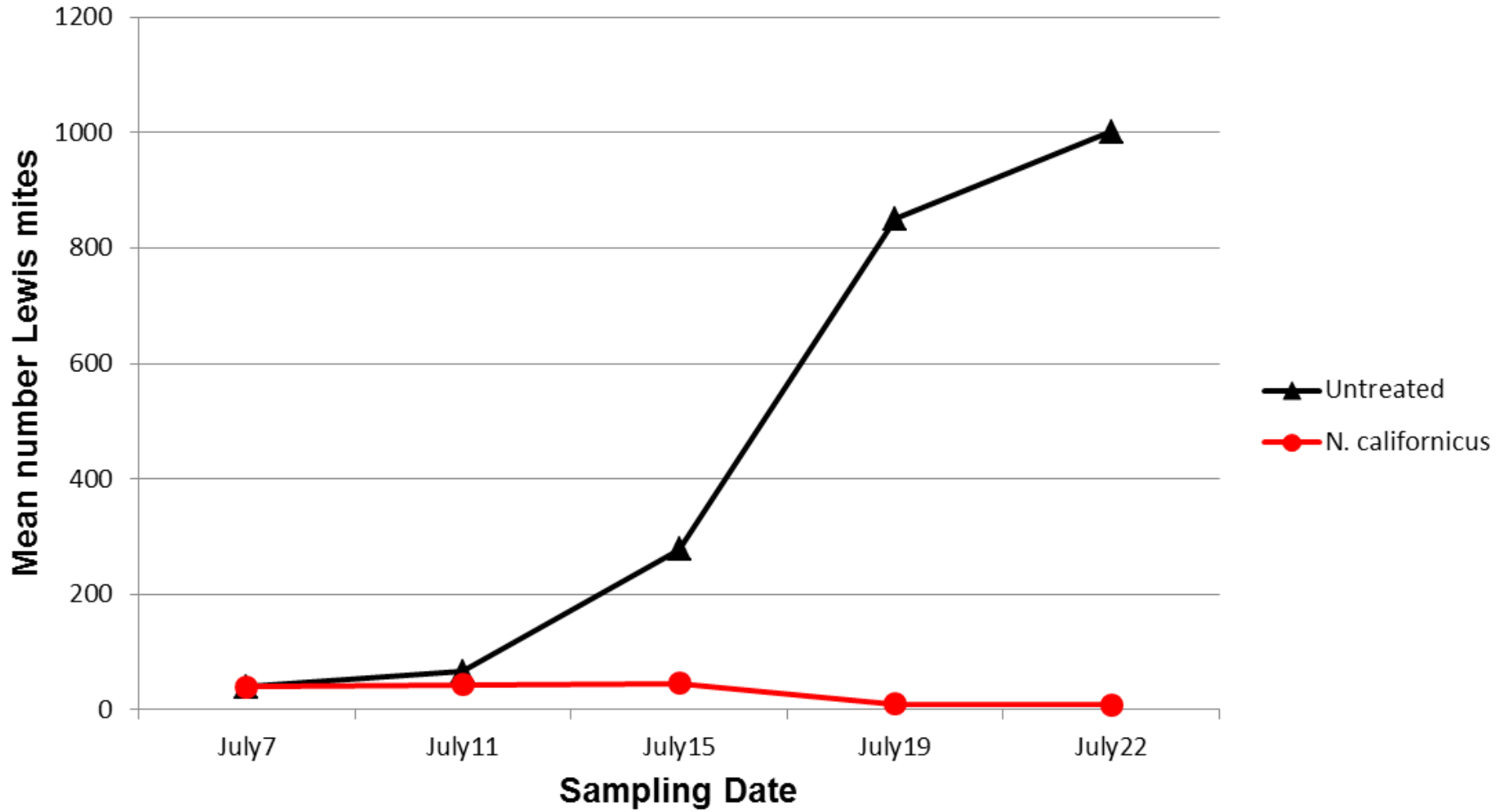
- 4 plates per predator species
- 4 plates for control (no predators)



