



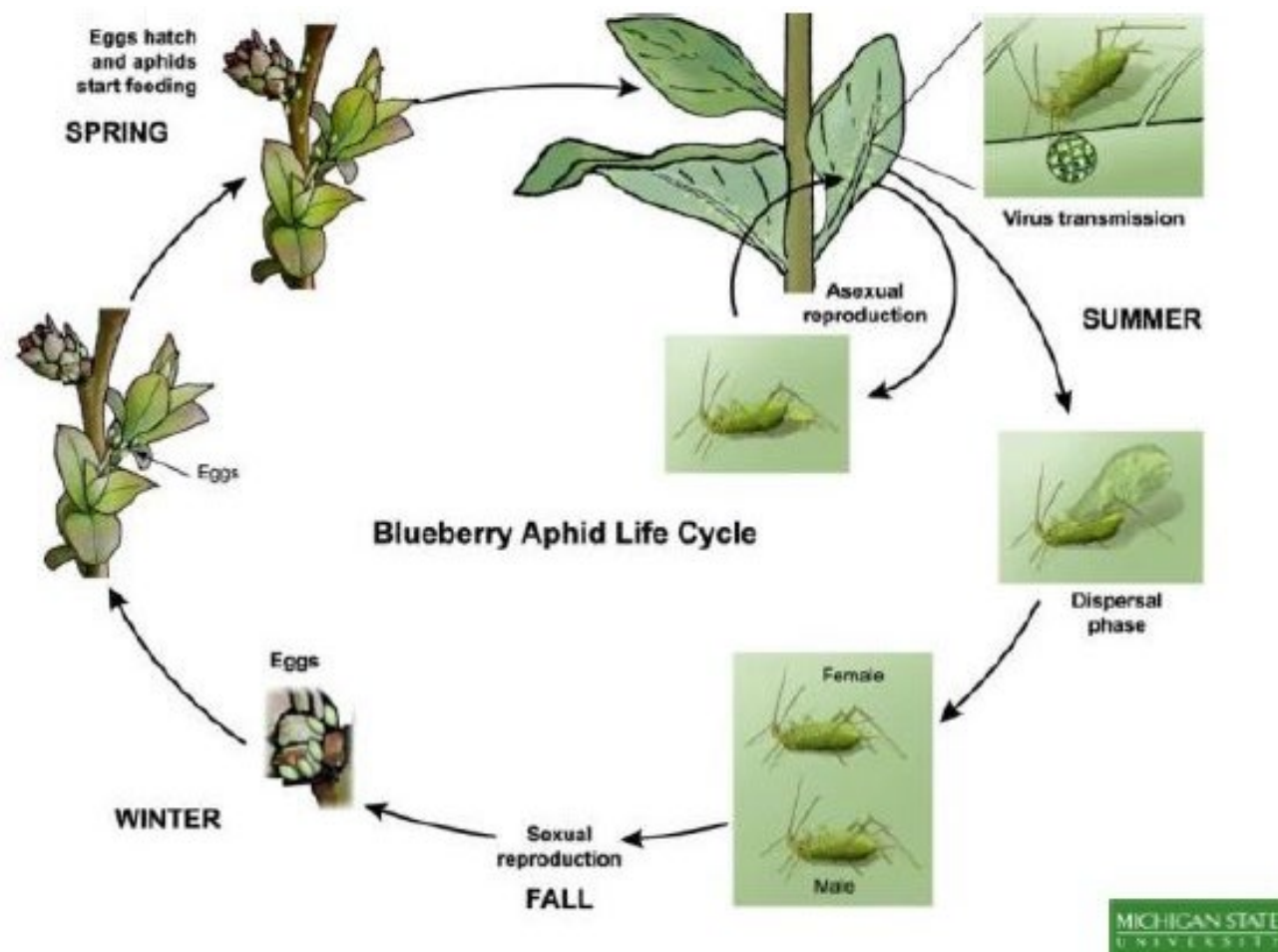
Kaolin Clay and Its Influence on Aphids, Beneficial Arthropods, and Plant Physiology

Washington State University, NWREC

Claire Winslow – Graduate Student

Dr. Louis Nottingham – Assistant Professor





- Blueberry aphid (ex: *Ericaphis* spp., *Illinoia* spp.) can be a biological vector of blueberry scorch virus (BIScV). (Rodriguez-Saona et. al 2019)
→ Can lead to crop loss for growers.
- Need alternative, yet effective management products.

Aphid management is a high priority for the Washington Blueberry Commission (west side of WA)!

(Schreiber & Washington Blueberry Commission, 2024)



Hypotheses

- 1.) Kaolin clay will **reduce aphid colonization** through a proactive fall application and subsequent spring application.
- 2.) Kaolin clay will **not** pose a risk to non-target organisms or adversely affect plant health.



