

# Tree Fruit Pest Advisory

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

Spring 2010 Issue 3

## Protect Yourself

**Codling Moth:** If you have not started spraying for codling moth you are on the hot seat. Get out and spray when the rain stops. For information on Research showing rainfast products (products and their degradation in rain) see page 3.

**Fire Blight:** is at moderate risks of infection. The ten day forecast with cougarblight models show that June 15th and 16th are 'extremely likely' for infection. If temperatures increase during this upcoming wet weather you can expect fire blight to be infecting your trees. If May infections occurred the infection started in the flower and moved to the shoot. Your shoots may look like this. On warmer days the infections will ooze with sap-like material. Check your trees daily if possible. Infections usually show up 7-10 days after infection. If you own later blooming varieties you might check them now. If you see signs of infection prune them out during dry weather (if we get any). Prune at least 8 inches

below the signs of infection. Disinfect



pruning shears before repeating process. This will help limit bigger problems later in the year. Most importantly protect young trees as they are most susceptible to infection. Trees older than 8 years with heavy fire blight damage should probably be pruned in the winter. A heavy pruning now could stimulate new shoot growth which in turn is most susceptible to infection.

### Western Cherry Fruit Fly (WCFF):

WCFF are going to start flying in the next couple days in certain areas of Southwestern Idaho.

Chemical control sprays should be applied on or before 1060 degree-days to target mature, egg-laying flies. Sprays should be repeated every 10 to 21 days, depending on the residual activity of the product, to maintain residues high enough to kill adults before they lay eggs. Rain may reduce residues, requiring shorter intervals between sprays. Applications of products with a very short residual life are best repeated every 7 days. For more information on WCFF please see page 2.

**Flatheaded Borers:** Trees at risk are young fruit trees near infested trees, stressed by drought, and trees with wounded bark may require preventive insecticide sprays. Spray is applied to the bark to kill hatching larvae. Spray the trunk up to the lower limbs about June 1 and again on July 1.

### Degree Day no-biofix (6/7/10)

### Look out for:

Sta. Elevation	CM/PTB	Critical Timing	WCFF	1st Spray
Payette(2150)	483	Jun 14-Jul 1	850	Jun 16
Emmett(2390)	424	Jun 15-Jul 2	780	Jun 19
Caldwell(2431)	457	Jun 13-30	859	Jun 16
Parma(2290)	469	Jun 13-Jul 1	913	Jun 13
Ontario(2188)	454	Jun 14-July 2	903	Jun 15
WallaWalla(1397)	520	June 9-26	1009	

- Insect activity (codling moth, fruitworm, aphids, leafhopper, and beneficials) continues to be at a low due to cold weather.

- Watch for powdery mildew lesions on apple, cherry, and peach leaves.

**Western Cherry Fruit Fly  
Tony McCammon**

As their name suggests, Western cherry fruit flies are most often found in tart or sweet cherry trees. It is uncommon to find Western cherry fruit flies inhabiting any other type of tree, although maggots may also feed on plums and pears. These fruit flies are considered chief cherry pests. During harvest season, inspectors are present at cherry packing facilities to examine fruit for any indication of cherry fruit flies. When traces of larvae are detected, the entire batch of infested cherries is discarded. All other fruit from the grower in question is also inspected thoroughly. These regulatory restrictions limit movement of cherries from infested areas to uninfested areas. There is a zero tolerance for western cherry fruit fly in commercial cherry orchards, meaning that control efforts must be perfect. It is very important that backyard cherry growers take efforts to control cherry fruit flies to minimize chances of them moving into commercial cherry trees. Cherry fruit fly maggots feed on the fruit of sweet and sour cherries, plums, pears, and wild cherries. Contaminated fruits often appear normal until maggots mature. At this point, damage and pockmarks appear on the hollow, withered areas of overripe fruits. Fruits may also be marked near the bottom, at egg-



insertion sites. Orchard pest management (published by the Good Fruit Grower) recommends "chemical control sprays should be applied on or before 1060 degree days to target mature, egg-laying flies." It is important to target adult moths before they lay their eggs. NOTE: that cherries are most susceptible to egg laying after they have turned from a green to straw yellow color. The following table presents information on recommended control products. NOTE: If your cherries are destined for foreign markets, check with your packinghouse, crop certifier or broker to confirm which spray products can be applied to cherries entering the country (MRL present) or allowed by the buyers. Do not risk fruit infestations by exceeding the spray intervals. Re-apply the products after any measurable rain event to ensure fruit flies are exposed to lethal residues. Reapply the products if

measurable rain occurs within 24-48 hours of application.