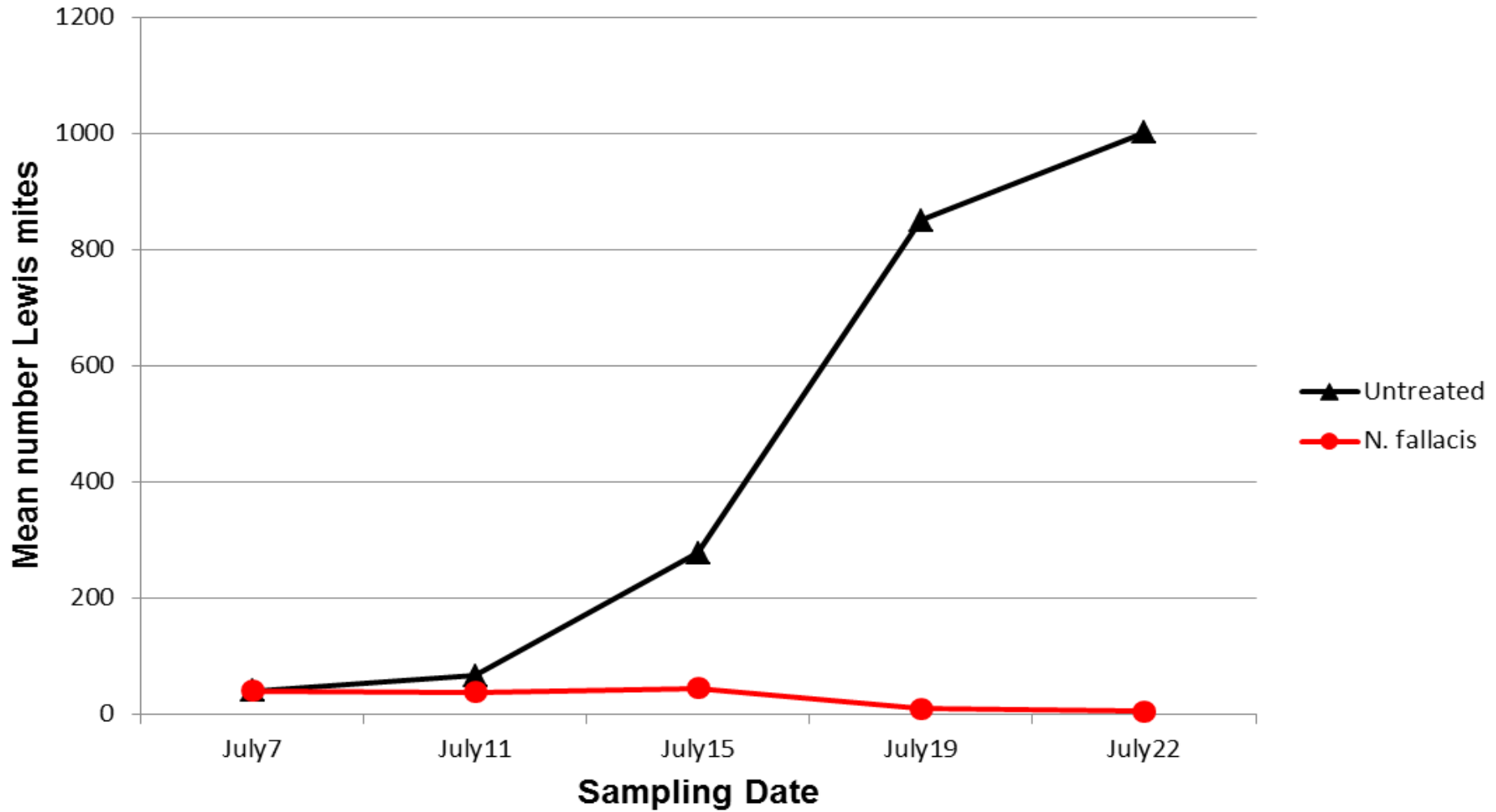
- Lab conditions: 18:6 (day:night), ~75 °F, ~52% RH
- Counted number of Lewis mites every 4th day for 2 weeks



