

Minor Pests of Tree Fruits



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Apple leafcurling Midge

Apple leafcurling midge
Dasineura mali

Diptera: Cecidomyiidae

Other cecidomyiids:

Pear leafcurling midge
Dasineura pyri

Blueberry gall midge
Dasineura oxycoccana



Apple leafcurl midge
Apple gall midge
Apple leaf midge

Dasyneura
Dasineura

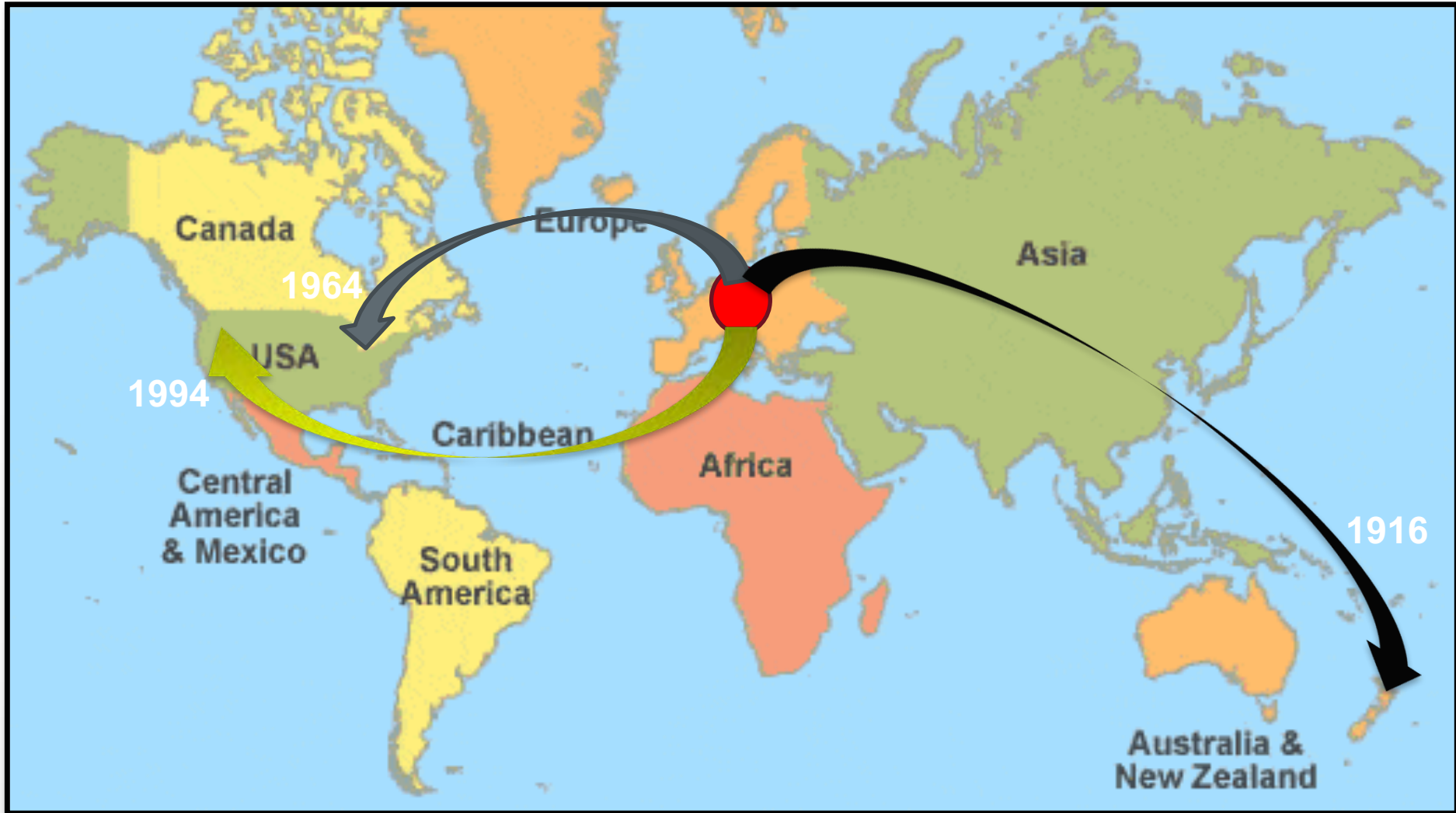


And a beneficial (predatory
midge)
Aphidoletes Aphidomyza





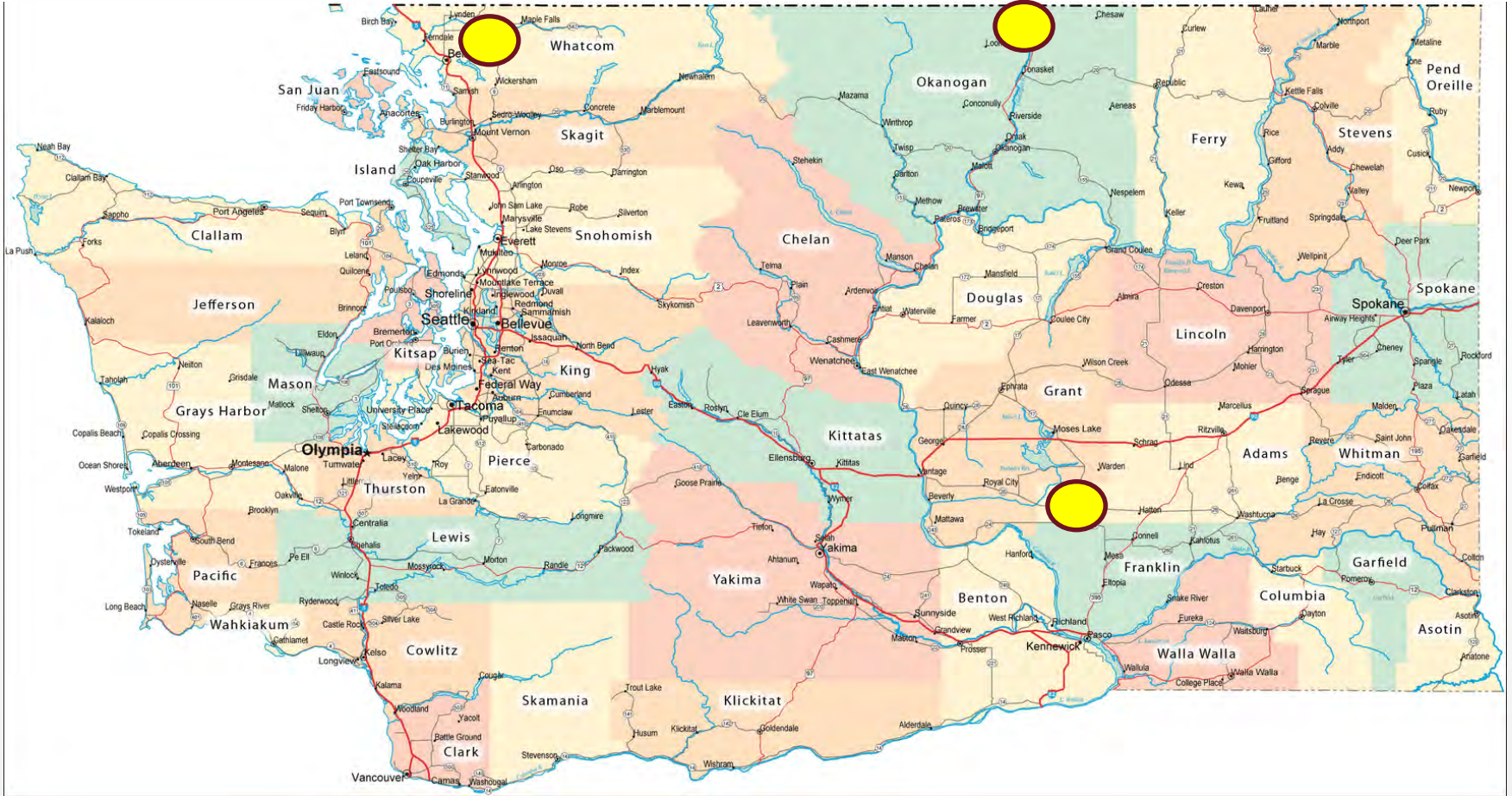
European native



Thanks to Chris Nobbs, DuPont



Distribution in Washington






So, what's a midge?

