

Tydeidae: small mites, big potential?



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Russet Mites (*Eriophyidae*): a key problem in crop protection

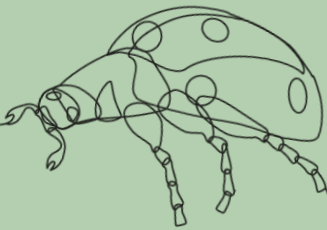
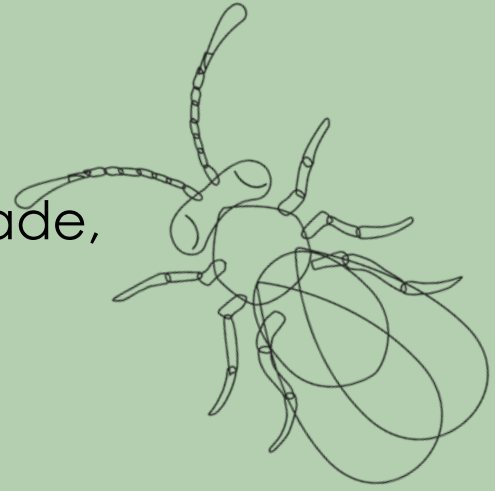
Tomato Russet Mite (*Aculops lycopersici*)

Extremely small;
when visible damage occurs, too late to control



Broad range of host plants

- ❖ **Solanum spp:** Tomatillo, potato, aubergine, pepper, tabacco, hairy nightshade, black nightshade, Physalis, Poha, Datura, Petunia
- **Others:** Black currant, Blackberry, *Convolvulus* spp,



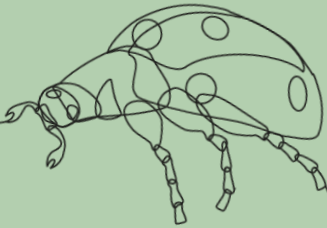
Existing Tools?

