

# SCALE INSECTS .... AGAIN

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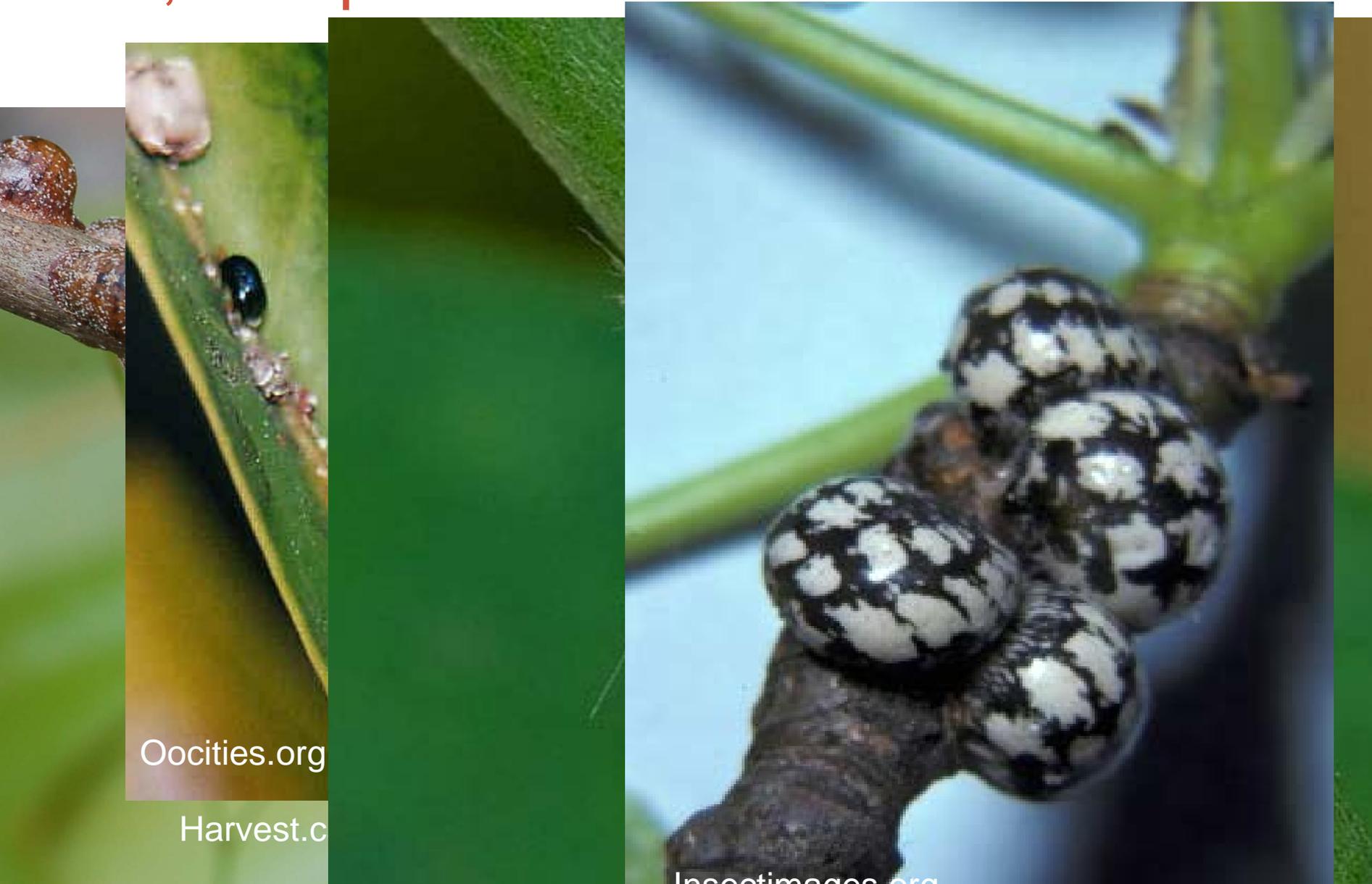
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# What are scale insects???

