

Slides I kept from the WA Virtual Field Day

Hilary Sandler did a week talk. This slide was just to help me remember ways to rate injury to weeds during pesticide trials.

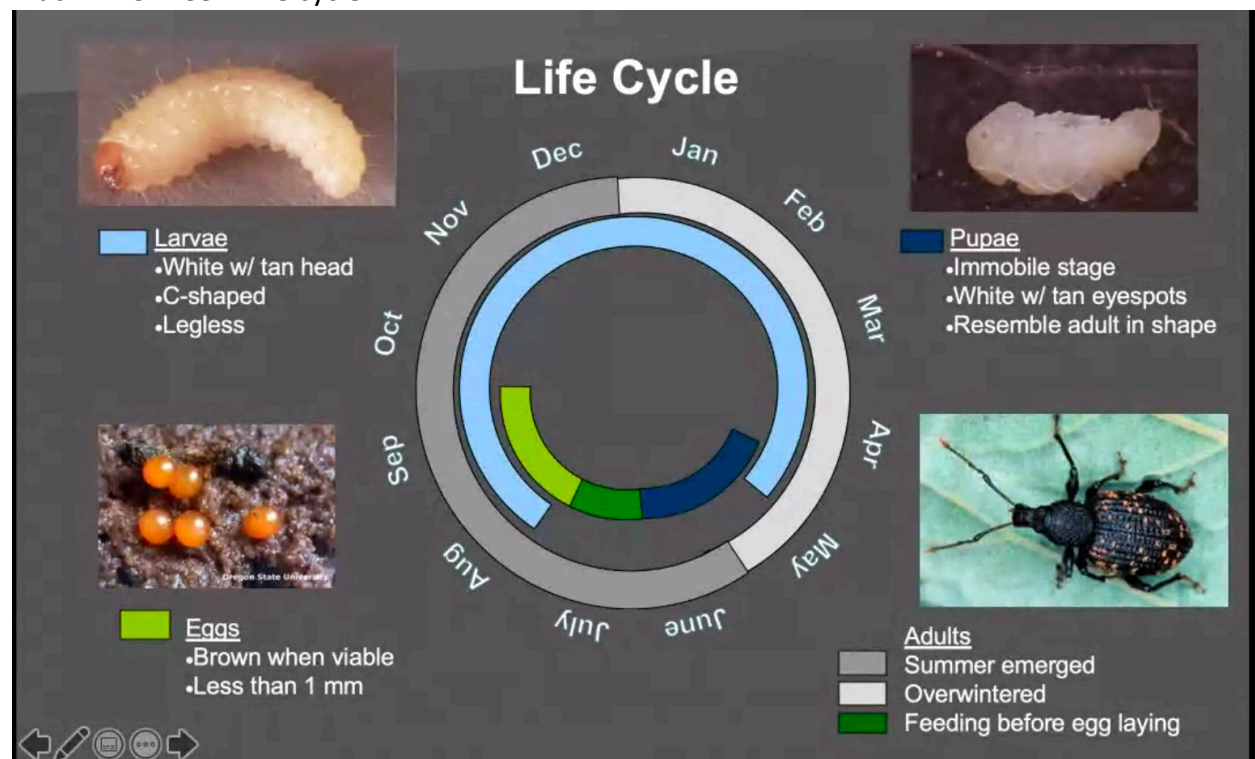
■ Scales of 4 or 5

- 0= no damage
- 1= minor damage
- 2= moderate damage
- 3= severe damage
- 4= dead

Criteria:

- Leaf damage
- Stem injury
- No new growth, stunting
- Impact on buds

Black Vine Weevil life cycle



Information on monitoring black vine weevils.