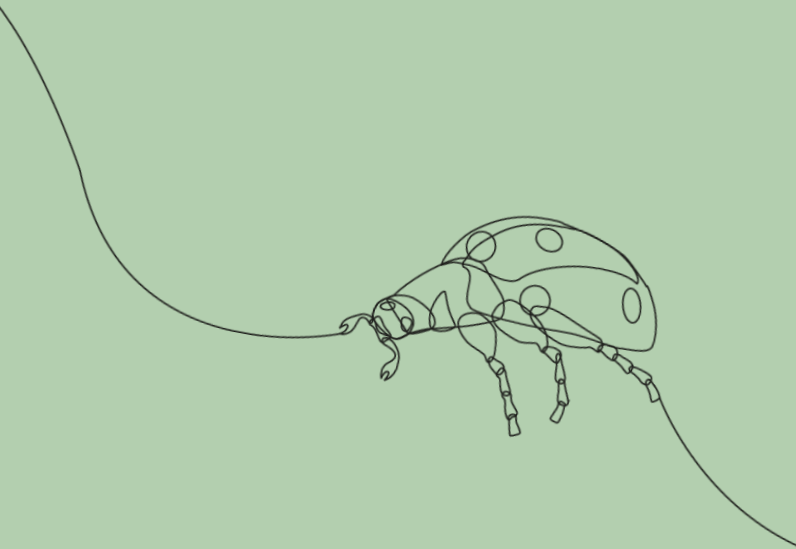
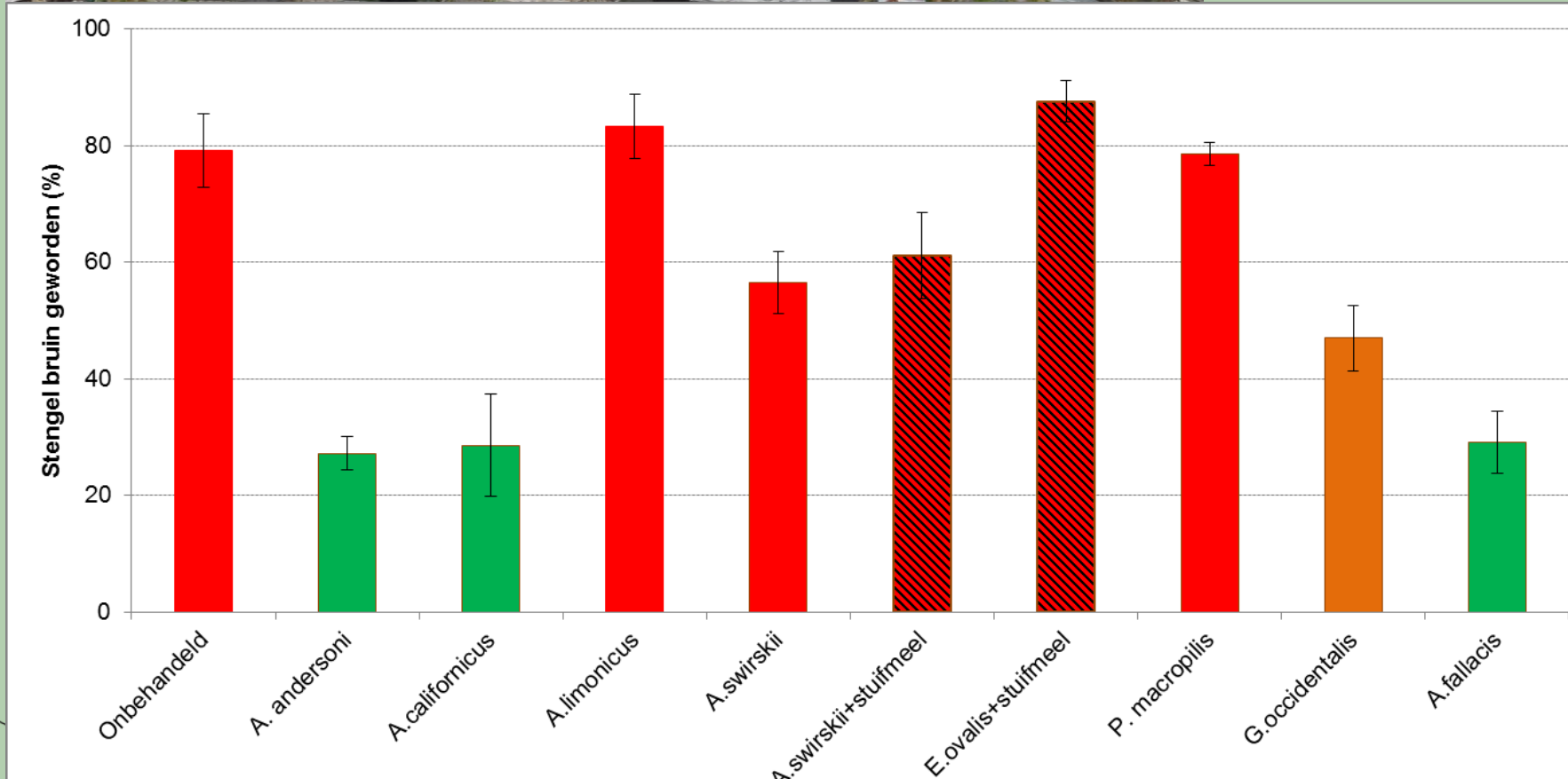