Photo: Claire Winslow



Photo: Lisa Wasko DeVetter

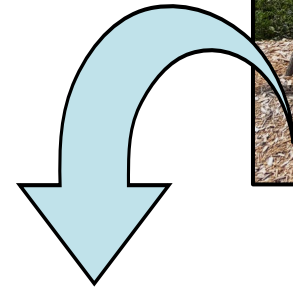
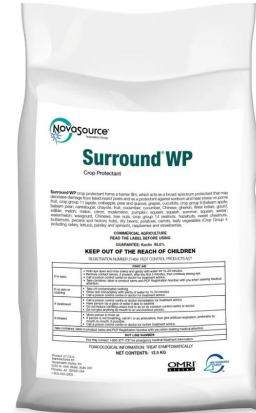


Photo: Claire Winslow

Kaolin Field Trial: Experimental Design

Duke cultivar (~3 years old)
3 treatments, 4 replicates
(RCB design)

- **A: Untreated check**
- **B: 2024 Fall application**
- **C: 2025 Spring application**



Plot Map: 8-9 bushes per plot



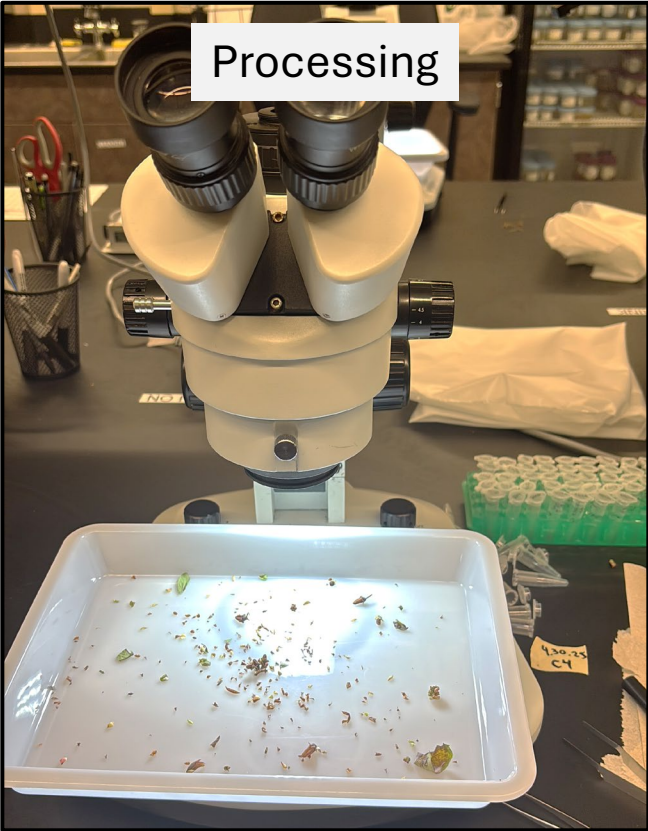


Kaolin Field Trial: Arthropod Sampling



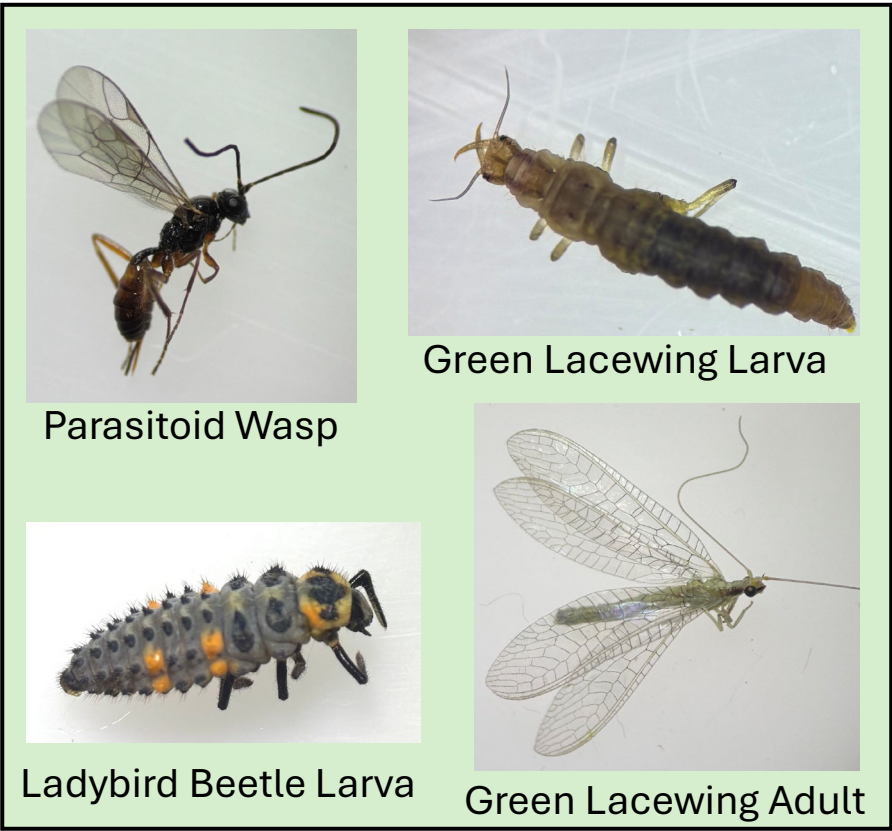
“A-vac” Sampling

Photo: Claire Winslow
(Osborne and Allen 1999)



Processing

Photo: Claire Winslow



Parasitoid Wasp

Green Lacewing Larva

Ladybird Beetle Larva

Green Lacewing Adult

Photos: Claire Winslow



Kaolin Field Trial: Pollinator Abundance



Photo: Lisa Wasko DeVetter

- Pollinator **scan sample dates**: May 2, 6, 9, 15, 21, 23, and 28.
- Counted **honeybees** (and other pollinators) on open flowers.
- ≥ 15 °C (59 °F), low wind, & no rain.

