



Scale Insects in Cranberry

Cassie Bouska

OSU Extension Service

January 5, 2016

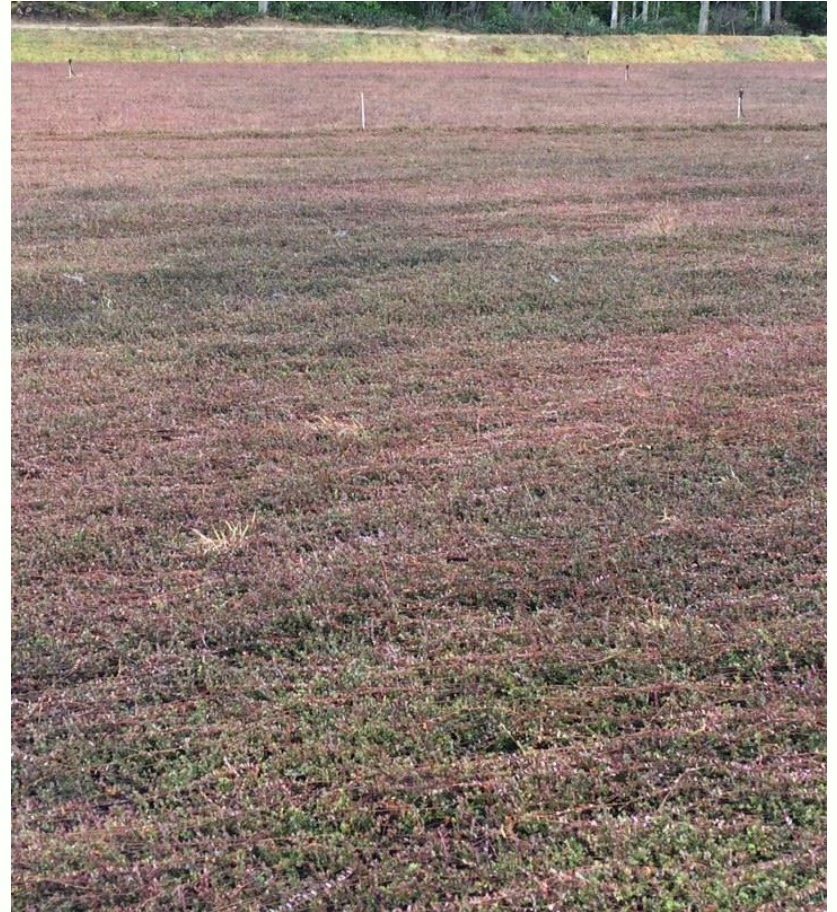
What are scale insects?

- Tiny, sucking insects
 - Relatively sedentary
 - Mostly female
 - Can have multiple generations per year
-
- **The species matters!**



The problem

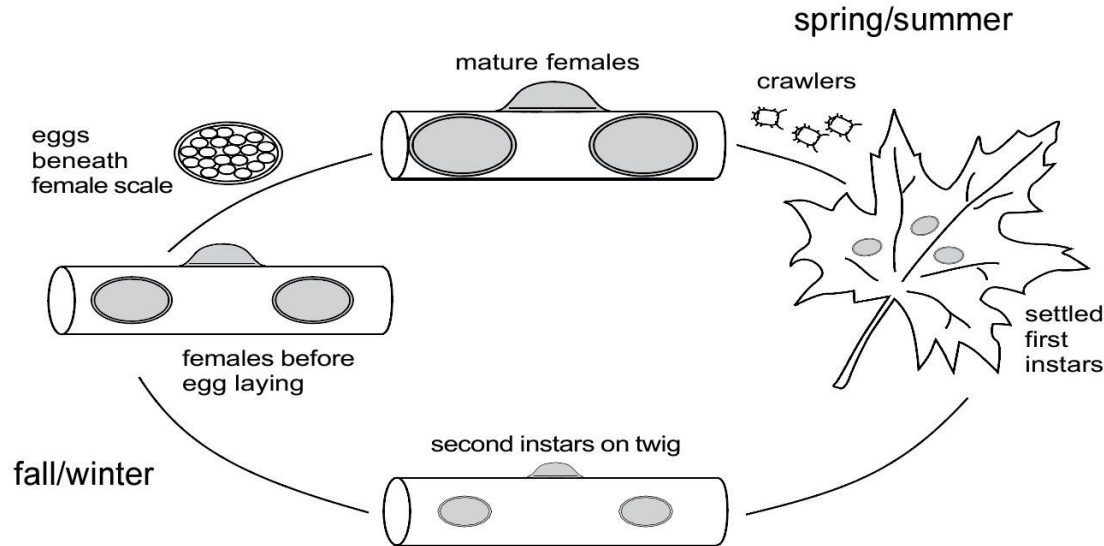
- Stunted, delayed vine growth
- Dead patches in beds
- Reduced fruit set
- Sooty mold infestations can reduce fruit quality (fresh) and photosynthesis