Greenhouse trial Greenlab Biobest

8 phytoseiid species tested

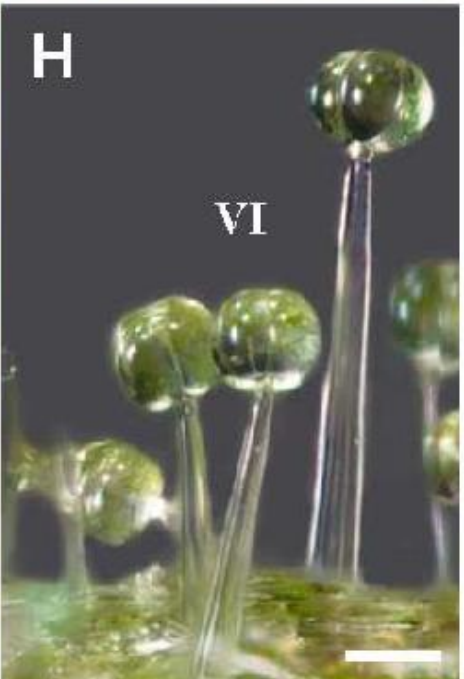
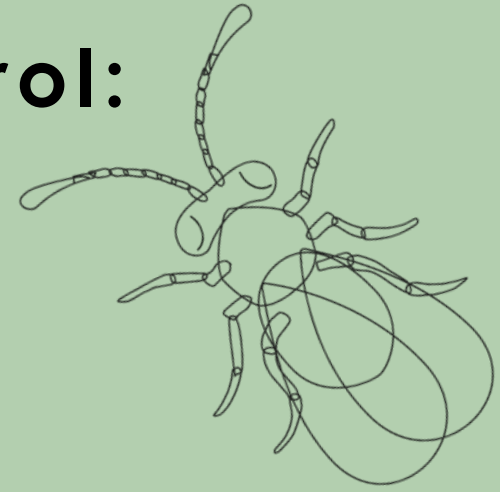
- Week 1: Inoculation with 500 Aculops/plant
- Week 1, 2, 3 and 4: 500 phytoseiids/plant







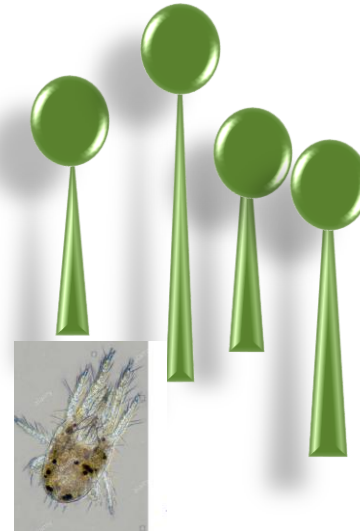
The Bottleneck to TRM control: Glandular Trichomes



THINK SMALL

The Surprisingly
Simple Ways to
Reach Big Goals

OWAIN SERVICE & RORY GALLAGHER



Tydeoids in tomato:

Homeopronematus anconai
Pronematus ubiquitous

Biology

- ❖ Short pre-oviposition period
- ❖ Large reproductive period: up to 66 eggs/ female
- ❖ Generation time at 24°C: 20,6 days
- ❖ Generation time at 30°C: 11,8 days
- ❖ Survives at low RH (sap feeding)
- ❖ Develops at T as low as 10°C



Tydeoids in tomato

- ❖ Occur spontaneously on tomatoes
- ❖ Hessein, N. A., & Perring, T. M. (1986). Predation on TRM

Labtests:

- ❖ Consume all stages of TRM
- ❖ Brodeur, et al (1997) : 3-4 *A. lycopersici* per day
- ❖ Kawai, A., & Haque, M. M. (2004) : 69,3 deutonymfen per day
- ❖ Feeds on plants sap
- ❖ Requires pollen to establish/survive