Midge = Diptera (the flies)

Family: Cecidomyiidae

Most are pests, a few are predators

Aphidoletes aphidimyza – aphid predator

<i>Aphidoletes aphidimyza</i> Aphid Predator predatory midge, pupae diapause daylight < 16 hours, temperatures < 54° F (12° C) supplemental light helps	aphids, row crops, trees, greenhouse, larva predator, use with lacewing and ladybugs	250/acre 2 wk l, 2-4 X 1-6/plant 2-5/tree 	AA250	250/tray	27.00
				5+ trays	20.00
				10+ trays	17.00
			AA1	1,000/tray	50.00
				5+ trays	43.00
				10+ trays	40.00
			AA3	3,000/vial	99.00
				5+ vials	85.00
				10+ vials	82.00
			AA5	5,000/vial	139.00
				5+ vials	124.00
				10+ vials	122.00



Predatory midges

Aphidoletes aphidimyza – aphid predator





Pear leafcurling midge: *Dasyneura pyri*



**Blueberry gall
midge**
*Dasineura
oxycoccana*





Apple leafcurling midge or apple gall midge



Larvae



Leaf damage





Adults and eggs





Life Cycle



Adult: < 5 days



Hatch: 2-10 days



Mature after 20 days



Pupae: 8-13 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.



Phermone monitoring

YFOMAL	Apple Ermine Moth	<i>Yponomeuta malinellus</i>	+ SINGLE
ARGCON	Apple Fruit Moth	<i>Argyresthia conugella</i>	\$2.75 + SINGLE
DASMAL	Apple Leaf Gall Midge	<i>Dasineura mali</i>	\$8.00 + SINGLE
PANPYR	Apple Pandemis	<i>Pandemis pyrusana</i>	\$2.75 + SINGLE
	Apple Mite		\$1.10

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” *

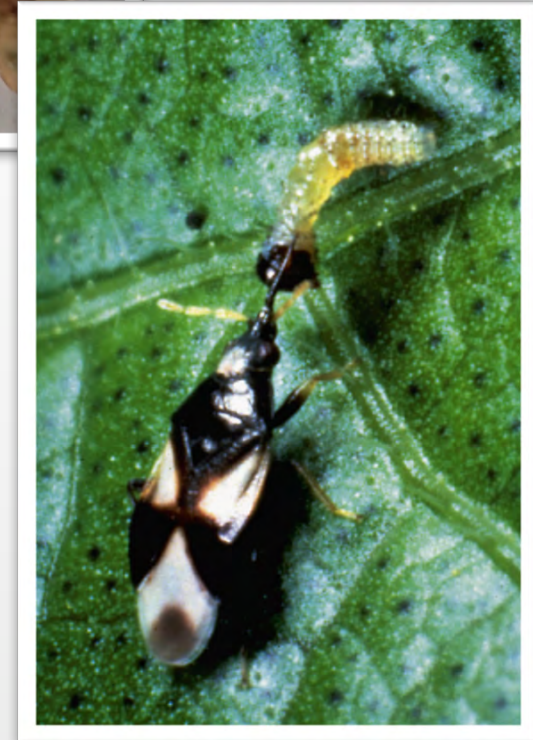
Suckling et al 2007 JEE 100(3): 745-751

*Loet et al 2014: Pest Mgmt Sci.



Platygaster demades

Minute pirate bug



Possible pesticides for control:

Ultor (systemic)

Exirel

Spinosyns (Delegate/Entrust/Success)

Assail

Pyrethroids (adults, not larvae)



Hymenopteran pests: the sawflies

Larvae of Tenthredinid wasps
Look like lep larvae (caterpillars), except the pear slug