Basic life cycle

Egg → Crawler → Nymph → Adult

- Crawler stage is most vulnerable ... but short!
- 24-48 hours
- And first week or so after settling as nymphs



What to look for ...

- Blackish patches
- Dead spots or holes
- Vines that are darker green



What to look for ...



Black patches of sooty mold from a scale infestation in a bog mid-March (photo: CBouska)

What to look for ... up close









Two major types of scale insects ... we have both.

- **Armored scale**

- Detachable protective 'armor'
 - Protects them from environment, natural predators, and us.
- Sedentary after crawler stage
- No sooty mold



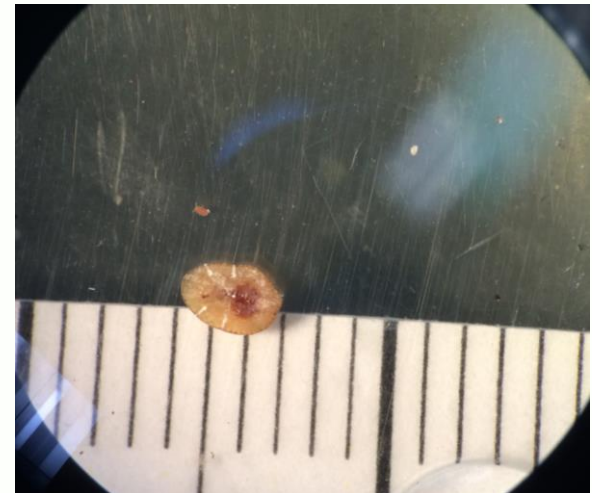
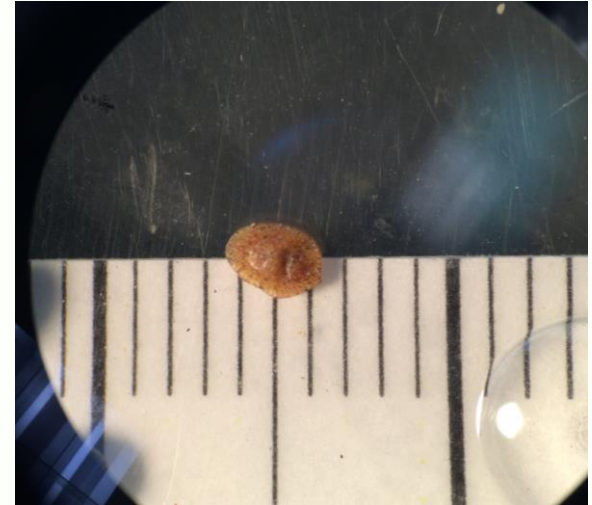
- **Soft scale**

- No protective 'armor'
 - Susceptible to predation, environment, and sprays
- Will move seasonally (slowly)
- Sooty mold



Soft Scale – Brown soft scale

- Usually found on leaves, often on underside
- No protective ‘armor’
 - Exposed to sprays – especially immature nymphs and crawlers
 - Overwinter as immatures on leaves or stems
- Vascular feeders
 - Systemic insecticides are effective
- Broader control options



Brown soft scale control options

1. Treatments during dormancy can target overwintering immatures (chemigation not as effective)

- 2% insecticidal soap
- 2% insecticidal soap with an OP (may need to retreat 1 week later)
- Monitor and treat at the crawler stage or right after the crawlers have settled**

3. Root absorbed systemic insecticides (Imidacloprid) have shown 90% control rates



Armored scale – greedy scale

- Tend to be located on the stems and vines
- Protective armor makes control challenging
 - Timing is important!
- Feed on woody tissue not sap from phloem
 - Minimal control with systemic and translaminar insecticides
 - Do not secrete honeydew = no sooty mold
- Must identify and target crawler stage!