- Monitor newly emerge adults late May to late June
 - Sweep net after dark
 - Threshold: one adult/25 sweeps
 - One adult = 7 eggs per day (500+ in a few months)



BVW larval damage on Cranberries



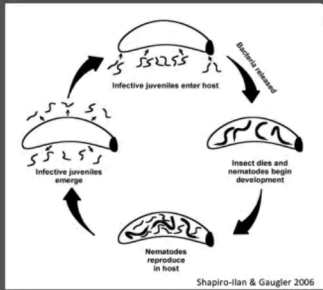

- Most apparent just before and during bloom
- Edges of bed /drier areas more susceptible to injury



More info for black vine weevil control

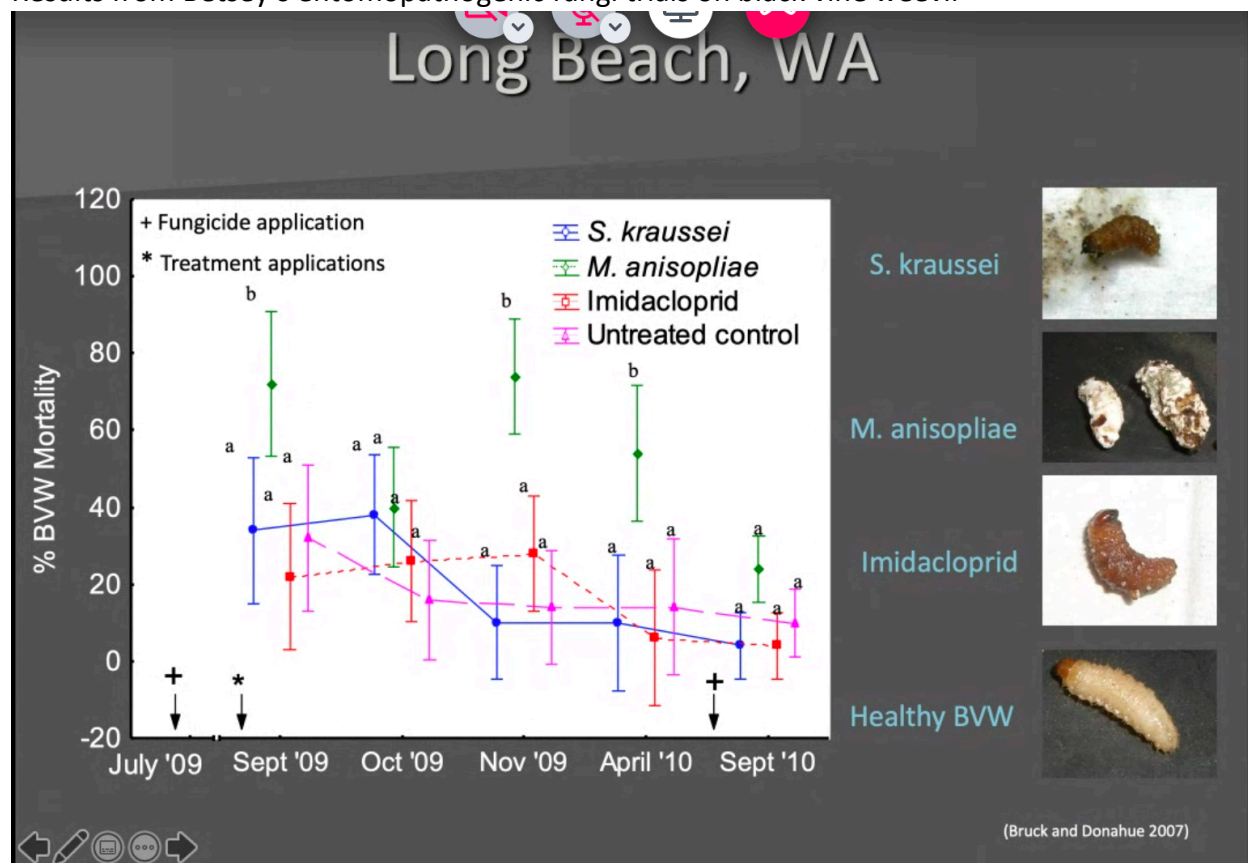
Biological Management Options

- Entomopathogenic nematodes
 - Sensitivity
 - UV light, temperature, moisture
 - Expensive!!
- Entomopathogenic fungi
 - *Beauveria bassiana*
 - Mycotrol, Botaniguard, etc.
 - Sensitivity
 - Fungicide, moisture, temperature
 - Persistence

Shapiro-Ilan & Gaugler 2006

Results from Betsey's entomopathogenic fungi trials on black vine weevil



Management options for black vine weevil. Note that Belay is no longer an option in cranberry.