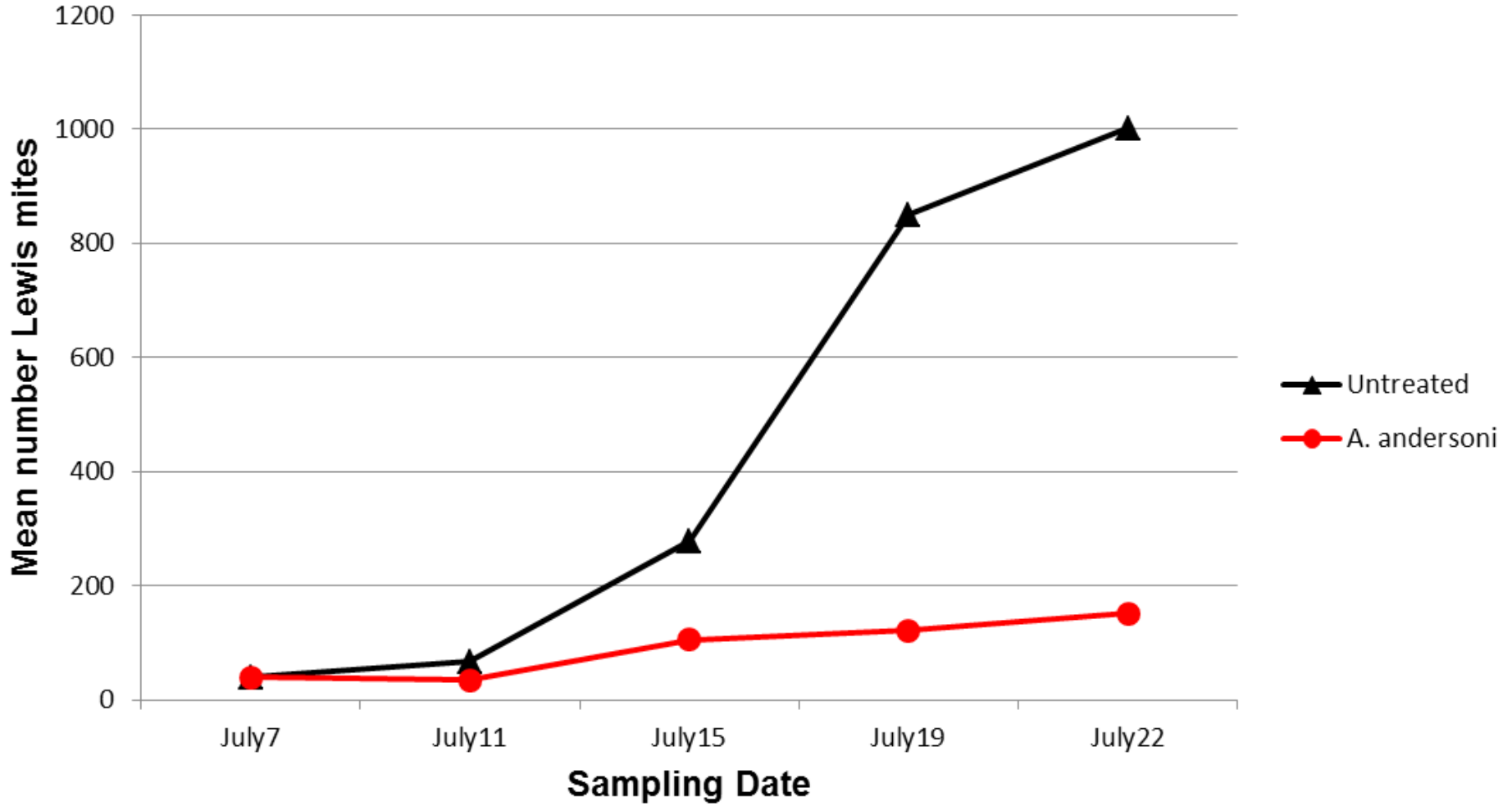
Lewis + *N. californicus*



Lewis + *N. fallacis*



Lewis + *A. andersoni*



All 3 predatory mites can control Lewis mites...



