



# **Cranberries in BC**

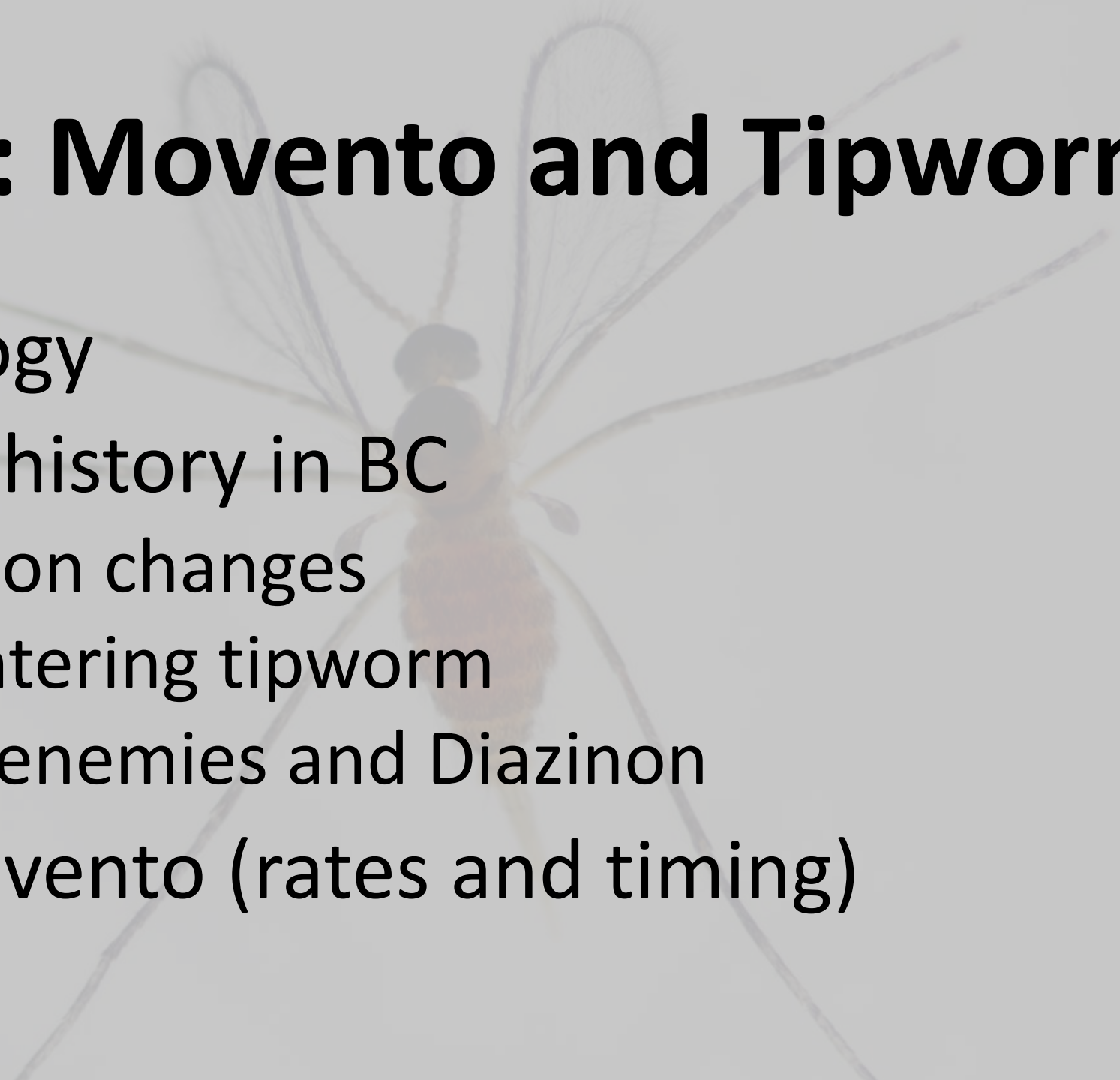
**Part 1: Movento and Tipworm**

**Part 2: 2018 Firmness Projects**

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Ocean Spray Cranberries**

# Part 1: Movento and Tipworm

- Pest biology
- Tipworm history in BC
  - Population changes
  - Overwintering tipworm
  - Natural enemies and Diazinon
- Using Movento (rates and timing)





