

# Oregon Research 2023

## Tipworm and Weed Control

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# Cranberry Tipworm (*Dasineura oxycoccana*)

- EMERGENCE MONITORING
- EFFICACY OF PRE-BLOOM FANFARE EC
- INVESTIGATION INTO THE NEED FOR POST-BLOOM MOVENTO



Photo from University of Maine Extension



# Experimental Design

- This experiment was a randomized complete block design consisting of two treatments plus the control.
- Treatment one: Fanfare EC applied at the maximum application rate on May 17<sup>th</sup>. This application was made to all plots except the control.
- Treatment two: Movento applied on July 26<sup>th</sup> at the maximum application rate in addition to early season Fanfare EC.
- Control: Each control plot contained an emergence trap.



# First Emergence

- Traps checked weekly.
- First emergence was found on May 15<sup>th</sup>.
- OSU extension found the first immature tipworm in their IPM program during the same week (a few eggs).
- Bud elongation had begun in the bog.
- This growth stage of emergence is consistent with research conducted in other growing regions.





# Upright Collection

- 25 uprights were collected weekly from each plot.
- Uprights were dissected under a microscope and immature tipworm stages recorded.



Picture Taken Oct 2nd

Photos below are from University of Maine and Wisconsin Extension.



Eggs



1<sup>st</sup> Instar



2<sup>nd</sup> Instar



3<sup>rd</sup> Instar



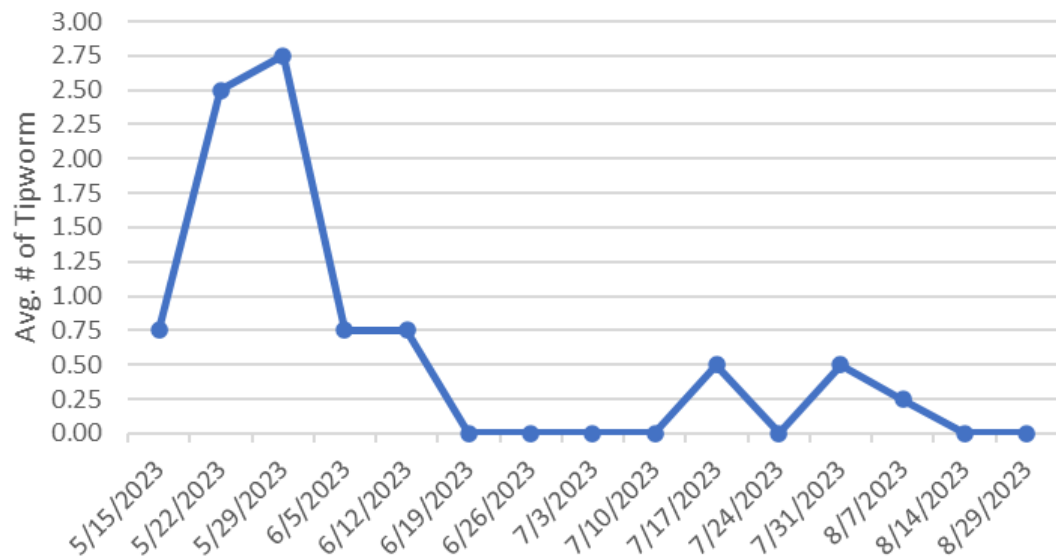
Cocoon



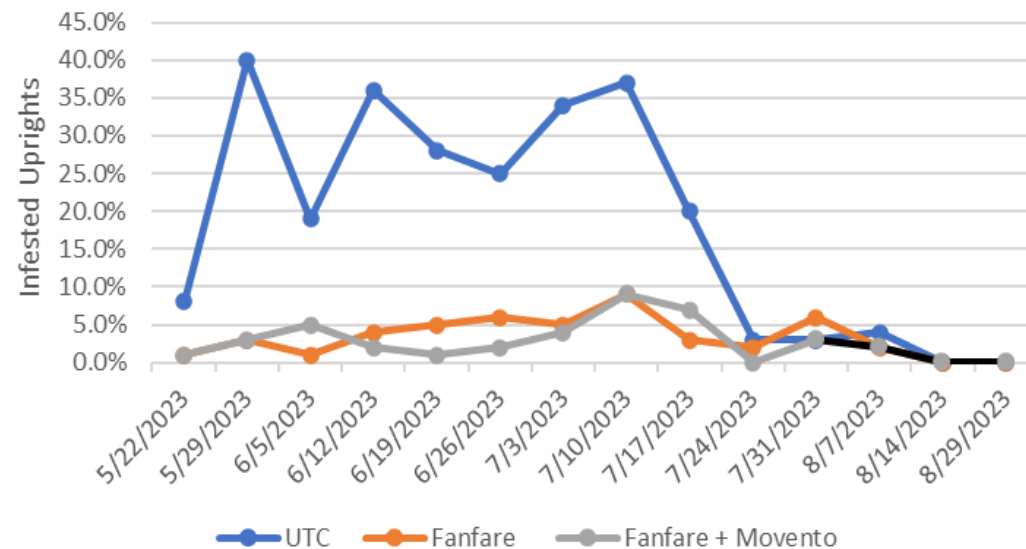
Pupae



### Tipworm Emergence

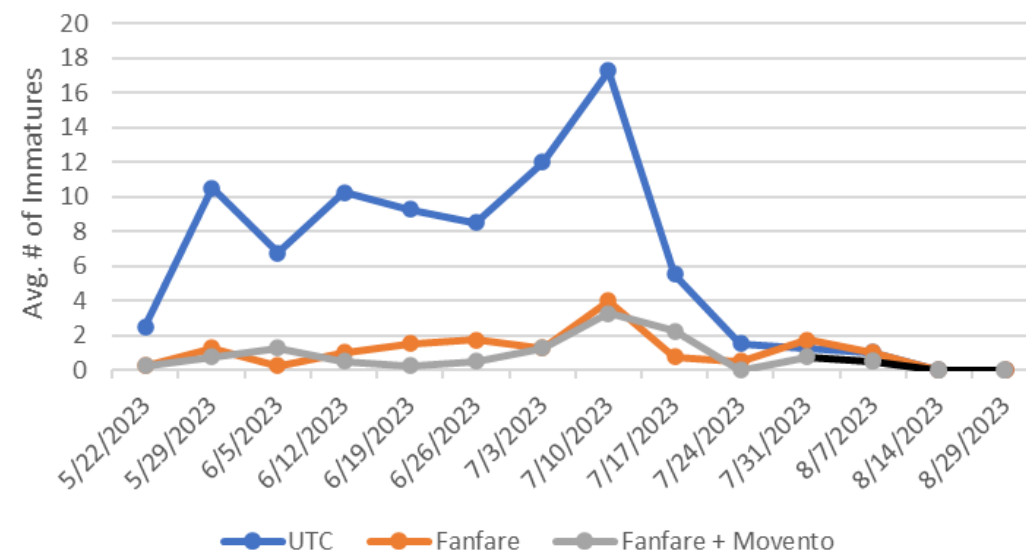


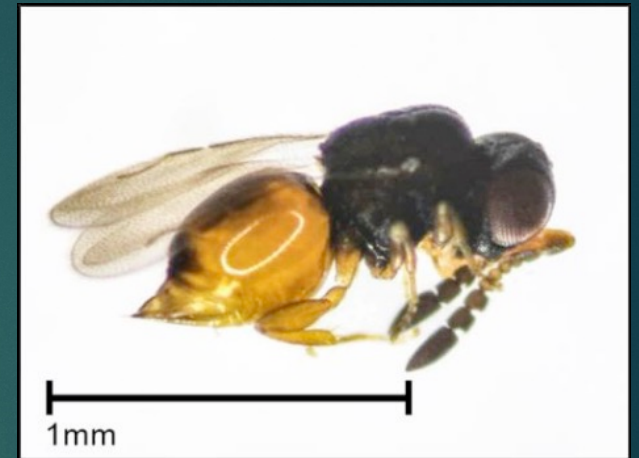
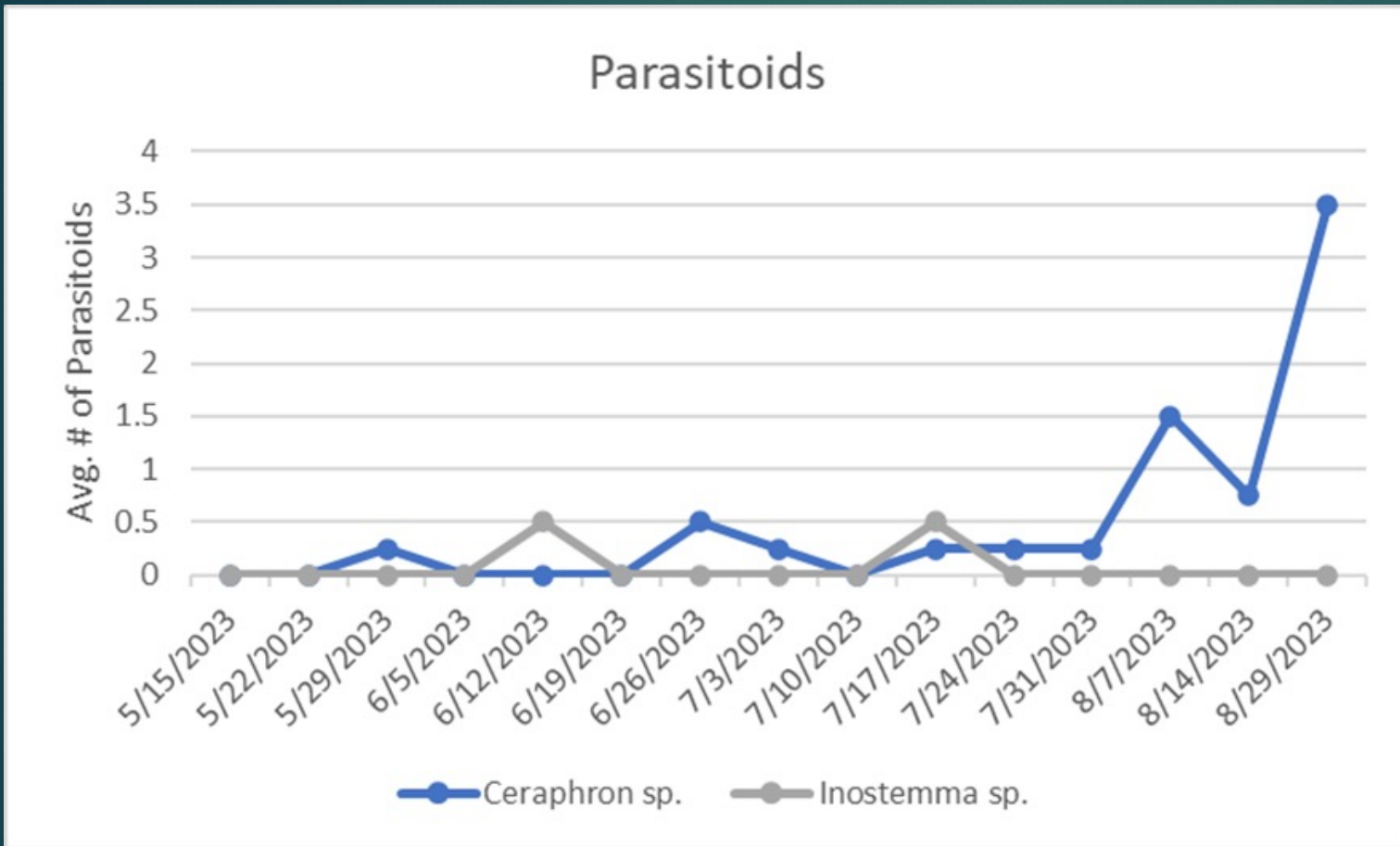
### Uprights with Live Immature Tipworm