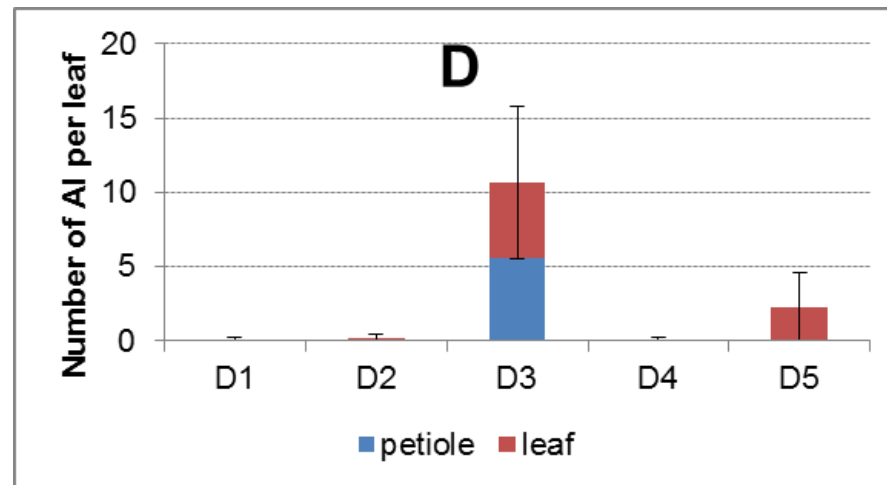
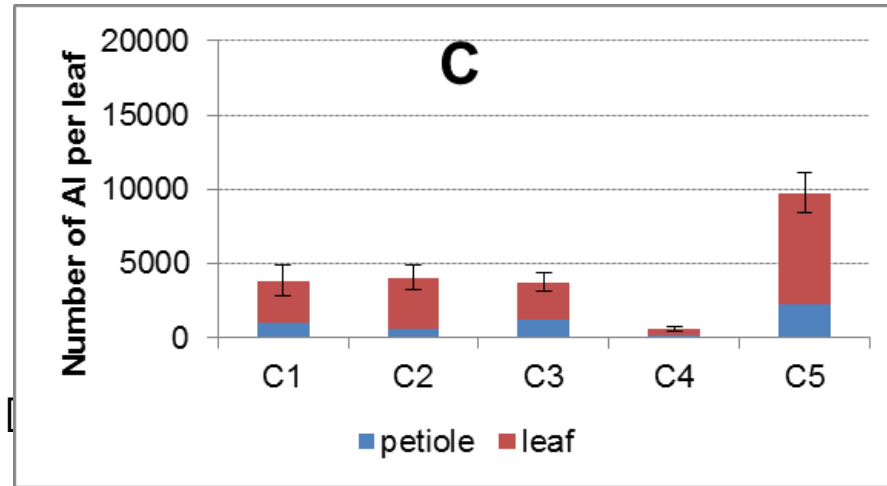
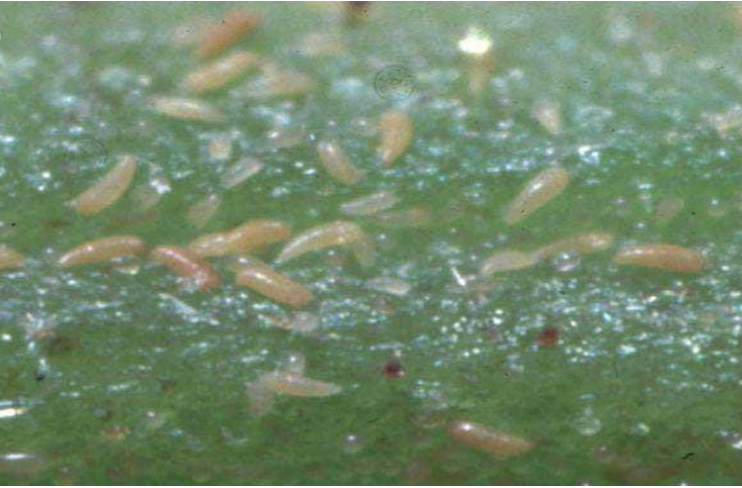