California pear sawfly, *Pristophera abbreviata*



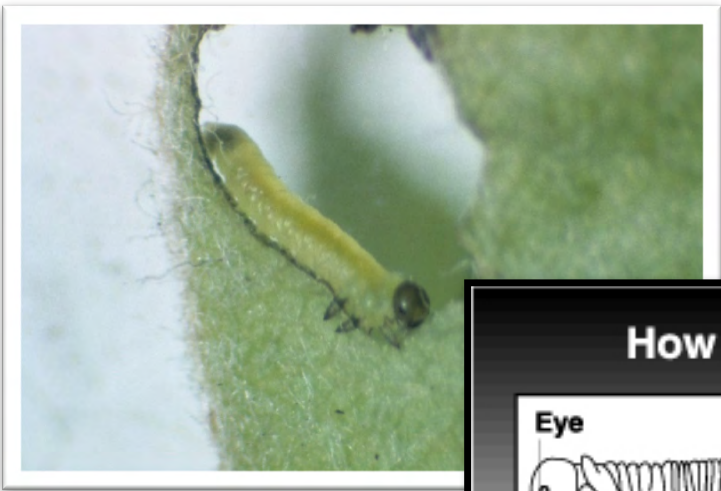
Dock sawfly, *Ametastigia glabrata*



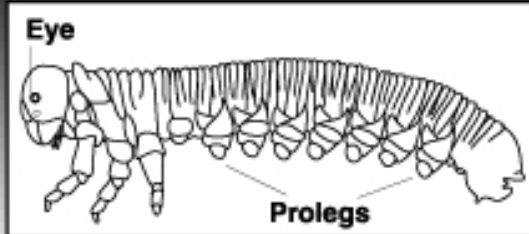
Pear slug, *Caliroa cerasi*



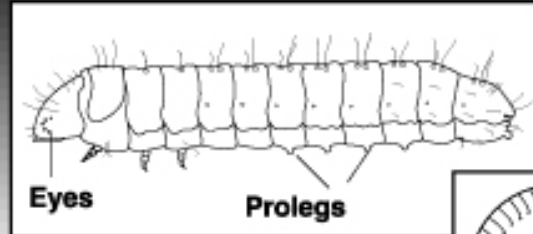
Hymenopteran pests: the sawflies



How to distinguish a sawfly larva from a moth larva



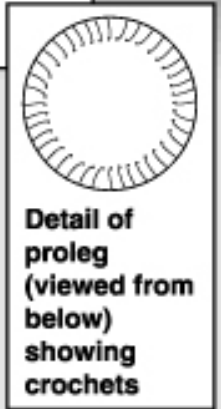
Sawfly larva



Caterpillar

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.



Detail of proleg (viewed from below) showing crochets



Pear slug





Pear slug – pest of pear and cherry





Pear slug damage



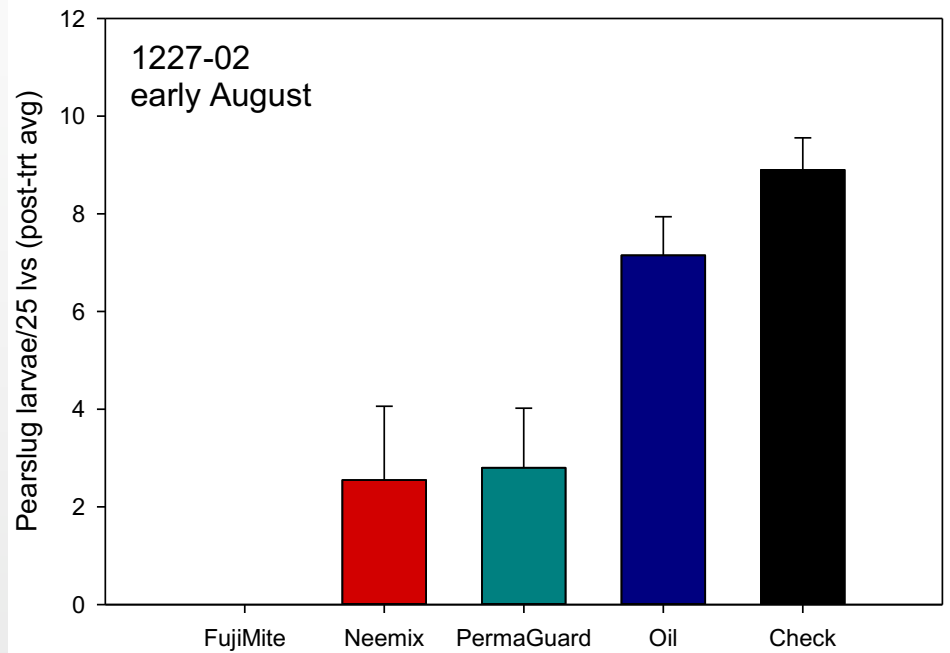
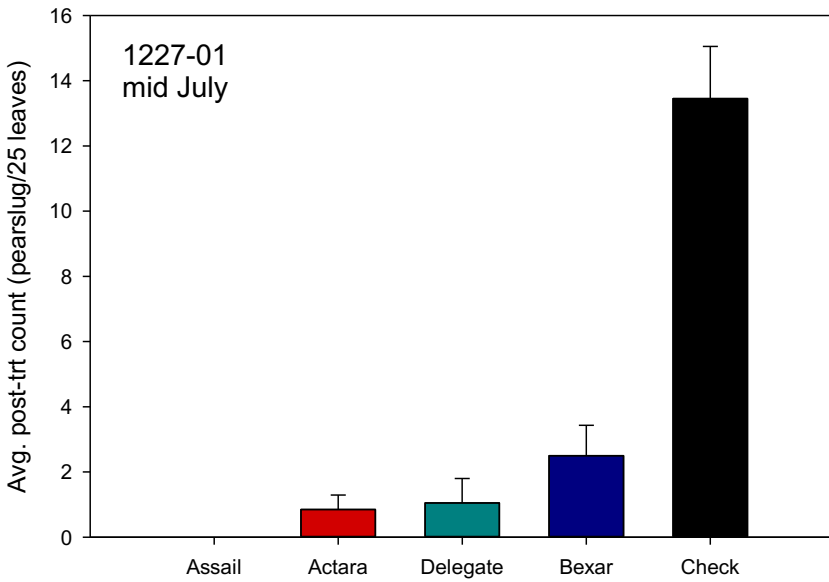
Damage to pear