- Tiny, sucking insects
- Feed on plant material
- Shield-like, protective scale
- Relatively immobile



# ~8,000 species in the world



Oocities.org

Harvest.c

Insectimages.org

# Scale Insects in cranberries

**Soft Scales**

**Brown soft scale**

**Armored Scales**

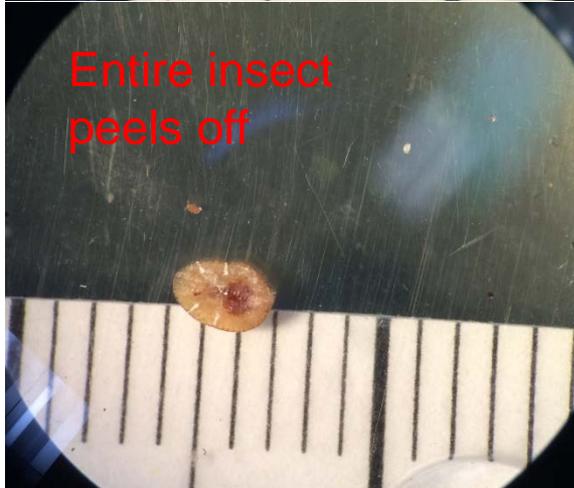
**Greedy scale**

**Dearnness scale**

**Putnam scale**

## • Brown Soft Scale

- Soft Scale = insect and shell all one piece



## • Greedy Scale

- Armored scale = insect and shell separate



- **Brown Soft Scale**

- Usually found on leaves



- **Greedy Scale**

- Primarily found on stems



# • Brown Soft Scale

- Produces honeydew  
→ sooty mold



# • Greedy Scale

- No honeydew = no sooty mold



# Brown Soft Scale: Treatment

- Timing → winter/early spring.
- Repeat treatments
  - 2% insecticidal soap (M-Pede)
    - +/- OP