# Quick Facts on Tipworm Biology

- Midge adult
- Larvae damage the plant
- Feed on and kill tips
- Prevent bud set
- Contribute to fluffy, branched canopies
- Multiple generations



Photo credit: Warren Wong















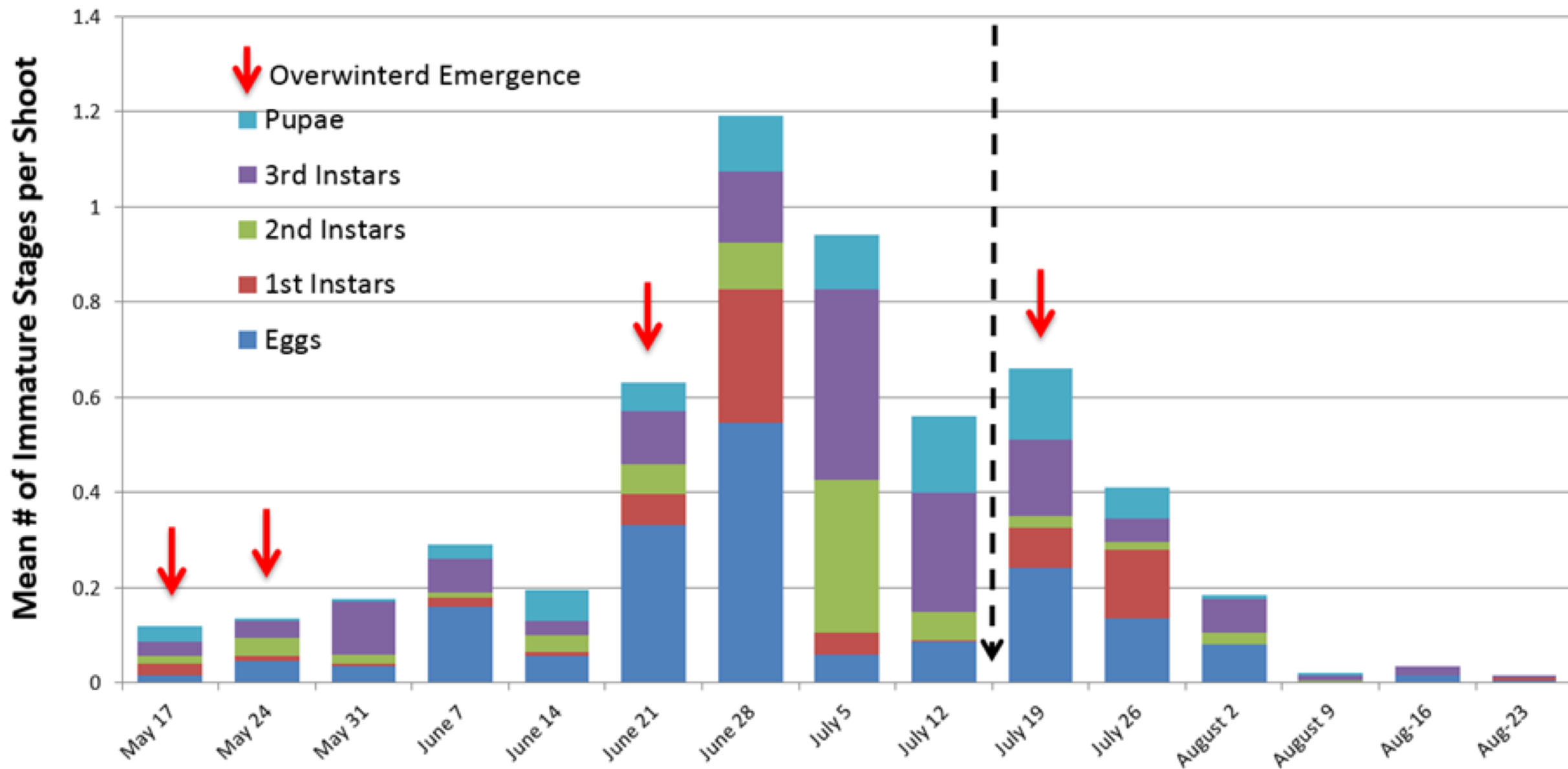
Photo credit: Warren Wong

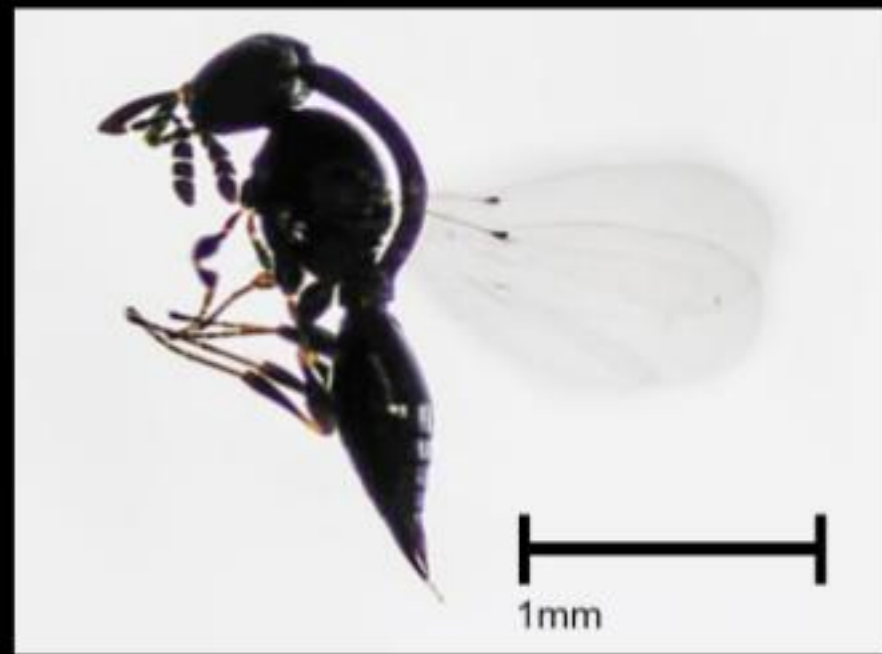




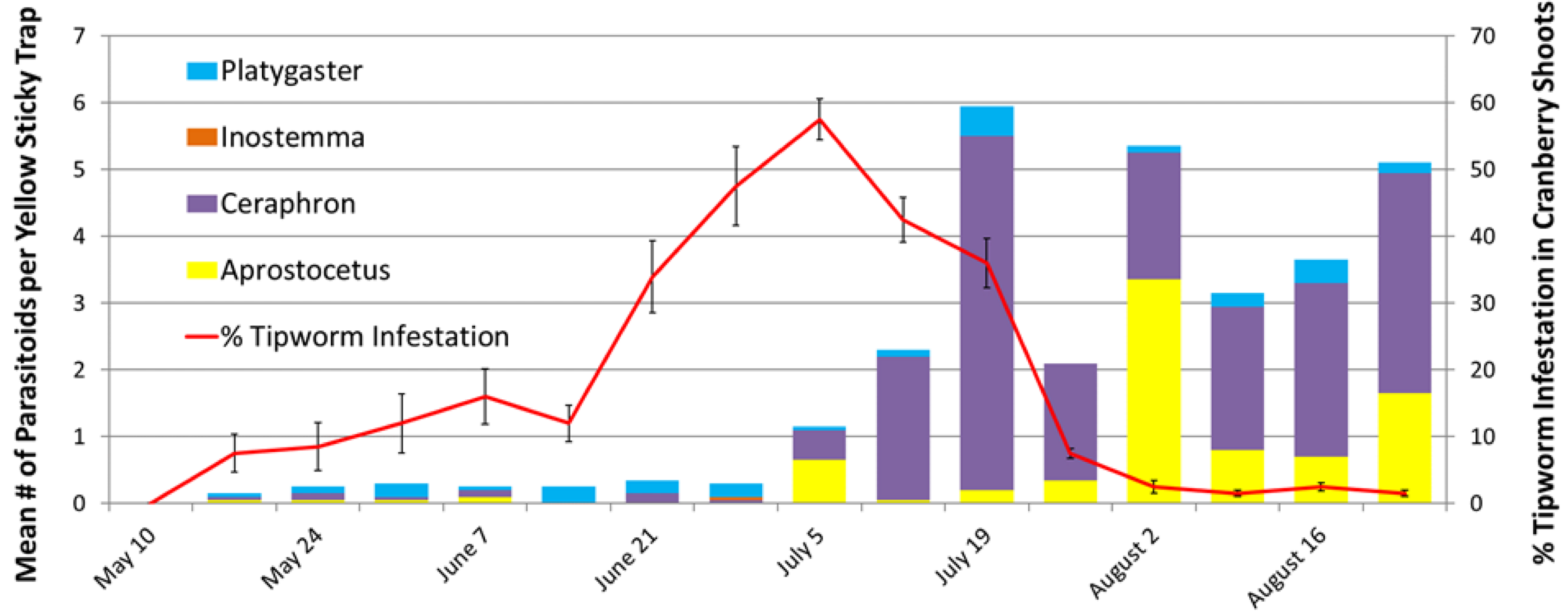


