Minor Pests of Tree Fruits

Elizabeth H. Beers
WSU Tree Fruit Research & Extension Center
Wenatchee, WA

WSU Organic Fruit School
14 March 2017
Confluence Technology Center, Wenatchee, WA
Apple leafcurling Midge

Apple leafcurling midge
*Dasineura mali*

Diptera: Cecidomyiidae

Other cecidomyiids:

Pear leafcurling midge
*Dasineura pyri*

Blueberry gall midge
*Dasineura oxycoccana*

And a beneficial (predatory midge)
*Aphidoletes Aphidomyza*

Apple leafcurl midge
Apple gall midge
Apple leaf midge

*Dasyneura*
*Dasineura*
European native

Thanks to Chris Nobbs, DuPont
So, what’s a midge?

Midge = Diptera (the flies)

Family: Cecidomyiidae

Most are pests, a few are predators

Aphidoletes aphidimyza – aphid predator

Source: Rincon Vitova – www.rinconvitova.com
Predatory midges

*Aphidoletes aphidimyza* – aphid predator
Pear leafcurling midge: *Dasyneura pyri*

Blueberry gall midge
*Dasineura oxyoccana*
Apple leafcurling midge or apple gall midge

Larvae

Leaf damage
Adults and eggs
Life Cycle

Hatch: 2-10 days

Pupae: 8-13 days

Mature after 20 days

Adult: < 5 days

Hatch: 2-10 days
Probably: 3-4 in our area (unverified)
3 in interior BC
NZ: 2 to 7
Lack of rainfall may inhibit abundance – dry conditions prevents mature larvae from exiting leafroll to pupate.
<table>
<thead>
<tr>
<th>Pheromone</th>
<th>Insect Name</th>
<th>Scientific Name</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>YPOMAL</td>
<td>Apple Ermine Moth</td>
<td>Yponomeuta malineus</td>
<td></td>
</tr>
<tr>
<td>ARGCON</td>
<td>Apple Fruit Moth</td>
<td>Argyresthia conugella</td>
<td>$2.75</td>
</tr>
<tr>
<td>DASMAL</td>
<td>Apple Leaf Gall Midge</td>
<td>Dasineura mali</td>
<td>$8.00</td>
</tr>
<tr>
<td>PANPYR</td>
<td>Apple Pandemis</td>
<td>Pandemis pyrusana</td>
<td>$2.75</td>
</tr>
</tbody>
</table>

AlphaScents website
Monitoring
- Apple spp.
- May be varietal differences in susceptibility
Economic damage

- Young trees
- Nursery stock
- Older trees: less impact
- Quarantine: movement in packed boxes
“97% fewer adult males in pheromone traps and 48% fewer larvae per shoot in the second *D. mali* generation” *

Suckling et al 2007 JEE 100(3): 745-751

Platygaster demades

Minute pirate bug
Possible pesticides for control:

Ultor (systemic)
Exirel
Spinossyns (Delegate/Entrust/Success)
Assail
Pyrethroids (adults, not larvae)
Larvae of Tenthridinid wasps
Look like lep larvae (caterpillars), except the pear slug

California pear sawfly, *Pristophera abbreviata*

Dock sawfly, *Ametastigia glabrata*

Pear slug, *Caliroa cerasi*
How to distinguish a sawfly larva from a moth larva

**Sawfly larva**

Sawflies are Hymenoptera (gauze-winged insects like bees and wasps) but their larvae are often mistaken for caterpillars, which are the larvae of Lepidoptera (moths and butterflies). The sawfly larva’s caterpillar-like body is called eruciform. Several characteristics distinguish sawfly larvae from caterpillars:

- Sawflies have five or more pairs of abdominal prolegs (the short, fleshy paired legs on the abdomen), caterpillars have four or fewer prolegs.

- The prolegs do not have crochets, or rows of hooks, on the bottom as do the prolegs of caterpillars.

- Sawflies have only one pair of ocelli (primitive eyes), whereas caterpillars can have more than one.

**Caterpillar**

Detail of proleg (viewed from below) showing crochets
Pear slug
Pear slug – pest of pear and cherry
Pear slug damage

Damage to pear

Damage to sweet cherry
Pear slug control

1227-01  
mid July

Assail  
Actara  
Delegate  
Bexar  
Check

Avg. post-trt count (pearslug/25 leaves)

1227-02  
early August

FujiMite  
Neemix  
PermaGuard  
Oil  
Check

Pearslug larvae/25 lvs (post-trt avg)
Western Tentiform leafminer
Western tentiform leafminer has three and a partial fourth generations per year. Timings are based on observations in Washington.
Weevils

Beetles (Coleoptera)
Family: Curculionidae

‘Sagebrush weevils’
Weevils

Notchers and girdlers
Genus *Otiorhynchus*

*primarily pests of ornamentals and small fruits

Black vine weevil (*O. sulcatus*)
Strawberry root weevil (*O. ovatus*)
Lilac root weevil (*O. meridionalis*)

Not pests in Washington:
Plum curculio (*Conotrachelus nenuphar*)
Apple curculio (*Anthonomus quadrigibbus*)
Borers – beetles
Shothole borers
subfamily Scolytinae