Brown soft scale

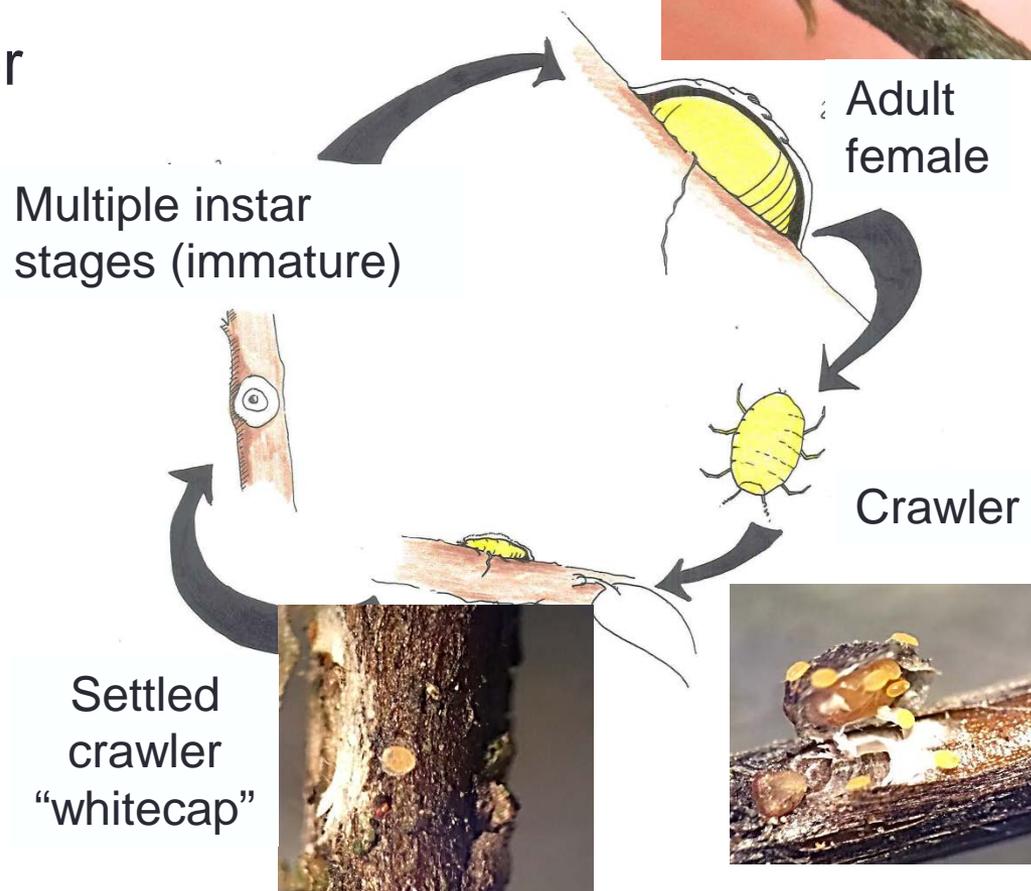
# Greedy scale



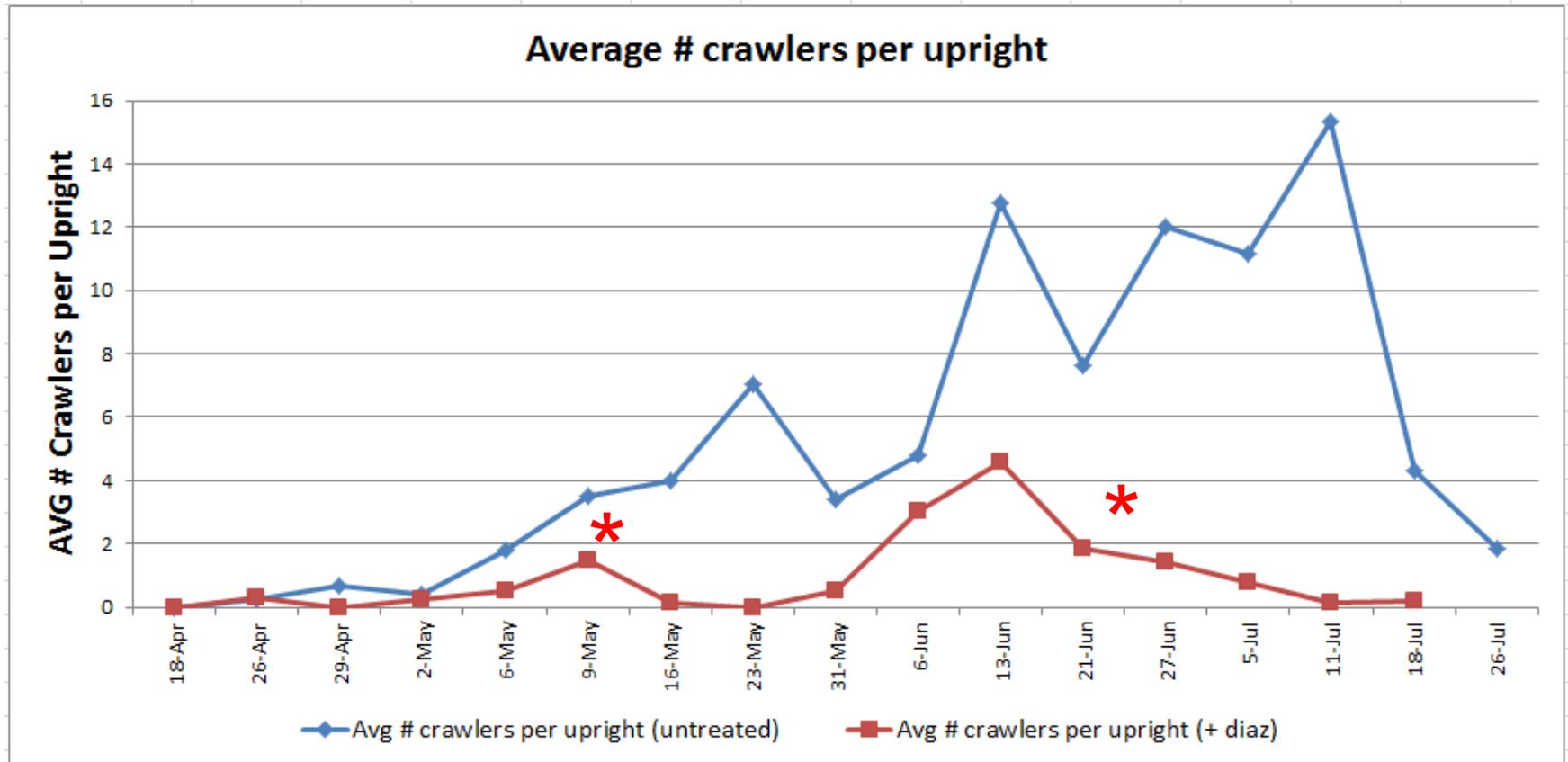


# Basic scale insect