Chemical Management Options				
<ul style="list-style-type: none"> Target larvae and pre-ovipositional adults Bee Toxicity - Do not apply during bloom/foraging 				
Active Ingredient	Trade Names	PHI	Bee Toxicity *	Notes
Acephate	Orthene97, Acephate 97UP	75 - 90 d	x	Targets adults, apply at night.
Azadirachtin	Aza-direct, Neemix, etc.	0 d		Some OMRI-approved, questionable efficacy
Clothianidin	Belay	21 d	x	Apply after fruit set, incorporate into soil with irrigation
Imidicloprid	Admire Pro, etc.	30 d	x	Apply post-harvest & post-bloom, only effective in sandy soil, water in
Indoxacarb	Avaunt	30 d	x	Targets adults, apply at night. Registration at risk.
Thiamethoxam	Actara	30 d	x	

Fireworm management – this slide was describing the number of moths in pheromone traps at peak flight and how that could be used as an indicator of the effectiveness of the first spray

Rules of thumb, from awhile ago, in WI
<ul style="list-style-type: none"> Based on average of peak captures in pheromone traps, how effective was spring management? <ul style="list-style-type: none"> Good 1st gen control: peak 0-30 males Fair 1st gen control, poor coverage in some areas: peak ca. 100 Not too good, missed spray timing: peak 100' s of moths

Timing of first fireworm application – she was hung up on using intrepid. Not sure why she never mentioned Altacor, but she didn't.

Metoxyfenozide (Intrepid) - for summer generation BHF

- Look for flight ONSET -- first moth flight (several moths/trap/night)
- You are targeting small larvae as hatch occurs
- Apply 10-14 (+) d after ONSET of flight
- Apply second spray 10 d after first

The “proper” way to do visual inspections, according to experts in different growing regions.

VISUAL INSPECTIONS

- Visually scan a 2x2 ft area for webbed leaves, damage (30 -60 secs)
- Wisconsin IPM: Four scans/bed
- BC IPM: 10 scans/acre
- Average of 1 larva/scan = consider treatment

Mostly, I just really like the pictures on these next two.

Lophodermium – identification



- Infected leaves turn from a reddish brown to a bleached tan and eventually a silvery gray color. Discoloring begins in late winter, progressing into spring and summer.
- The discolored leaves remain attached to the dead uprights

Lophodermium – identification



- Black, glossy, fruiting bodies (apothecia) form on the bottom surfaces of infected leaves
- Immature apothecia appear as flat - round or oblong discs. As they mature, they swell, becoming football-shaped, and open along a median slit to release spores

I was interested in the different ways the fungicides work in the plant.

Lophodermium Disease Cycle

- Spores infect current year's leaves, they do not infect leaves from previous year(s)
- Materials such as Bravo (chlorothalonil) or Maneb/Dithane (mancozeb) are protectorants and must be present on the leaf prior to a spore landing on the leaves
- The "newer" fungicides such as: Proline, Abound, Quadris Top, etc. (FRAC 3 and/or 11) are systemic. They can protect the leaves as the spores germinate and penetrate the leaf tissue, and move to newly emerged leaves
- Once a leaf is infected the disease cannot be "cured" from the leaf

Lophodermium - Control

- Reduce free water on the vines when possible: reduce tree shading, prune heavy/deep vines, modify irrigation cycles
- Commonly available fungicides are very effective
- Correct timing of fungicides applications are key to protecting vines
- Depending on levels of infestation; recommend a fungicide application approximately last week of June, (normally this is a late bloom/fruit set treatment anyway), a 2nd application 10-14 days later, a 3rd application 10-14 days later may be advised if the disease is present on the bog or the neighbors bogs are highly infected