## Immature *D. oxycoccana*, Adult Emergence, and Insecticide Applications





## Parasitoid Detection and *D. oxycoccana* Infestation Levels (%)

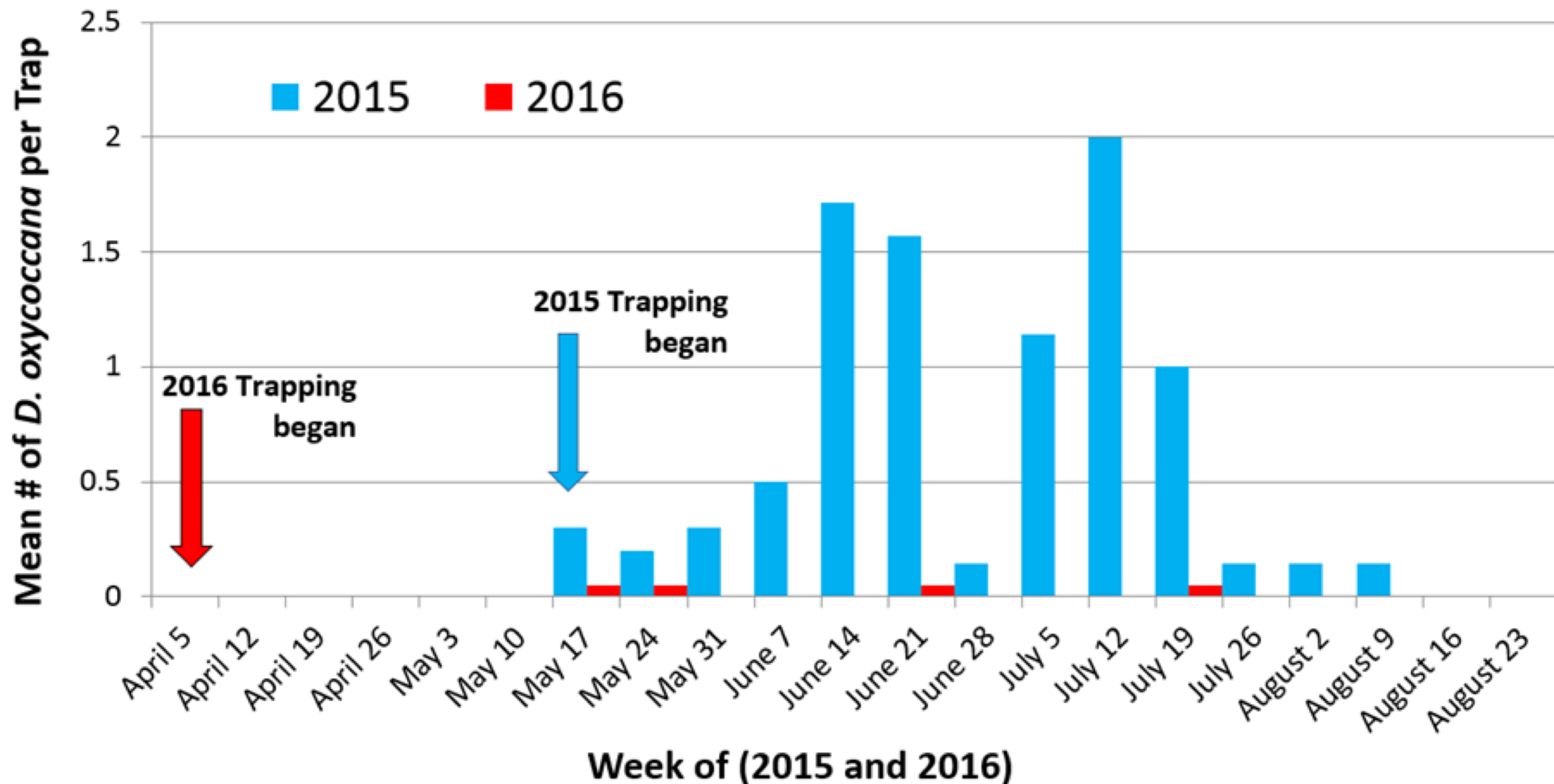








## 2015 and 2016 *D. oxycoccana* Overwintering Emergence



# Summary of Tipworm Control in BC

- Movento is a systemic, targeted product
- Loss of Diazinon caused a rebound in natural enemies
- Spray timing reduces number of overwintering tipworm
- Growers approached this as a multi-year control program





# Tipworm Management Plan Example from BC

	YEAR 1	YEAR 2	YEAR 3
Application #1	Post-Bloom 5-6 oz/acre (up to ~7 oz/acre if chemigating)	Post-Bloom 5-6 oz/acre (up to ~7 oz/acre if chemigating)	Post-Bloom 5-6 oz/acre (up to ~7 oz/acre if chemigating)
Application #2	10-14 days after application #1 5-6 oz/acre (up to ~7 oz/acre if chemigating)	N/A	N/A