**Sevin XLR, Guthion 50WP, Sniper 50WP, Diazinon, Zolone Flo, Entrust 80 W and GF-120** sprays will only control adult fruit flies. Apply the first spray not later than 5 days after capture of the first fly.

**Entrust 80W and GF-120 NF** are approved for use in organic cherry blocks. Both products contain spinosad. Entrust will also control leafroller and bud moth larvae present at the time of application. GF-120 requires a special sprayer which can be purchased or fabricated - do not use an air-blast sprayer. Carefully read the label instructions before mixing and applying GF-120. Because GF-120 does not control other insect pests (such as cherry fruitworm, leafrollers, aphids), growers should monitor for the presence of other pests to determine need for control.

**Admire and Alias** have some residual contact activity against adult flies (2-3 days) but will kill young larvae hatching in the egg for 10 to 12 days post treatment because it is absorbed into the fruit. These products will also move into the branches and out to the growing tips where it will control any black cherry aphids present. Some research shows mite populations increase after neonicotinoid products such as Admire and Alias are applied. Therefore do not use Admire or Alias more than twice per season. Avoid use of any chemicals harmful to predatory mites in blocks treated with Admire and Alias to avoid

Site	2010 Forecast for 950 degree-day accumulation	2010 Forecast 1 <sup>st</sup> Treatment Recommended 1060 degree-day	2009	Historical 1060 degree day accumulation forecast dates		
				2008	2007	2006
Boise	June 10	June 14	June 3	June 17	June 1	June 4
Caldwell	June 10	June 14	June 6	June 16	June 3	June 1
Nampa	June 10	June 15	June 4	June 16	June 3	June 5
Ontario	June 9	June 13	May 31	June 13	May 24	May 31
Parma	June 9	June 13	June 1	June 14	June 1	June 3

Submitted by Ben Simko on June 5th

possible mite flare-up. Monitor mites the following spring to assess the risk of mite problems. Because **Cygon and Lagon** may not protect the fruit up to harvest, an additional application of another product may be required. Be aware of the preharvest intervals. Apply the second spray 14-21 days after the first.

A very important application is a **post harvest spray** of Admire, Alias (if either only used once before), Cygon or Lagon to prevent late-emerging fruit flies breeding in unharvested whole or split cherries. One estimate suggests that 10,000 cherries per acre remain on trees post-harvest. This application will greatly reduce the following years pressure of WCFF.

Trade Name	Active Ingredient	Target Stages	Number of Applications	Spray Interval <sup>1</sup> (days)	Pre-harvest Interval (days)
Admire 240F or Alias 240 SC	imidacloprid	Larvae, adults	2	10	10
Sevin XLR	carbaryl	Adults	No limit	5 - 7	2
Cygon 480 or Lagon 480 EC	dimethoate	Larvae, adults	1	21	21
Diazinon 50W	diazinon	Adults	3	7	10
Guthion 50WP/ Sniper 50 WP	azinphos-methyl	Adults	2	14	15
Zolone Flo	phosalone	Adults	3	12 - 14	14
Entrust 80W	spinosad	Adults	4	7 - 10	7
GF-120	spinosad	Adults	10	7	0



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

### 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 Research 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<sup>TM</sup>), Novaluron (Rimon), Emamectin Benzoate (Proclaim) and two neonicotinoids, Acetamiprid (Assail<sup>TM</sup>) 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-

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 residues 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 products:

- do not spray when rainfall may occur within 2 hours

# PayetteCounty

- 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

Materials that are not rainfast:

Surround (kaolin clay), neem, spinosad(GF-120), sulfur, Mancozeb, copper

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 criticism implied of similar products not mentioned.

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Payette County  
P.O. Box 10  
Payette ID, 83661

University of Idaho  
Extension