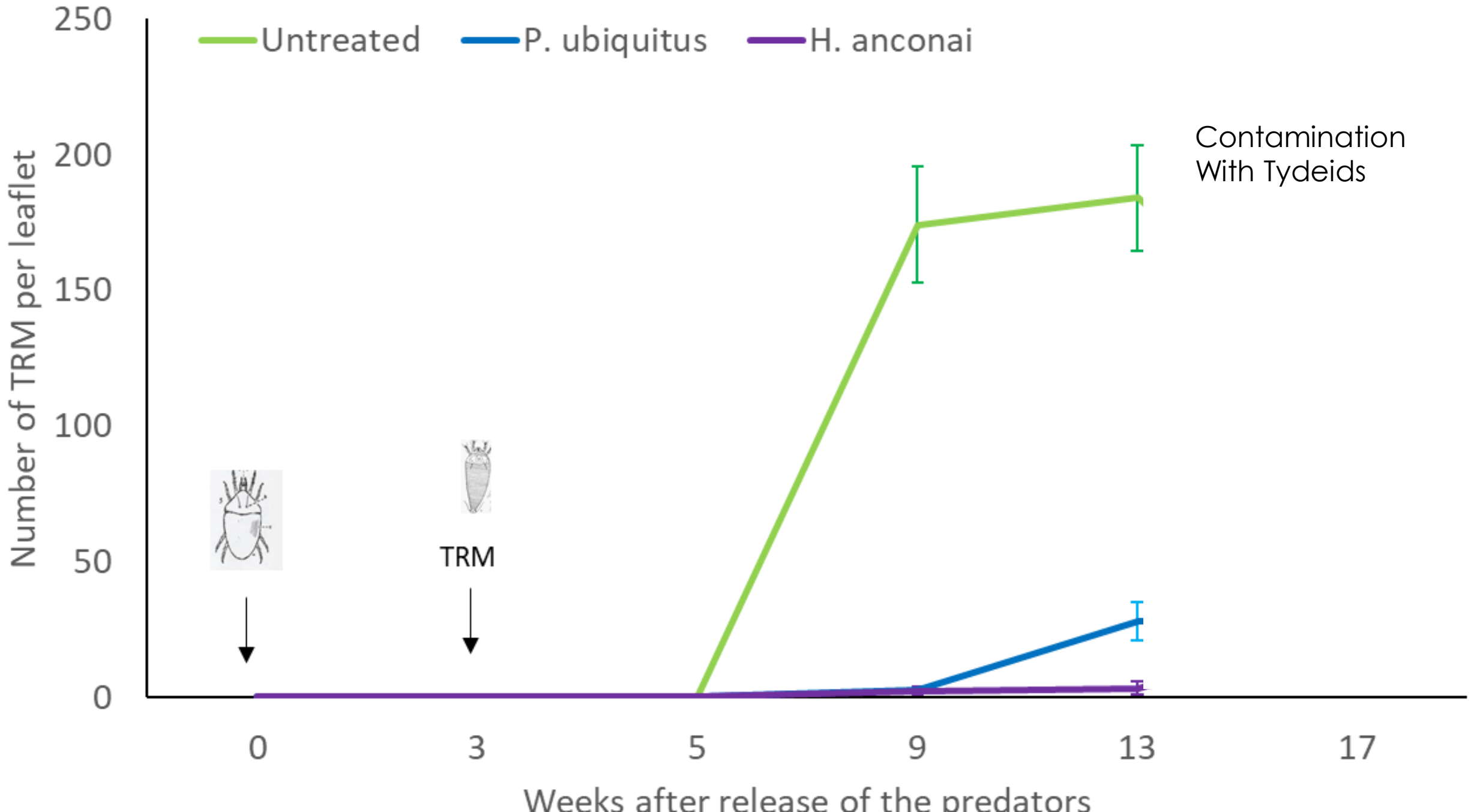
Trial preventative release 19-22 °C



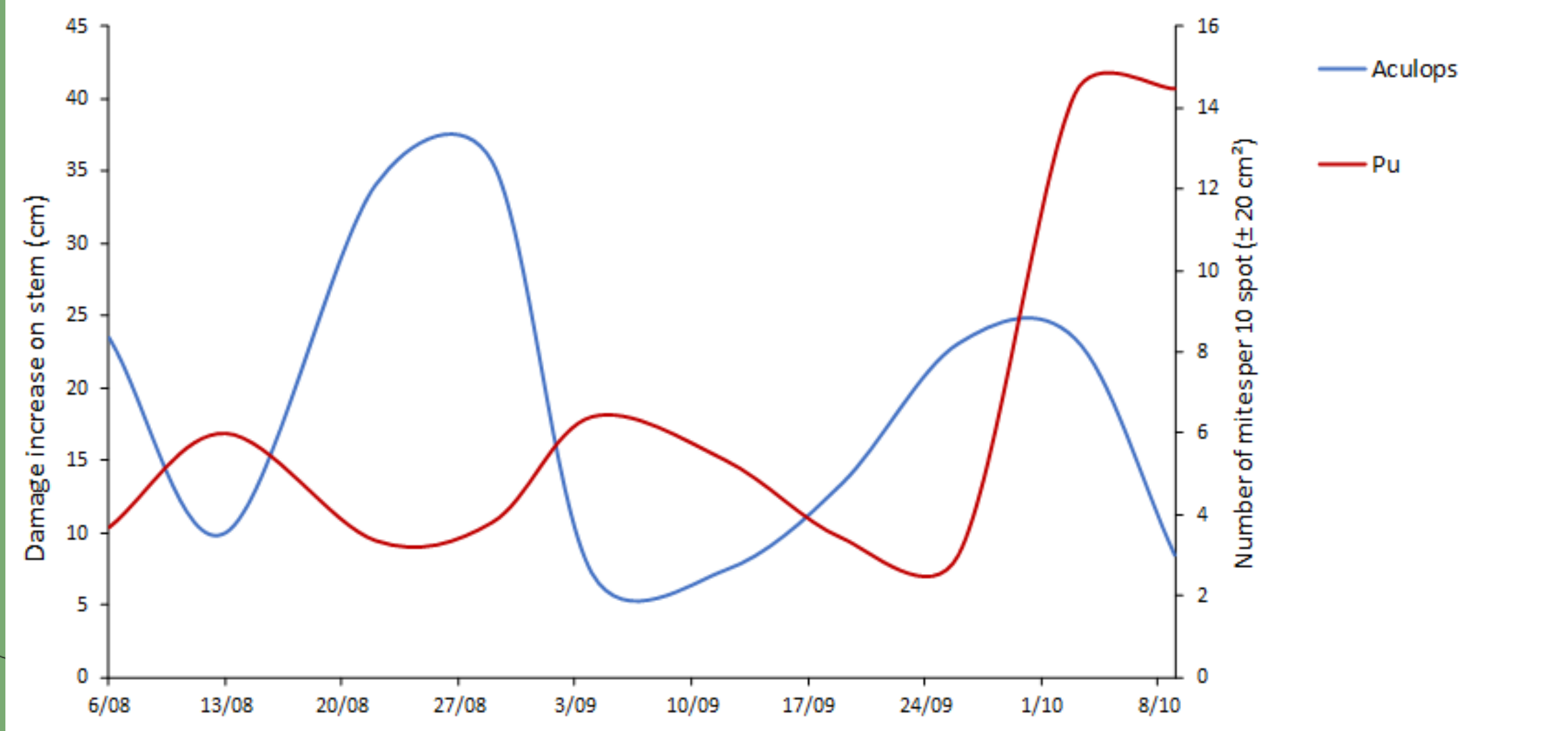
Trial preventative 19-22 °C

C : untreated control

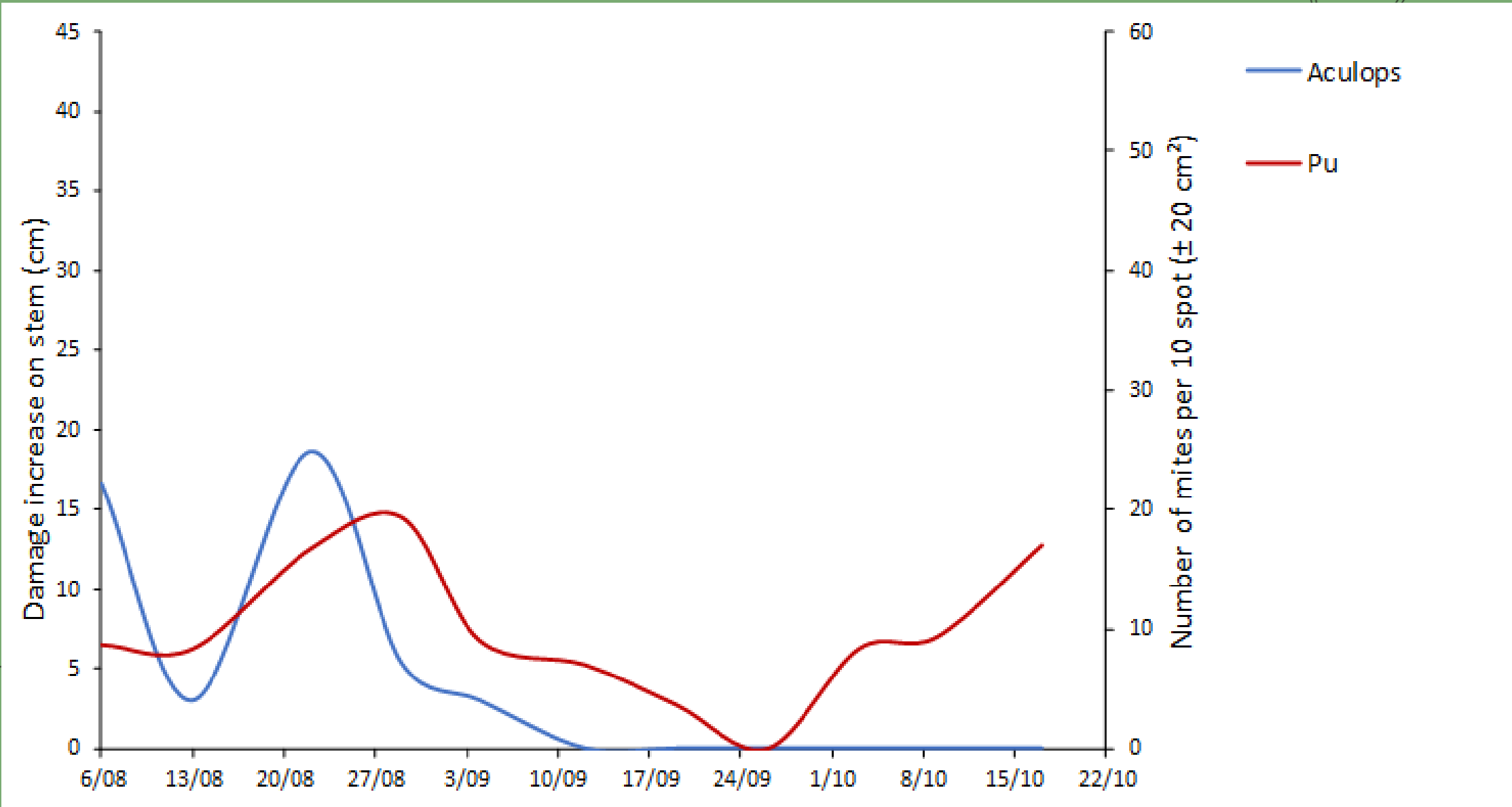




Low Pronematus release



High Pronematus release



Preventative use

- ❖ Can survive in absence of prey, due to feeding on pollen and plant sap
- ❖ Establishes well on tomato when Nutrimite (*Typha angustifolia* pollen) is supplied
- ❖ Strong population build-up in response to biweekly Nutrimite applications
- ❖ Can eradicate TRM/strongly reduce damage when used preventatively



Other eriophyid mites ?