Ocean Spray PHI: 40 DAYS

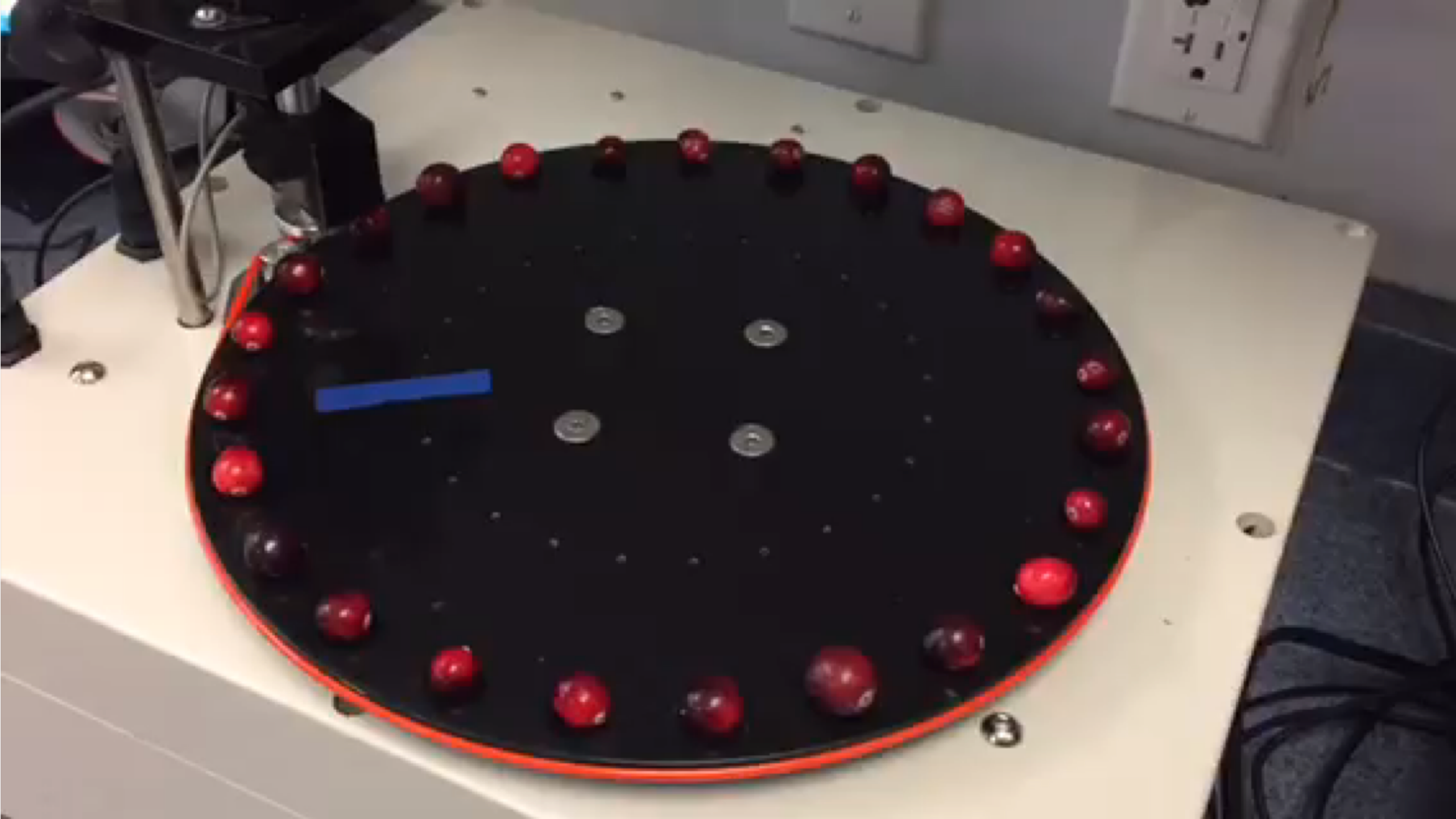
# Part 2: 2018 Berry Firmness Projects

- Why do we care about firmness?
- Firmness work/projects completed in 2018
  - Harvest water (firmness, defect, temperature)
  - Berry color







