

# Fruit Pest Advisory

University of Idaho, U.S. Department of Agriculture, and Idaho counties cooperating.

Spring 2014 Issue 4

## Protect Yourself

**Codling Moth:** Moths are still hatching and will continue the rest of this month. Follow the label recommendations to secure your apple crops protection by keeping chemical residue on the apples through this first generation. Alternate chemicals for the July second generation applications.

**Leafhopper:** Large numbers of leafhopper are now showing up in un-managed apple trees. White apple leafhopper adults are creamy white to yellowish-green in color and about 3 to 4 mm (1/8 inch) long. They hold their wings in a roof-like position when resting and appear as tiny wedges when seen from above. Adults are



active and fly readily when disturbed.

**Mites:** European red mites are the most common pest in our apple orchards, although twospotted and McDaniel spider mite are also seen occasionally. On pear, twospotted spider mites are the most common species, but European red mites are also seen occasionally. Apples can tolerate considerably more damage than pears (Anjous are quite susceptible), but apples are more likely to show the effects of damage if they are stressed by a heavy crop load, hot weather, and insufficient moisture.



European red mite eggs in apple calyx (E. Beers)

### Codling Moth

#### Degree Day "No biofix" (6/18/14)

Station (Elev.)	°Days	Generation 1% Hatch
<b>Treasure Valley</b>		
Parma (2309)	1683	9-July (2)
Boise (2719)	1583	12-July (2)
<b>Magic Valley</b>		
Hagerman (3197)	1569	10 July (2)
Twin Falls (3921)	1349	24-July (2)
Rupert (4154)	1228	28-July (2)
<b>Eastern Idaho</b>		
Pocatello (4605)	735	18-July (2)
Idaho Falls (4709)	520	1-Aug (2)
Rexburg (4870)	417	12-Aug (2)

\*-(2)- second generation begins hatching

### Look out for:

**June Drop** is occurring on fruit trees. Fruit fall from the trees when the trees reserves will not be able to sustain the growth of the fruit. If they were not properly thinned out, the drop may be greater than usual.

**Prunus Shothole Disease (See Page 4)** has been showing up on peach and nectarine leaves. Control is past but cultural applications can help control the spread of spores for next year.

**Cherry Leaf Spot** is causing early fall on many cherry trees this year. The cool wet spring weather was conducive to this disease. If you are having problems research how to control this disease for next year. Control measures are most effective at petal fall (Early spring) and shuck fall (Mid spring).

**Cherry Powdery Mildew** has started with the advent of the recent wet weather and cool temperatures. If you have tart cherries check them often. Sweet cherries are less prone to mildew.

# Western Cherry Fruit Fly

**Tony McCammon**

Treatment for western cherry fruit fly—the maggots in the fruit—should begin soon on sweet cherries. The recommendation is to protect fruit when it has begun to develop a straw-yellow blush color, and I noticed this was the case on some sweet cherries in southern Idaho. Be sure to start your sprays based on the development of fruit on your own trees. Look at the fruit in the sunniest places, and toward the tops of the trees. Trees under stress will also often have fruit that ripens more quickly than others so pay close attention to these special situations and time insecticide sprays accordingly.



county fruit boards to be treated.

GF-120 is an excellent product that is used by many growers across the country with great success (in Washington, they use this product almost exclusively). If you have a heavy infestation, it will take 1-2 seasons of use to bring 100% control with this product, especially if you can get as many nearby neighbors to use it as well. It contains a bait that attracts the fly to eat it, and the active ingredient is

called spinosad. Spinosad is a metabolite from the naturally occurring soil bacterium, *Saccharopolyspora spinosa*. GF-120 must be applied every 7 days, but complete coverage is not necessary. Although it is expensive, it is available for purchase by residential growers at larger ag supply chains.

Fly emergence extends over a minimum of 6-8 weeks in most areas. Because of the extended flight, most cherries have to be protected with numerous sprays. Yellow sticky traps can be used to evaluate western cherry fruit fly presence and emergence.