life cycle

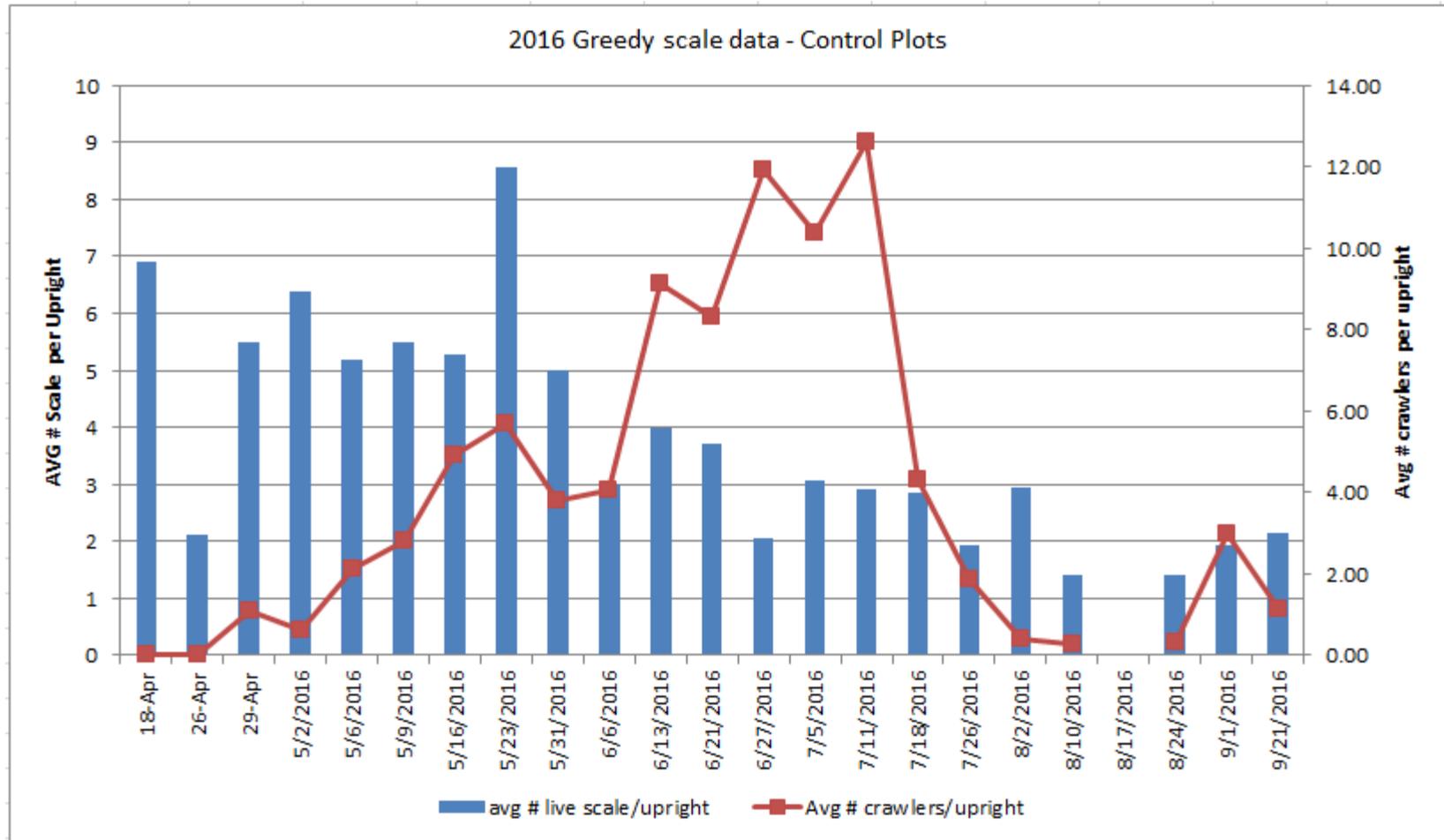
- Adult → Egg → Crawler  
→ Immature → Adult
- Can have multiple generations per year!