(Vaissière et. al 2010)

Kaolin Field Trial: Plant Health

1. Yield (blueberry weight)
2. Visual berry assessment
3. Fruit set (# berry / # flower)
4. Seed set (# seeds /berry)



Photo: Lisa Wasko DeVetter



1. Yield



2. Visual berry assessment



3. Fruit set

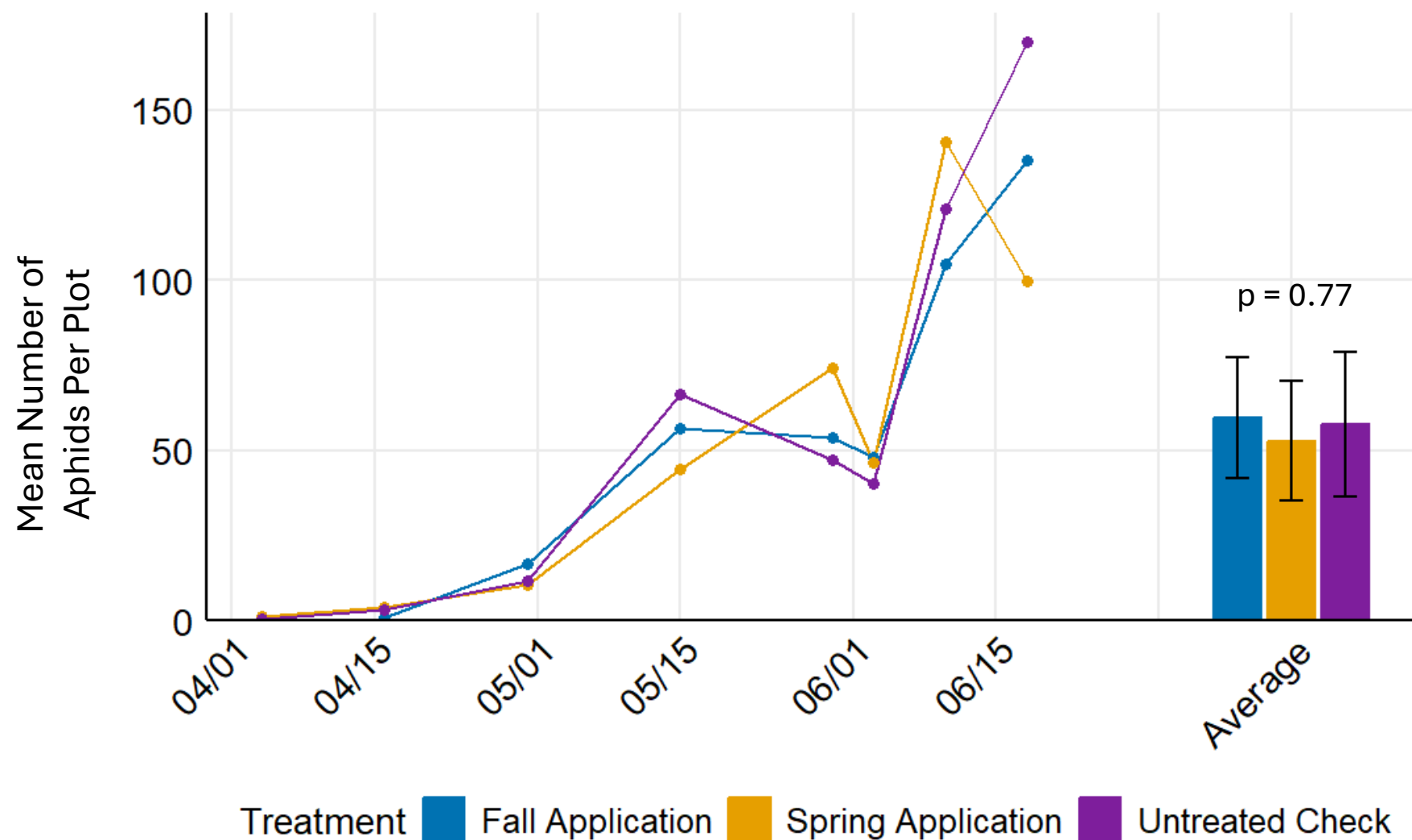


4. Seed set

Photos: Claire Winslow

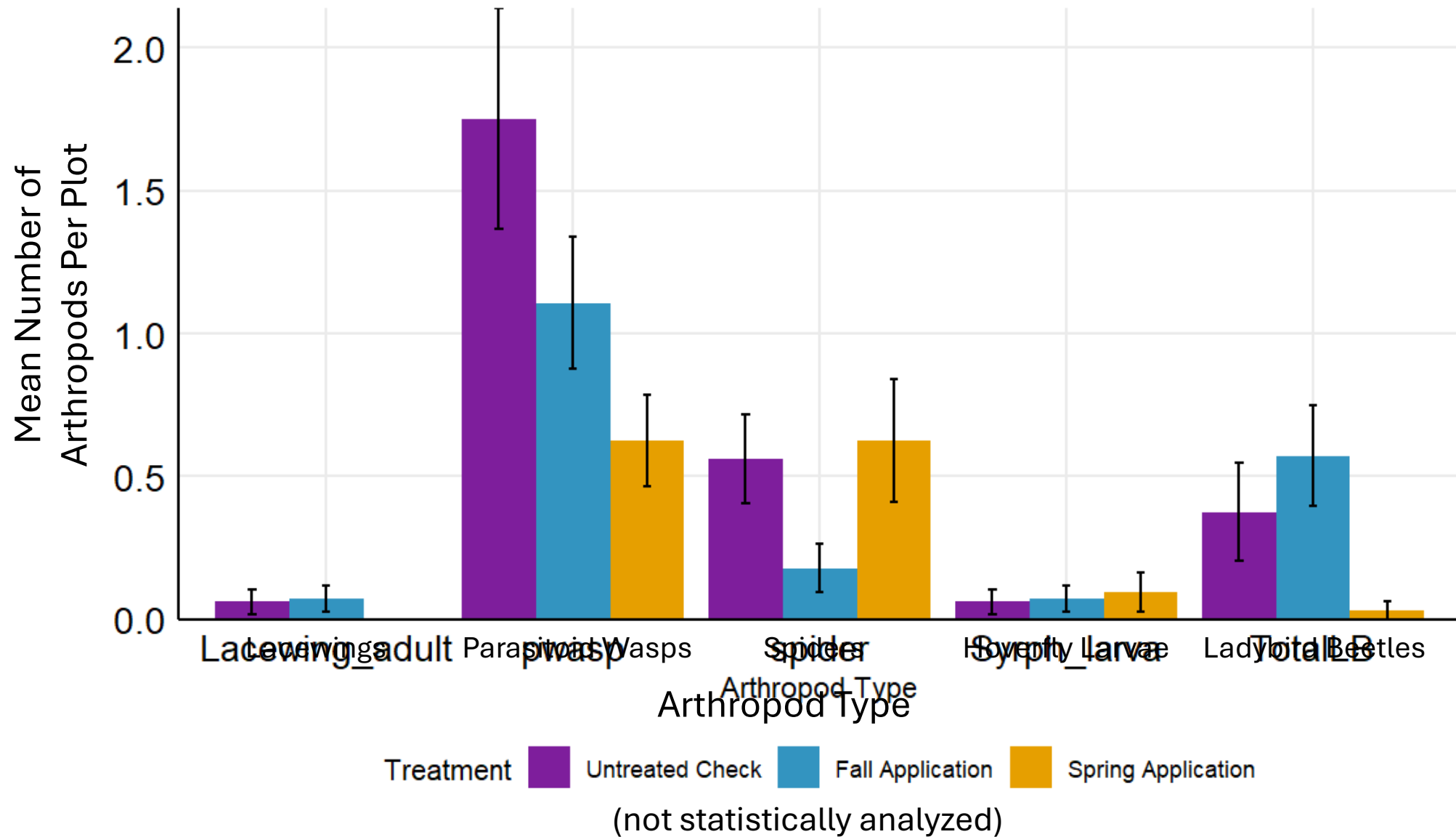


Spring 2025: Aphid Abundance Across Treatments



