## Update on Chilli Thrips Management trial (2023)

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# **Efficacy trial (2023):** Determine the effectiveness of selected reduced-risk insecticides against chilli thrips in SHB blueberries

Treatments	Active ingredient
Apta®	Tolfenpyrad
Entrust®	Spinosad
Exirel®	Cyantraniliprole
Delegate®	Spinoteram
Sivanto®	Flupyradifurone
Spear - T®	GS-omega/kappa- Hxtx-Hv1a
Rimon®	Novaluron
Surround®	Kaolin clay
Delegate® + Rimon®	-



















### Life cycle of chilli thrips



### **Research design**

- Plant arrangement:
  - 5 blueberry bushes per plot
  - 5-plant buffer zone between plots
  - RCBD, 10 treatments, 4 replicates
- Insecticide application:
  - Treatments were applied twice,14 days apart
- Sampling and analysis:
  - Leaf samples were collected pre-treatment, 3, 7, and 14 days after each application (6 young blueberry shoots (5-6 leaves) per sample)
  - Damage ratings were recorded (based on amount of feeding injury)
  - Thrips were counted in the SFVIPM lab



# Weekly performance of various insecticides on adult chilli thrips in SHB blueberries (2023)



# **Overall** performance of various insecticides on **adult chilli thrips** in SHB blueberries (2023)



Treatments





# **Overall** performance of various insecticides on **chilli thrips larvae** in SHB blueberries (2023)



Treatments



#### Performance of Delegate®, Rimon® and Delegate® + Rimon® on adult chilli thrips in SHB blueberries (2023)



#### Performance of Delegate®, Rimon® and Delegate® + Rimon® on **chilli thrips larvae** in SHB blueberries (2023)



## Damage ratings

Data were obtained from the 3 inner bushes of each plot

- 0 = No injury
- 1 < 10% bronzing
- 2 =10 -30% bronzing
- 3 = 31 60% bronzing, curling, and darking
- 4 > 60% bronzing, curling, and darking



### Overall thrips damage ratings after insecticide application in SHB blueberries (2023)



Treatments



### **Biological control**

• Minute Pirate bugs, Orius insidiosus (Hemiptera:

Anthocoridae)

- **Predatory mites**, Neoseiulus cucumeris and Amblyseius swirskii are promising tools
- Entomopathogenic nematodes, Thripinema spp. parasitizes female thrips making them incapable of laying

eggs



Minute pirate bug, Orius spp.



Amblyseius swirskii



Entomopathogenic nematodes

# **Monitoring study:** Determine the most effective color and lure combination for monitoring chilli thrips in SHB blueberries

- Design: RCBD
- 9 treatments and 4 replicates
- Sticky traps: Blue, yellow and white
- Commercial thrips lures: Ag Bio & Alpha



- Traps serviced weekly
  - Rotated weekly within block
- Lures were replaced every 3 weeks









# Comparison of various sticky traps and lures for chilli thrips in SHB blueberries (2023)



### Summary and Findings (2023)

- **Delegate** was the **least effective pesticide** in controlling chilli thrips and resulted in the highest damage ratings
- Apta (conventional) and Surround (kaolin clay) (organic) demonstrated the highest effectiveness in controlling chilli thrips
- Entrust exhibited the lowest damage ratings among the pesticides evaluated
- No significant differences in color and lure combinations across all treatments
- Differences were observed among colors across treatments, but there was no significant difference in lure effectiveness across all treatments





#### Check out my lab and our work!

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**QUESTIONS?** 





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