Damage to sweet cherry





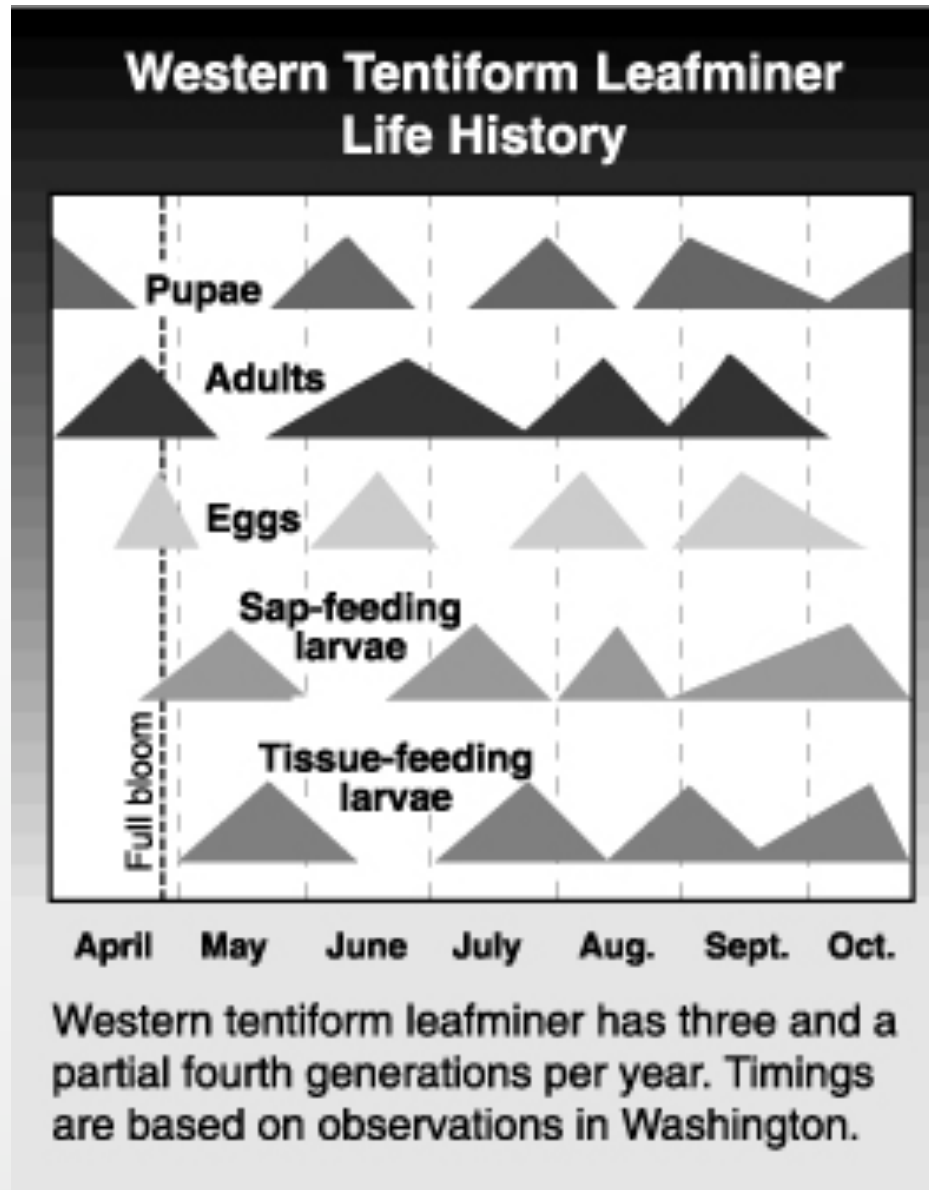
Pear slug control





Western Tentiform leafminer







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