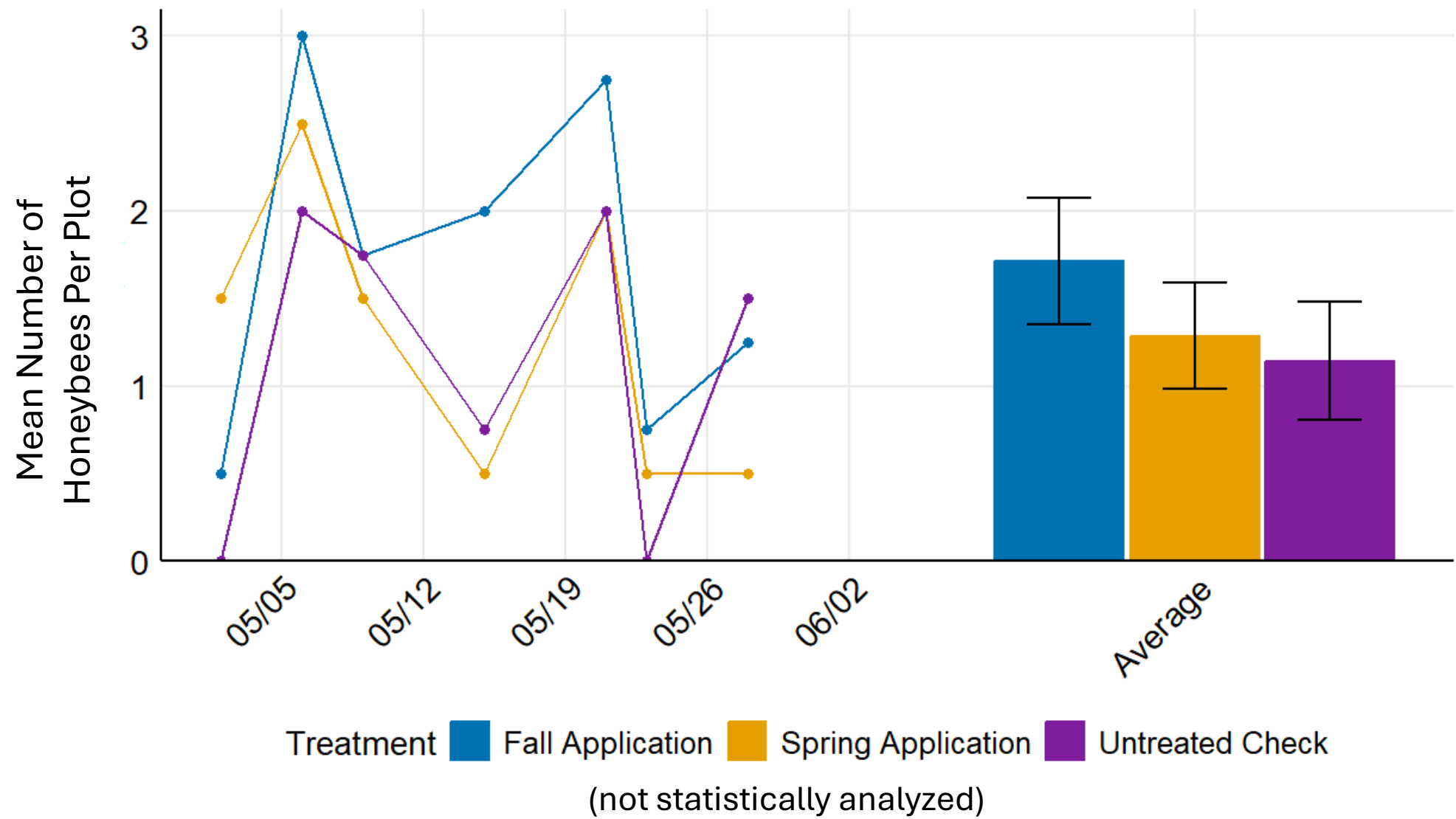


Spring 2025: Beneficial Arthropods Across Treatments





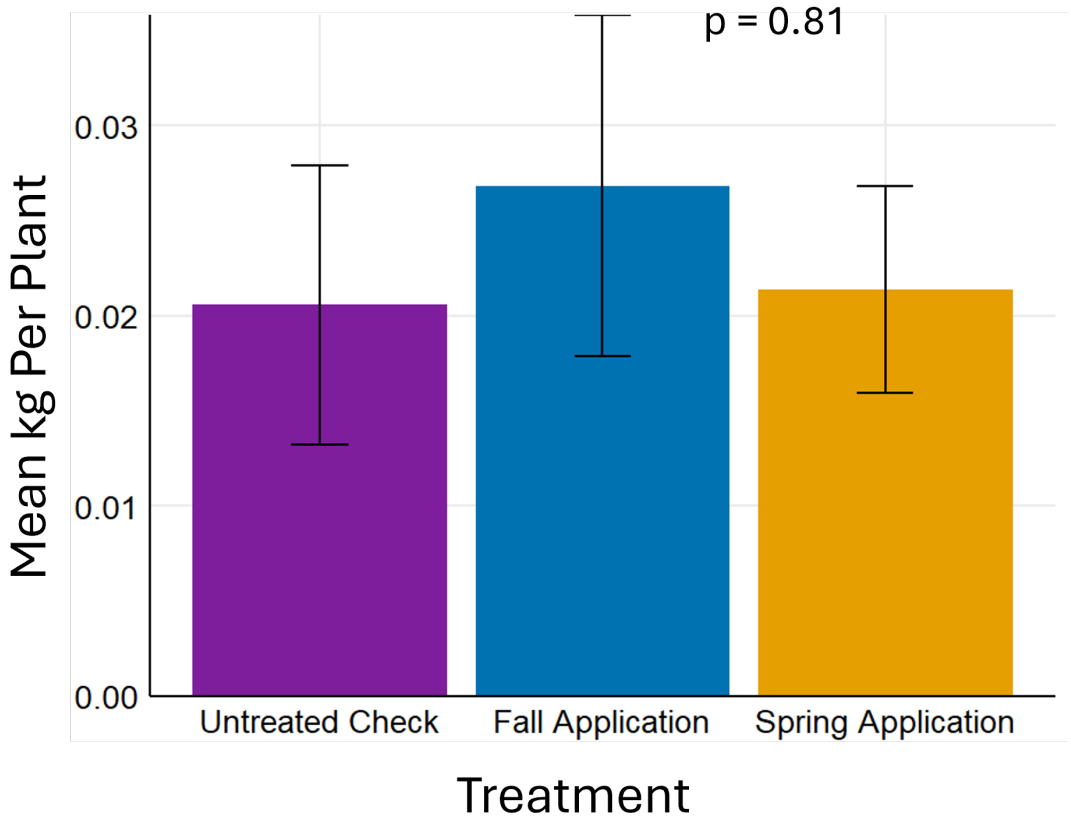
Spring 2025: Honeybee (*Apis mellifera*) Abundance Across Treatments