Larvae feed within the fruit on the flesh, rendering the fruit unmarketable. There is no noticeable evidence on the outside of a fruit indicating infestation until after larvae emerge through exit holes. Large populations can infest a high percentage of the fruit on a tree. Peak emergence of adults and infestation of fruit occurs from mid-June to mid-July.

After the maggots emerge from the fruit they drop from to the ground and enter their pupate stage.



Western cherry fruit fly is a serious pest of tart and sweet cherries. The pest is part of the State Department of Agriculture's targeted list. Although residential growers can "tolerate" several wormy cherries, please keep in mind that a commercial growers' crop can be rejected by the processing plants if worms are detected. If residential trees are adjacent to commercial orchards, it is required by local



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**TwinFallsCounty**

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WSU Decision Aid System

## RainFast characteristics of insecticides

John Wise, MSU

The heavy rainfall events experienced over the last several weeks has prompted many questions about the relative “rainfastness” of the insecticides used in fruit production. Very little research has been done on this subject in recent years, leaving growers to depend largely on folk-lore to guide their decisions of whether or not they need to spray after a rain event. In 2006, the Michigan Agriculture Experiment Station provided funds to purchase and install a state-of-the-art rainfall simulation chamber at the MSU Trevor Nichols Re-search Complex. Precipitation events vary in duration, intensity, and droplet size. In the 2007 apple study, we compared the performance of Azinphos-methyl (Guthion), Phosmet (Imidan), Esfenvalerate (Asana), In-doxacarb (Avaunt™), Novaluron (Rimon), Emamectin Benzoate (Proclaim) and two neonotinoids, Acetamiprid (Assail™) and Thiacloprid (Calypso) on the codling moth. Fruit clusters harvested 24 hours after treatment were then exposed to codling moth larvae in the laboratory, comparing fruit protection to untreated samples with no simulated rainfall. Parallel fruit samples were analyzed for their surface and sub-surface residue levels. All treatments that were exposed to the half-inch of rain after 24 hours of drying provided good control of codling moth, even though residue losses to wash-off ranged from 10 to 50 percent. This suggests that even with significant residue wash-off, fruit protection is maintained from insecticides in the first few days after a spray. When fruit clusters were collected from the same field treated plots eight days later, some differences in performance became visible. Whereas performance of Calypso, Avaunt, Imidan and Guthion remained relatively equal between the rainfall and no-rain fruit, the activity of Rimon, As-sail, Proclaim and Asana on codling moth was reduced from the half-inch of simulated rain. For the conventional insecticides Asana, Imidan and Guthion that have primarily surface residues, the amount of chemical lost from half-inch simulated rainfall ranged from 30 to 50 percent. This suggests that pyrethroid and organophosphate insecticides are similarly susceptible to wash-off from precipitation, but that the OPs’ higher toxicity to codling moth larvae maintained performance, though this may not occur in commercial orchards where OP resistance exists. Assail and Calypso, being neonicotinoids, have systemic movement into plant tissue. The residue data showed that even though losses of surface residues were similar to that of the OPs, the resi-



dues that had moved in and below the plant cuticle were protected from wash-off. For Avaunt, Rimon and Proclaim the residue wash-off from fruit was significant, but residues in leaf tissues appeared to be quite resistant to rainfall wash-off. There is much more work to be done in this area of research, including the simulation of more severe rainfall events. We expect to be reporting our findings as they develop over the coming years.

Helpful tips for rainfastness of your sprays:

- Do not spray when rainfall may occur within 2 hours
- Make sure plants are dry before spraying
- If the material is allowed 4 hours to dry after spraying, then depending on the material, it will usually be rainfast to light rains and reapplication earlier than label recommendation is not necessary
- If a heavy rain (1+ inches) falls, then the residual amount of some materials may decrease by half; for example if a material lasts 14 days and heavy rains fall a few days after application, it should be re-applied after 7 days.
- For residual control of insects, the factor that causes the greatest residual breakdown is UV exposure rather than water; materials break down faster in direct sunlight than under cloudy conditions
- Diamide and spinosyn insecticides (Delegate, Altacor, Success) are highly rainfast
- Materials that are not rainfast:
  - Surround (kaolin clay), neem, spinosad (GF-120), sulfur, Mancozeb, copper