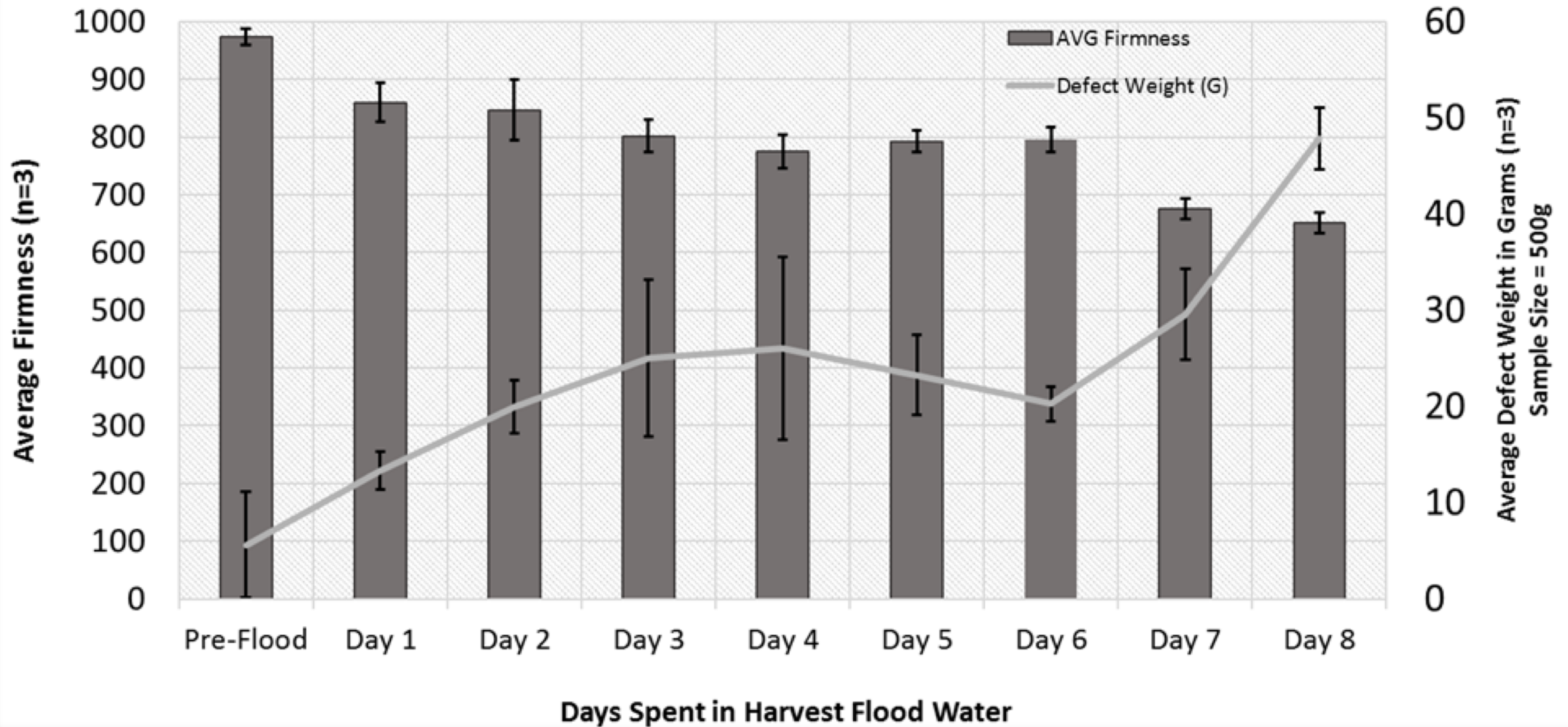






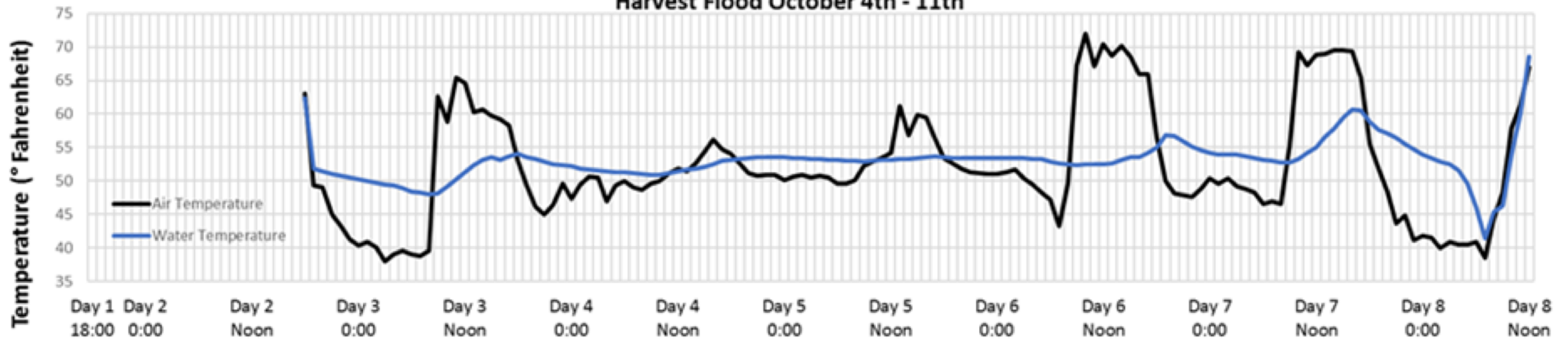


## Field 1 Firmness and Defect in Harvest Flood Water





Field 1 Air and Water Temperature (° Fahrenheit)  
Harvest Flood October 4th - 11th





Pre-Flood 2



Day 8 - 1



# Firmness Summary

- Expect significant quality decline by day 3 or 4
- Expect greater quality decline in warm weather
- Beating/pumping/elevating remain greatest contributors to firmness declines

# Thank you! Questions?

## **Acknowledgements**

BC Grower Cooperators

Sheila Fitzpatrick (Agriculture & Agri-Food Canada)

<http://www.bccranberries.com/growers/research-project-results/>

Warren Wong (Agriculture & Agri-Food Canada)