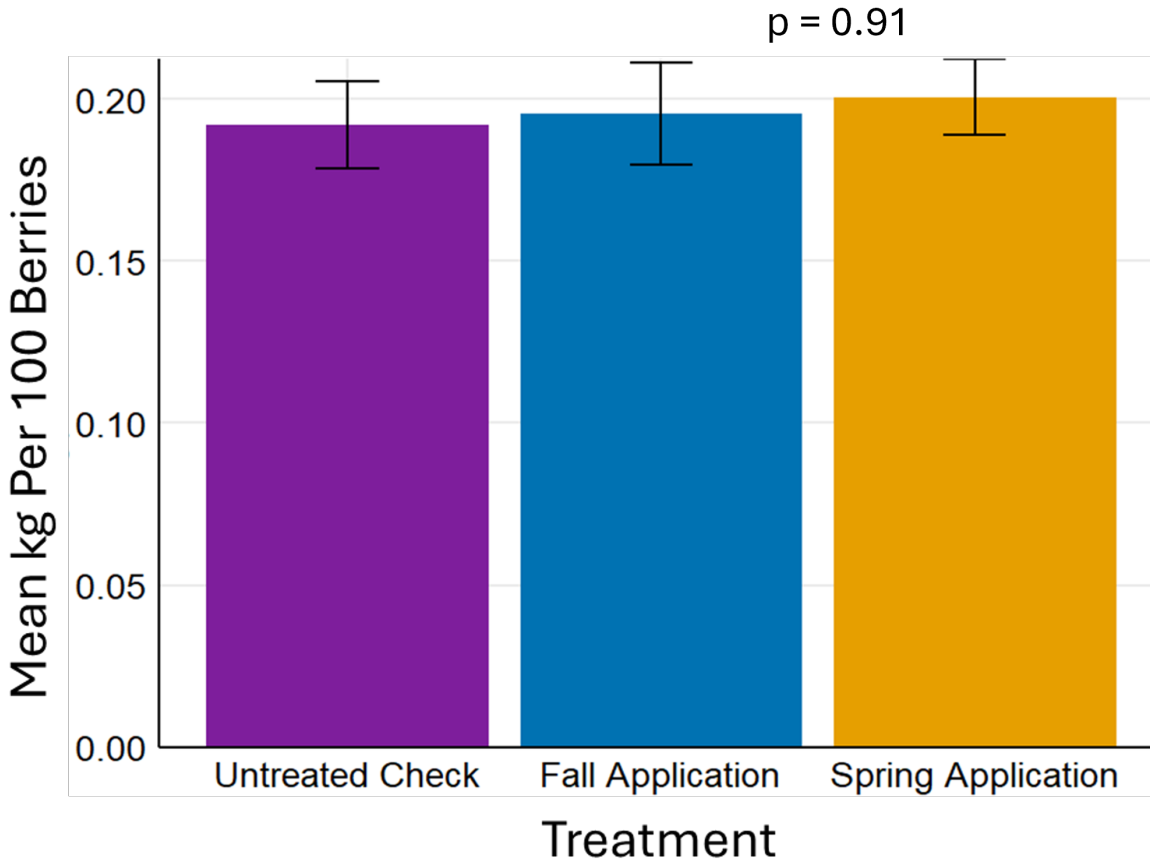


Spring 2025: Blueberry Harvest

Total Yield (kg/plant)