# Twin Falls County

## Coryneum Blight Marion Murray, USU

Another disease that we are seeing earlier and heavier than ever is coryneum blight (shot hole) on peach, nectarine, and apricot. Brand new infections on fruit may appear as a water-soaked lesions with a bit of ooze (see right). Soon after, lesions turn purple, and fruits may be infected multiple times. Early infections on the fruit will result in scabby, deformed fruit at harvest. Late infections leave sunken, grayish lesions.

Coryneum blight can be difficult to eradicate because it overwinters in buds, and the fungus can survive in infected twigs for up to three years. A grower must be dedicated to eradication, and combine annual pruning of diseased twigs with a regular spray program. Fall is the optimal timing for treatment with copper, at 50% leaf drop.

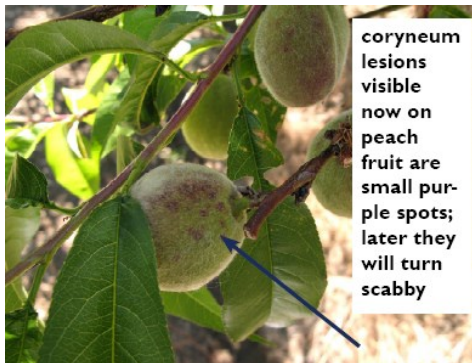
Growers that see disease developing on the fruit should apply 1 to 2 captan or ziram sprays at 10 - 14 day intervals. The weather is predicted to be warm and dry, so infections should slow down. But when rains are expected, plan to apply a preventative spray up to harvest.

## Earwigs

Earwigs will feed on peach fruit.

Usually damage on peach, nectarine, and apricot is seen later in the season, when fruit is riper, but wet conditions favor earwigs, so their activity is increasing. They often will enter fruit through the stem end, but they can also create pits or gouges that extend deep into the fruit. Please note that earwigs are also predators, so if damage is low, you may want to consider letting them be.

Control can be troublesome. Sprays such as Sevin applied to the trunk provide protection for less than one day. Trapping or prevention may be the next best option.



coryneum lesions visible now on peach fruit are small purple spots; later they will turn scabby



severe shot hole on foliage results in brown spots, holes, and yellowed leaves that drop prematurely

The following information is provided by Diane Alston, Extension Entomologist:

I recommend using Tangletrap (a sticky adhesive) applied to a duct tape band placed around the tree trunk (4-5" high to avoid contact with ground cover vegetation). Place the sticky band now before the earwigs begin to crawl into the tree, and reapply the Tangletrap as needed to keep a sticky surface. Tangletrap comes in tubes, tubs and aerosol cans, and should be available in most garden center stores or online.

Alternatively, you can use attractive traps for earwigs. I've had success with tuna cans with a 1/4 - 1/2" layer of bacon grease or tuna juice plus vegetable oil in the bottom. Place the trap cans at the base of trees and remove the trapped earwigs and refill with bait as needed. Warning: the tuna can traps are attractive to cats, dogs, and other furry animals.



Another trap that I've read about, but haven't tried, is made from rolling a strip of corrugated cardboard, tying it closed with a piece of twine and tying it to the trunk of the tree.

Earwigs are nocturnal in their activity and will hide in the roll of cardboard during the day. You can remove and dispose of the cardboard roll and replace it with a fresh one to reduce earwigs climbing into the trees.

ALWAYS read and follow the instructions printed on the pesticide label. The pesticide recommendations in this UI publication do not substitute for instructions on the label. Pesticide laws and labels change frequently and may have changed since this publication was written. Some pesticides may have been withdrawn or had certain uses prohibited. Use pesticides with care. Do not use a pesticide unless the specific plant, animal, or other application site is specifically listed on the label. Store pesticides in their original containers and keep them out of the reach of children, pets, and livestock.

Trade Names--To simplify information, trade names have been used. No endorsement of named products is intended nor is

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