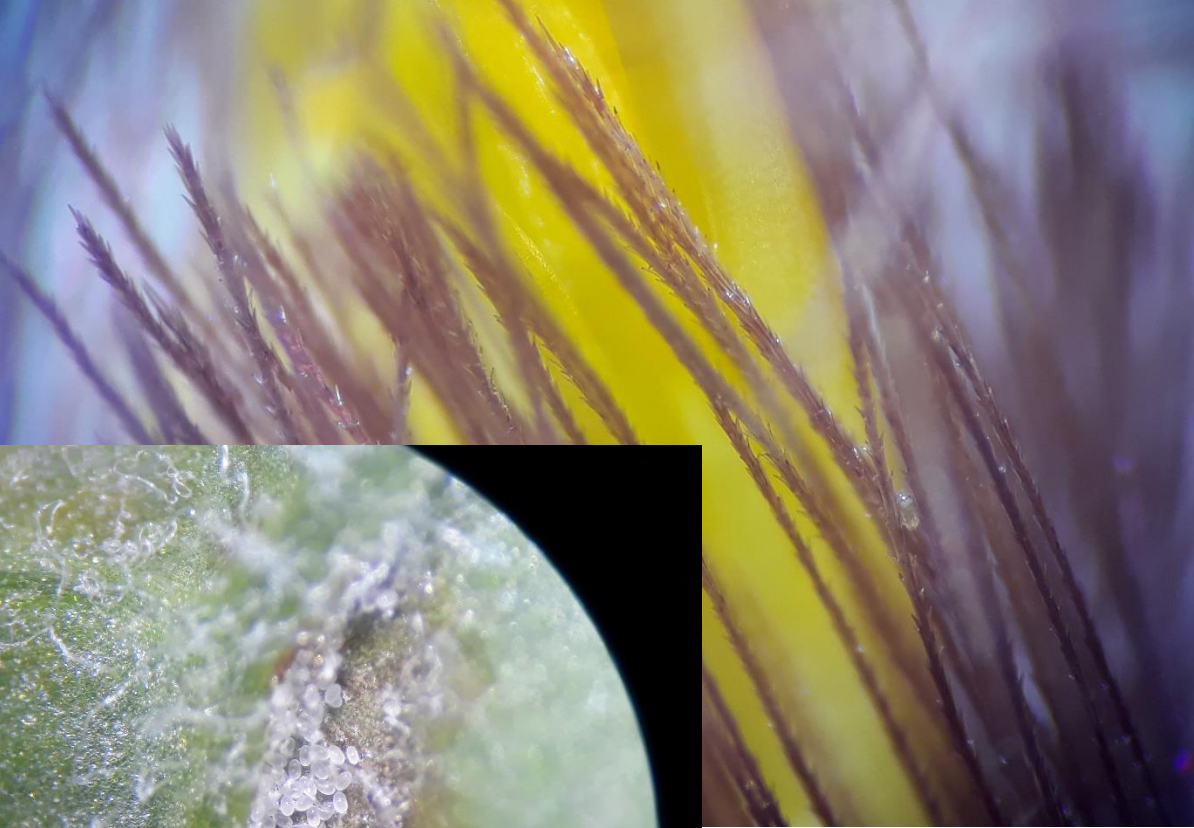
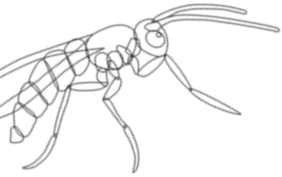


Redberry mite (*Acalitus essigi*)

Hemp russet mite (*Aculops cannibicola*)



Tarsonemids in ornamentals?



Thanks