- The first two weeks of emergence led to a rapid increase in immature tipworm on 5/29.
- A dramatic decrease occurred after the 7/10 sample date .
- Fanfare EC suppressed tipworm for the duration of experiment.

### Immature Tipworm Count





*Ceraphron* sp.



*Inostemma* sp.



# Conclusions

- This experiment confirms shoot elongation as the time of first emergence.
- Percent of uprights infested increased to a maximum 2 weeks after emergence.
- Monitoring of uprights is important for making a timely application.
- One well timed, pre-bloom application of Fanfare EC at the maximum application rate suppressed a significant tipworm population.
- There is a dramatic decrease in population towards the end of bloom.
- Tipworm parasitoids are present and may help reduce larvae that would otherwise overwinter.
- Due to the natural decline in tipworm population post-bloom treatment with Movento was unnecessary in this trial.



# Sedge and Moss Control

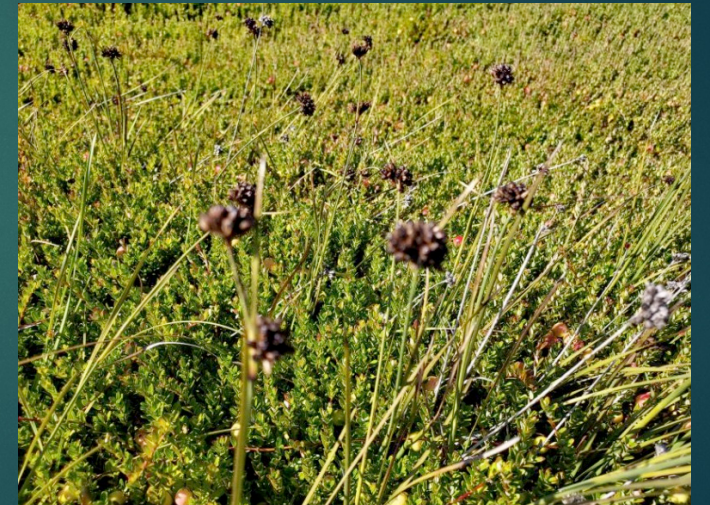
- Sphagnum moss control with “product X” continued at lower rates.
- Slough sedge and three-square bulrush trials with “product X2”.



*Sphagnum* sp.



Slough Sedge



Three-Square Bulrush



# Sphagnum Moss Control

- Rates were cut in half (2 and 3 oz/A).
- Full control achieved at 2 oz/A.
- After the Feb 13<sup>th</sup> application, moss began recovering in mid-October.
- A second application at these rates was made on Nov 27<sup>th</sup>.
- Monitoring to determine the efficacy of second application.
- If control is obtained and lasts into October. We are on the right track to obtaining year-round control.
- Future experiments will be conducted to confirm results and fine tune application timing.



2 oz/A 5/22



Untreated Moss 5/22



Recovering Moss 10/13



Untreated Moss 10/13



# Sedge Control

- Product X2 gave nearly complete control of three-square bulrush when applied at cabbage head/budbreak.
- No control of slough sedge was obtained.
- No significant difference in yield and no toxicity to cranberries observed.
- A second year of experiments will be conducted, and a label pursued.



Untreated control July 20th



Low rate of Product X2 July 20th



- Sustainability survey available for OSC growers.
- March 8<sup>th</sup> Deadline.

# Questions?