N. fallacis attacking Lewis mite

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



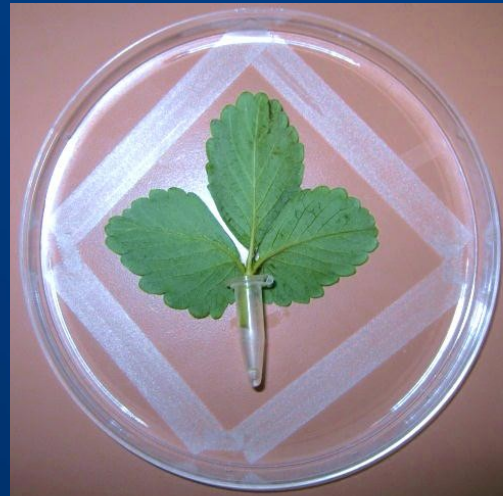
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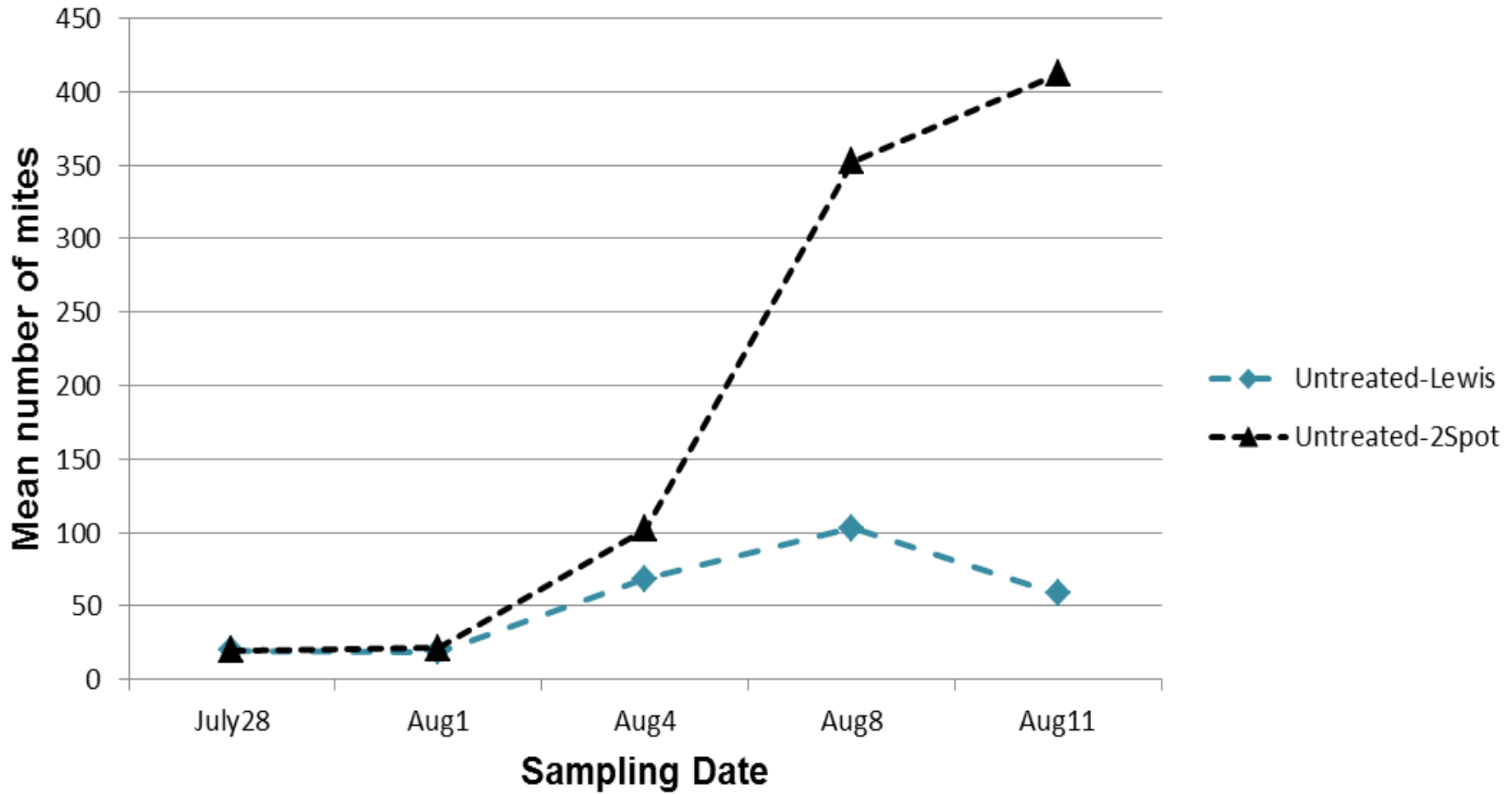
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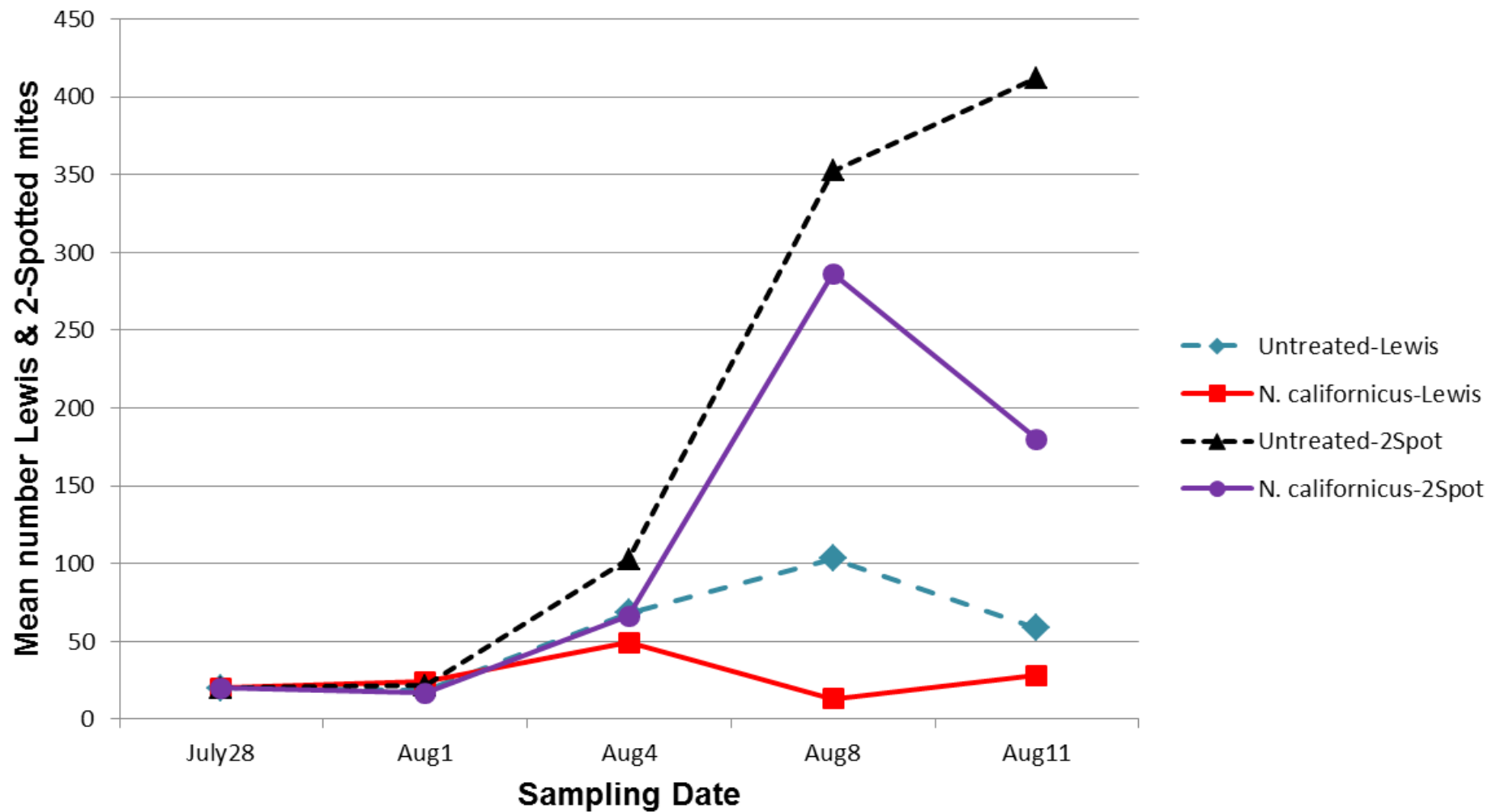
x4