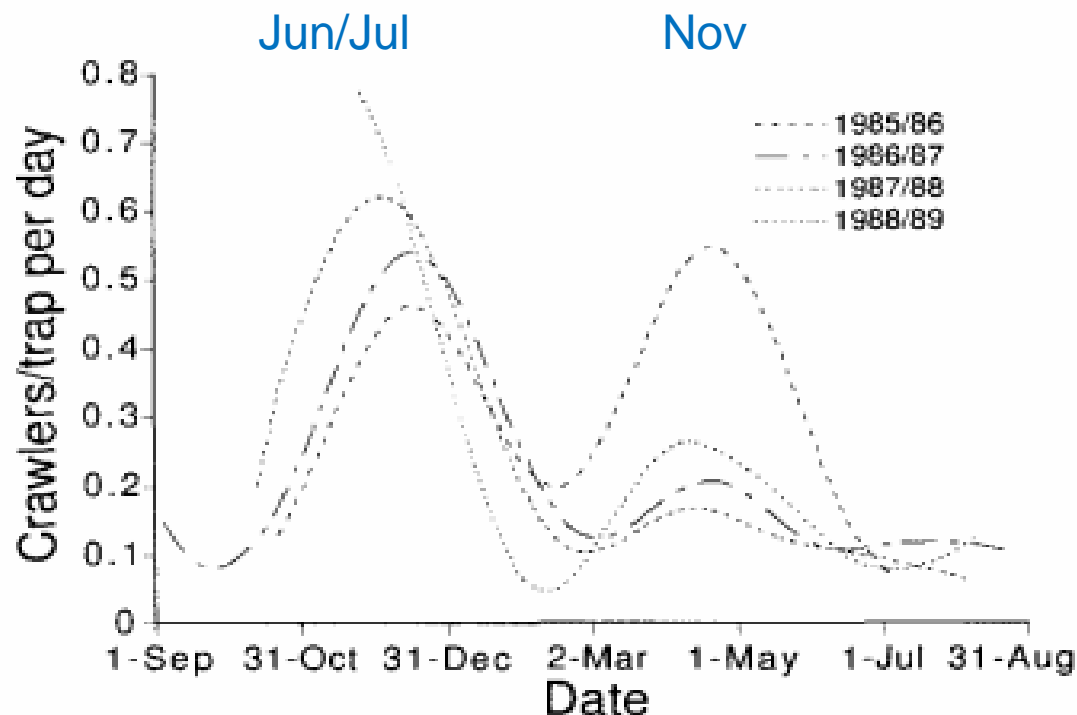


Greedy scale with crawlers



Greedy Scale: Monitoring is Crucial!!