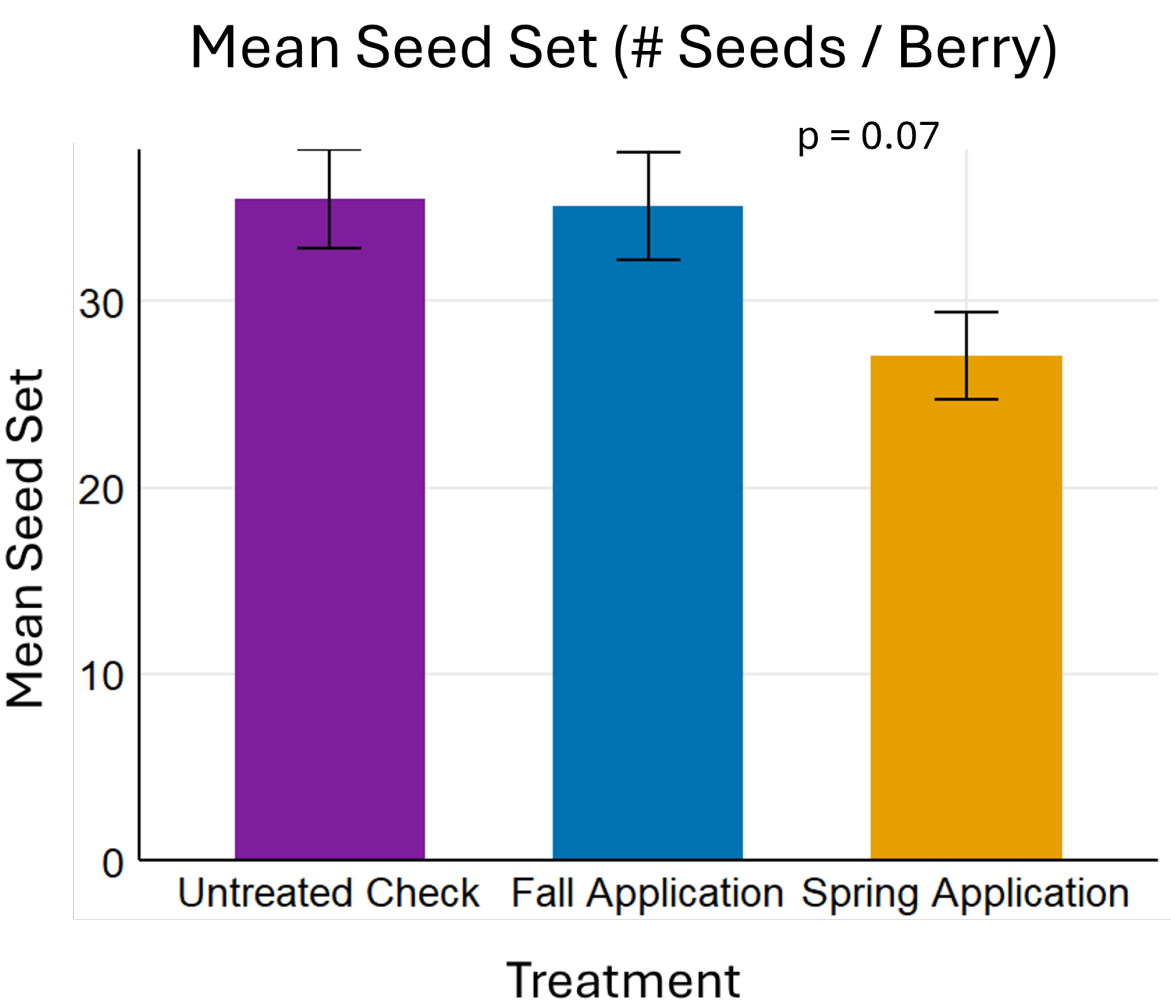
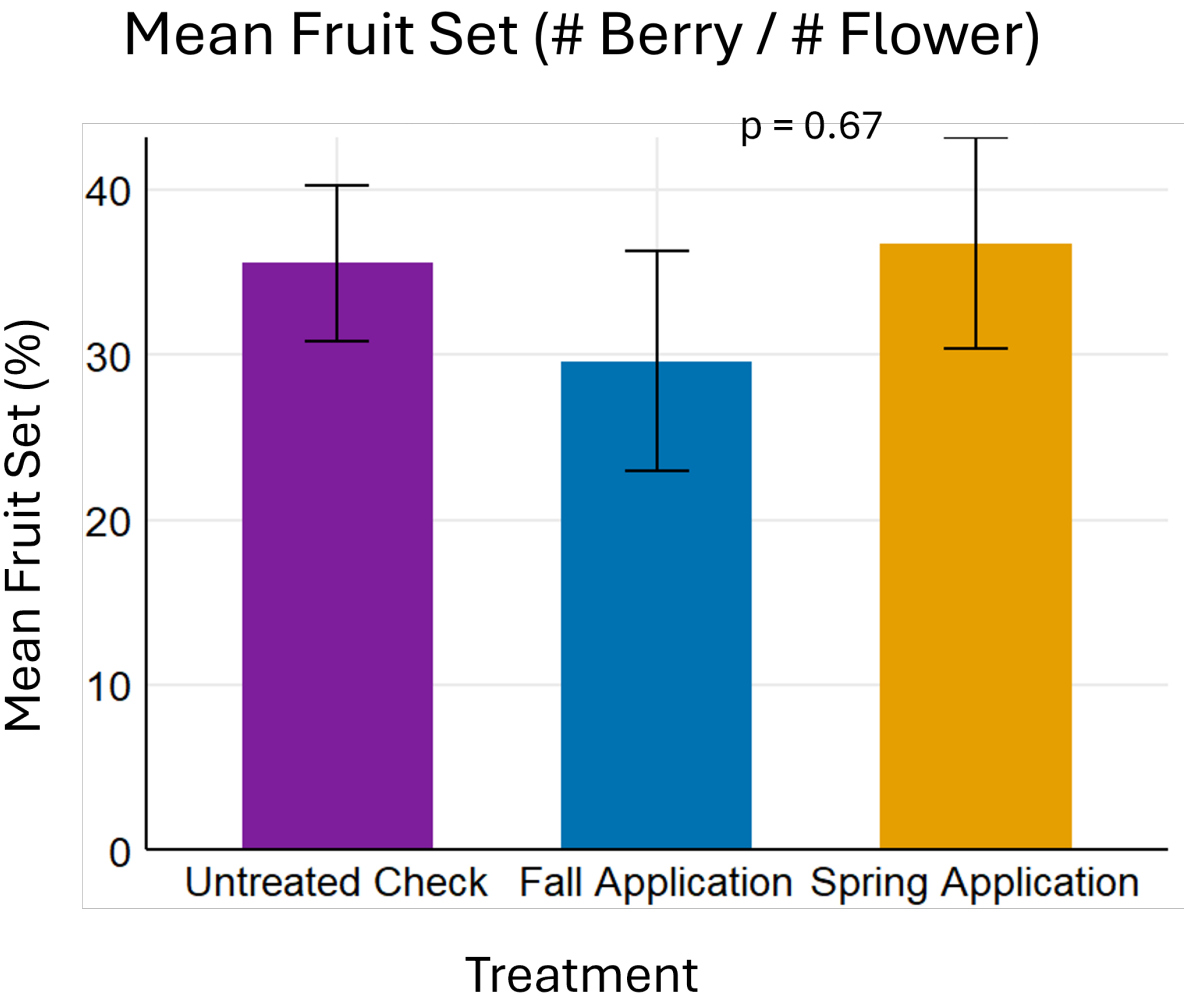