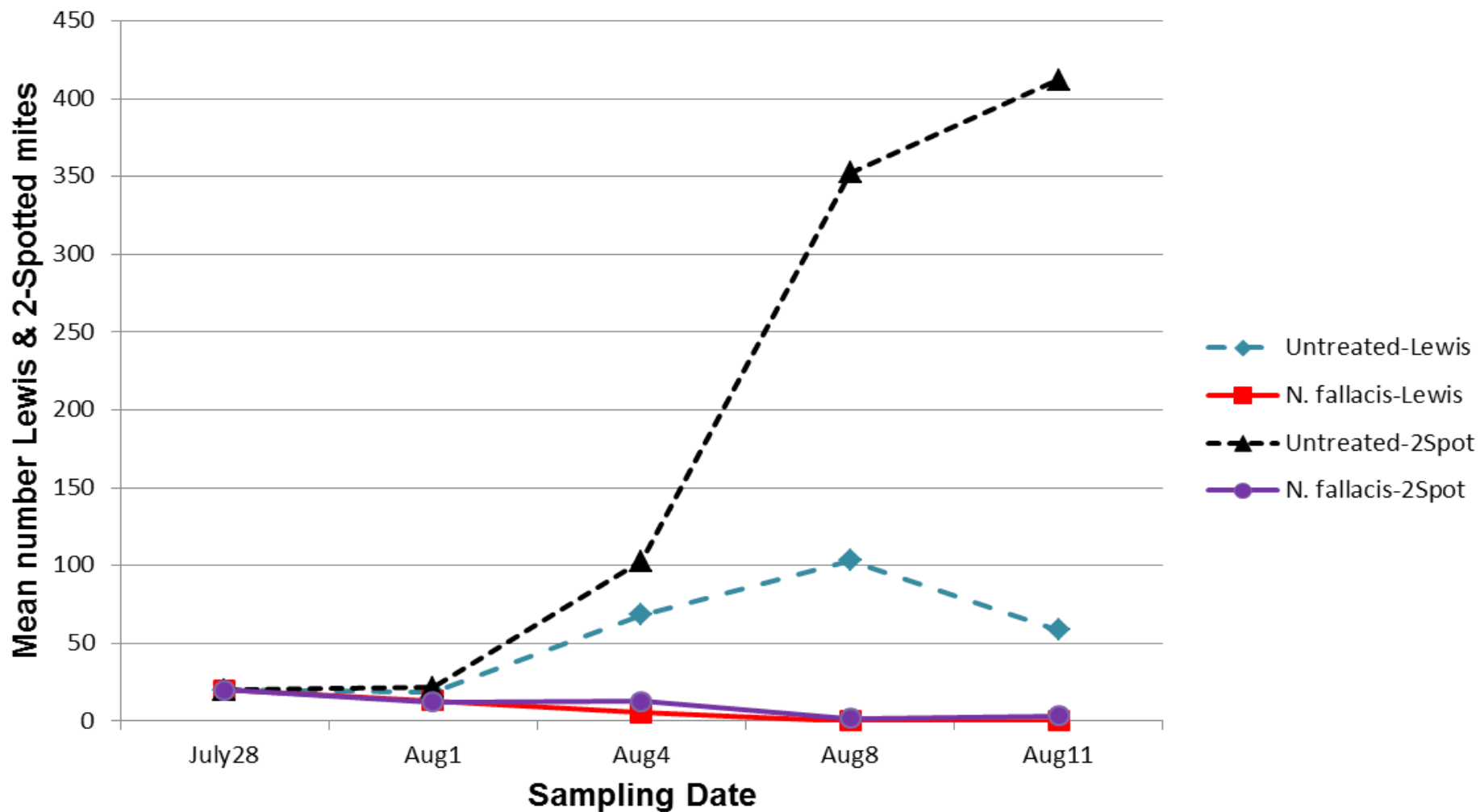
Lewis + 2 Spotted mites (Controls)