- NZ study looked at peak crawler emergence

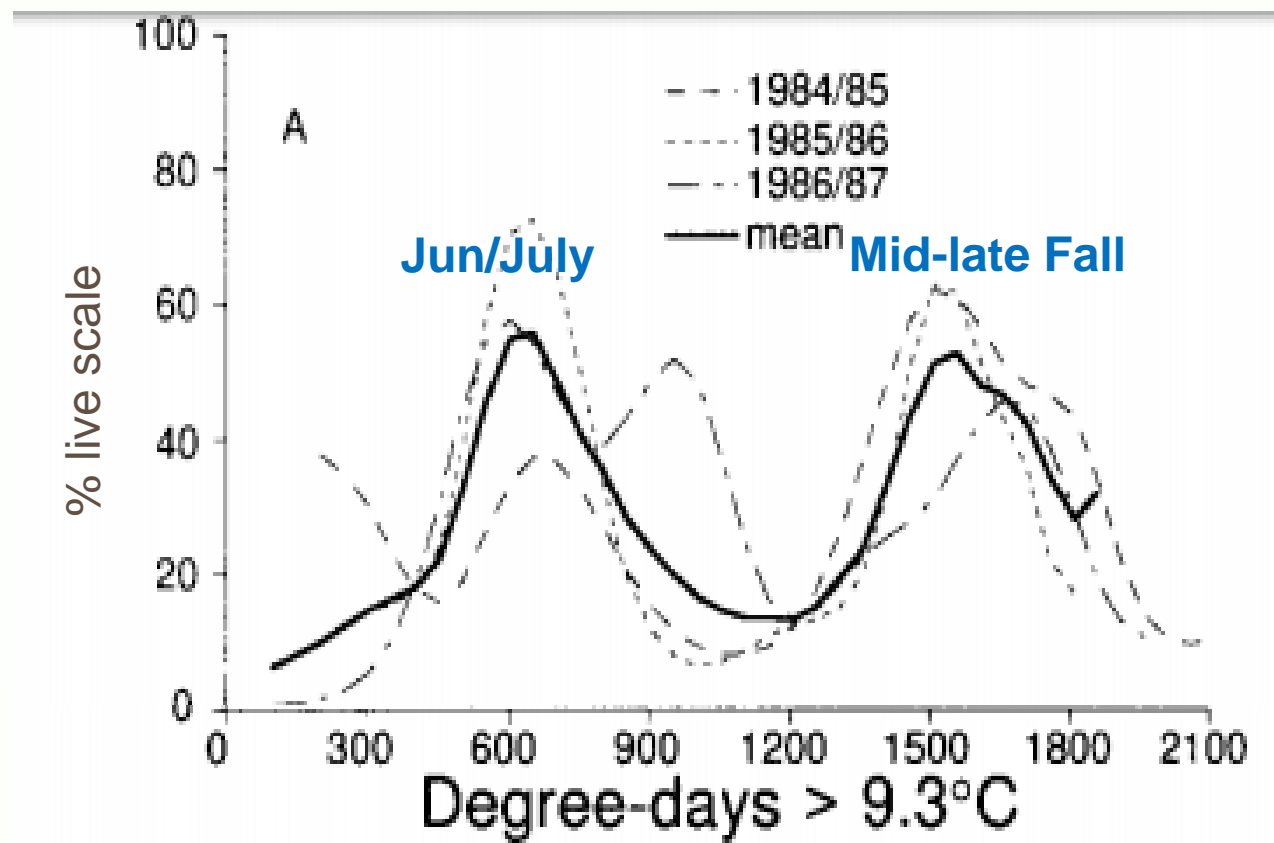


Blank, R., G. Gill, and M. Upsdell.
1996. New Zealand Journal of
Crop and Horticultural Science,
24: 239-248

Fig. 7 Greedy scale (*Hemiberlesia rapax*) crawler activity on kiwifruit (*Actinidia deliciosa*) wood assessed using sticky tape traps over four seasons.

Greedy scale ... monitoring with Growing Degree Days

- NZ study also looked at presence of 1st nymphs (settled crawlers)



Greedy Scale Control Recommendations

- **#1 - MONITOR for crawlers!!!**
 - Testing different methods:
 - Double-sided tap, “tanglefoot,” walking surveys
- Apply treatment ...
 - 1st Crawlers: Summer (Jun/July):
 - Diazinon
 - (Stylet oil??? Currently not labeled for cranberry)
 - 2nd Crawlers: Fall
 - Post-harvest flood



Oils and soaps

- Insecticidal soaps
 - Damage protective coat of soft-bodied insects causing them to dehydrate
- Horticulture oils (petroleum- and vegetable-based)
 - Smother and suffocate
 - Dormant oils = heavier, less refined. Used when plants are dormant
 - Summer, superior oils = lighter, more refined. Can be applied when plants are active
- Neem oil (botanical insecticide)
 - Made from neem tree seeds
 - Smothers and suffocates ... but also has some insecticidal properties
 - Most effective against actively growing immature insects

- Questions????
- Contact information:
Cassie Bouska
cassie.bouska@oregonstate.edu
office: 541-572-5263 ext 25290
cell: 541-290-2287
- Call or email me and we can schedule a farm visit!

Resources

- Scales. UCDavis IPM Fact Sheet.
<http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn7408.html>
- Scale Insects on Ornamentals. EB 1552E. Washington State University.
<http://cru.cahe.wsu.edu/CEPUBLICATIONS/EB1552E/EB1552E.PDF>
- Pest control using horticultural oils. Colorado State University.
<http://www.colostate.edu/Dept/CoopExt/4dmg/PHC/hortoil.htm>
- Effectively managing scale insects in the urban landscape. Rutgers Cooperative Research & Extension.
<http://njaes.rutgers.edu/pubs/plantandpestadvisory/2006/ln0316.pdf>
- Blank, R, et al. 1996. Greedy scale, *Hemiberlesia rapax* (Hemiptera: Diaspididae), phenology on kiwifruit leaves and wood. New Zealand Journal of Crop and Horticultural Science, 24:3, 239-248.
- UMass Extension Cranberry Station Newsletter, June 5, 2015.
http://ag.umass.edu/sites/ag.umass.edu/files/newsletters/4_2015-june-cranberry.pdf