100 ct. Yield (kg/100 berries)





Spring 2025: Fruit Set & Seed Set



Key Takeaways

- Kaolin did not significantly suppress aphids. ☹️
- Kaolin did not reduce pollinator activity. 😊
- Kaolin did not significantly reduce yield, fruit set, or seed set. 😊



Photo: Claire Winslow



Photo: Lisa Wasko DeVetter

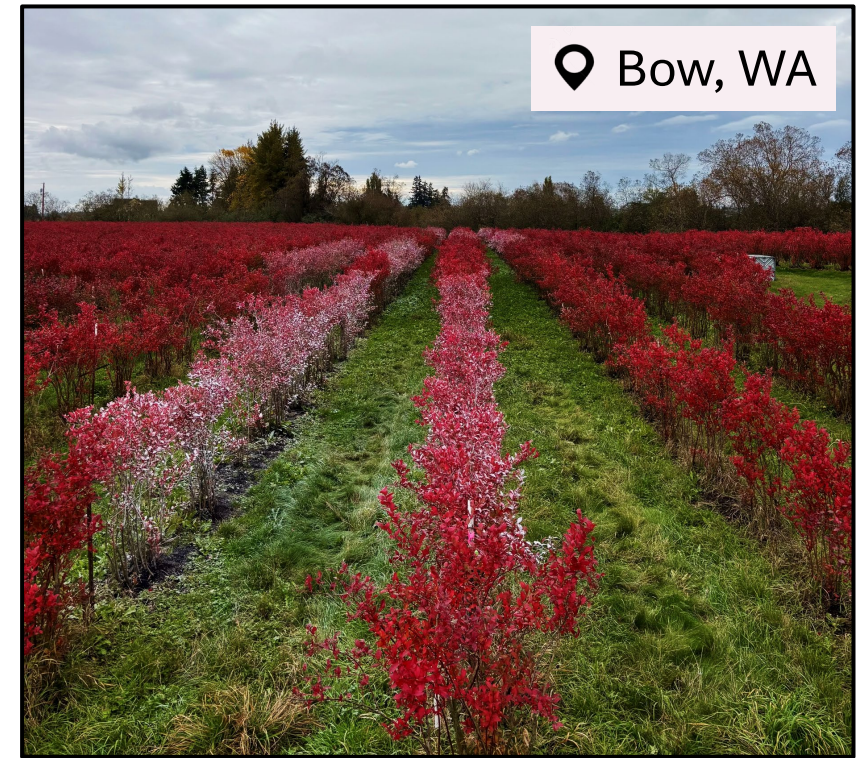


Photo: Claire Winslow

Current Kaolin Field Trial

Fall 2025 – Spring 2026

- Cultivar: **Bluecrop** (>50 years old)
- Commercial organic farm
- 10 plants per plot
- 4 treatments:
 - Untreated check
 - Fall application
 - Spring application
 - **Fall & spring application**





Thank you!



References



Washington Commission on Integrated
Pest Management



claire.winslow@wsu.edu – Claire Winslow
louis.nottingham@wsu.edu – Louis Nottingham



**NWREC Small
Fruit Horticulture**



WASHINGTON STATE UNIVERSITY
Mount Vernon Northwestern Washington
Research and Extension Center