# 2016 Greedy Scale -- Crawlers



# 2016 Greedy Scale – Control plots



# 2016 field observations

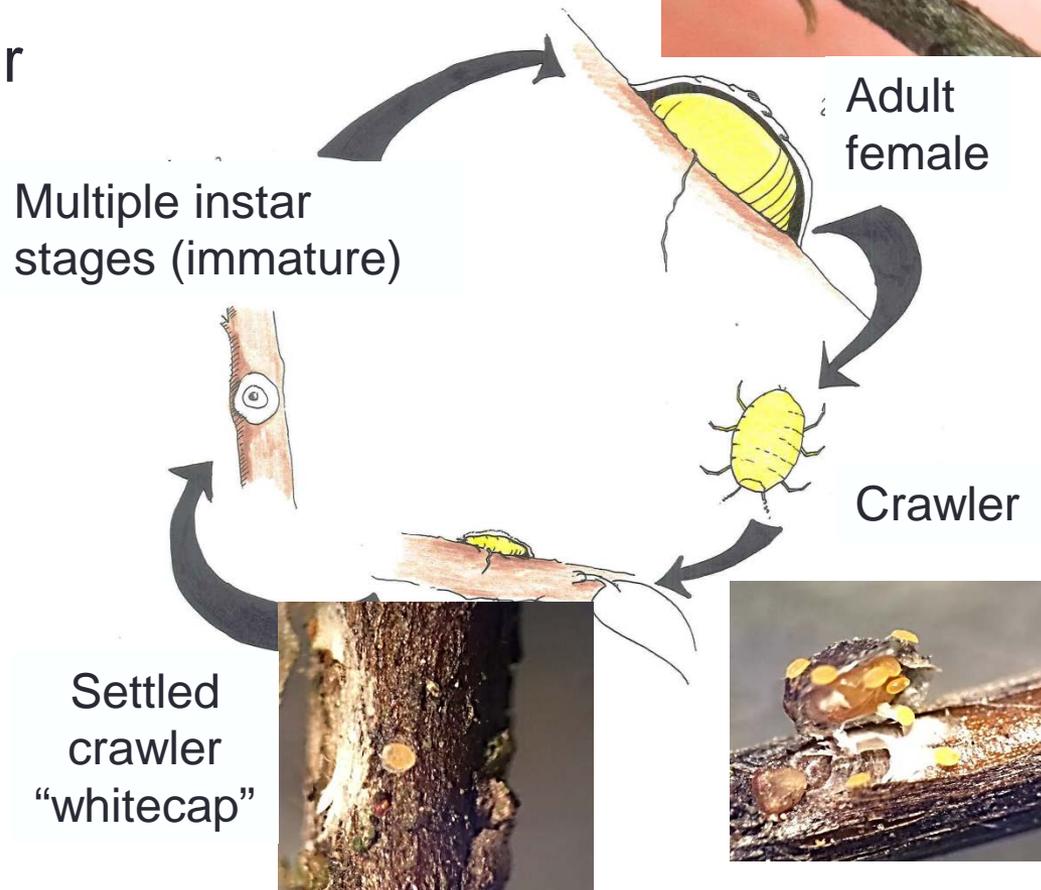
- Mpede (Insecticidal soap)
  - Great for Brown Soft Scale!! **USE IT.**
  - Disappointing for greedy scale
- Diazinon
  - Good control ...
    - 1 pre-bloom treatment\*\* at crawler emergence
    - 1 post-bloom treatment\*\*
  - Effective against crawlers, not adults
  - Have to work around bees ... watch out for native pollinators!!
  - ...also → could knock down beneficial insect populations
- Horticulture Oil
  - Has potential ... need more data on timing, etc.

# 2016 Field observations

- Horticulture oil
  - Shows some promise ... in 2017 will time apps with crawler emergence
  - Nov 2016 Hort Oil application → 40% adult mortality 10days after treatment
    - January 12, 2017: 89% mortality (includes cold weather/winter mortality)

# Basic scale insect life cycle

- Adult → Egg → Crawler  
→ Immature → Adult
- Can have multiple generations per year!



# What's next?

- Pesticide screening 2017, 2018 to find more (better?) control options for greedy scale (& nail down timings)
- In the meantime ....
  - Watch for sooty mold (possible brown soft scale)
  - Watch for dead spots (greedy scale)
  - Maintain a good fertilizer program
- Will monitor greedy scale this year ... watch for crawler emergence emails!



Questions???