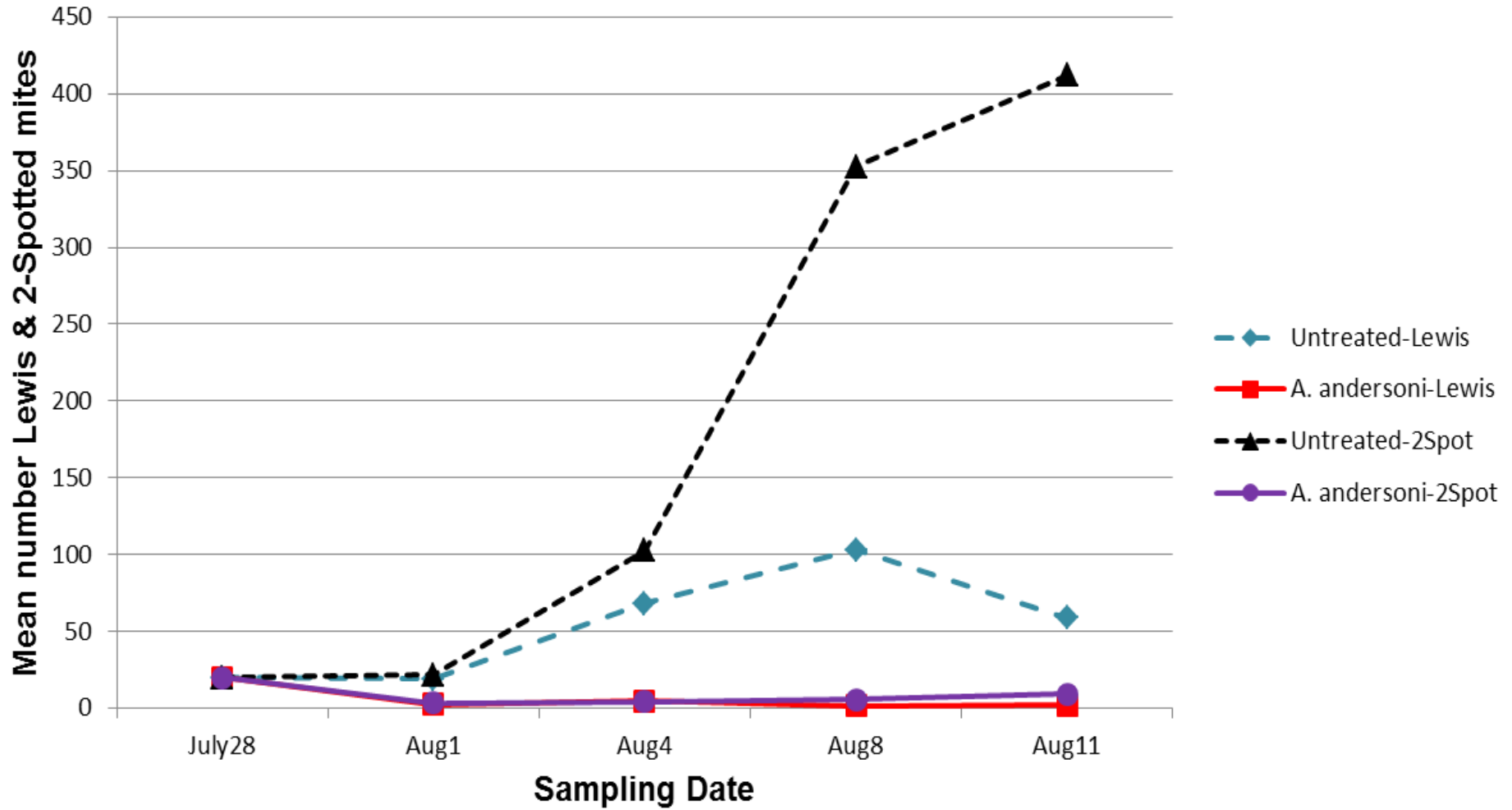
Lewis + Two Spotted + *N. californicus*



Lewis + Two Spotted + *N. fallacis*



Lewis + Two Spotted + *A. andersoni*



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*



Acknowledgements

Thank's to Syngenta Bioline for mite donations

