

Welcome to the 2010 tree fruit advisory season!

Get ready for another great harvest of fresh - and pest-free - fruits. Advisory newsletters cover the northern Utah region, and will continue almost weekly through the summer until September. The purpose of these advisories is to notify you of current pest activity and pest biology, pests to watch for, and treatment recommendations. The advisories are offered by the Utah IPM (integrated pest management) program to promote our goal of increasing the use of sustainable pest management practices on agricultural lands in a way that provides economic benefit and human and environmental protection.

We welcome your feedback and questions!

Marion Murray, IPM Project Leader
Diane Alston, Entomologist and State IPM Coordinator

News/What to Watch For:

Look for aphid eggs near buds and in cracks and crevices (creamy green to black in color and the size of a grain of rice)
Look for old fire blight infections (leaves are usually retained) in apple/pear, and coryneum cankers in peaches, and prune out
Images of bud stages, page 3
Spray information, pages 4-5

Bud Stages

Early spring has been a chilly one!
Current bud development is similar to 2008 and behind last spring by about a week. More seasonal temperatures are forecasted for the next 10 days which will speed bud and insect development right along.

Davis County, Box Elder County, Salt Lake County, Utah County:

Apples: silver tip - green tip
Apricots: swollen bud - white tip
Cherries: swollen bud
Peaches: swollen bud
Pears: dormant - swollen bud

Cache County:

Apples: dormant
Cherries: dormant
Peaches: dormant
Pears: dormant

Insect and Disease Activity/Info

It is time for delayed dormant sprays to be applied to fruit trees in northern Utah, which, for insects, is usually a 1.5-2% application of horticultural oil. Sometimes, oil can be mixed with another insecticide for greater efficacy. Only apply delayed dormant sprays if you had problems with certain pests in 2009, such as aphids, scale, or peach twig borer.

The period for applying delayed dormant sprays is:

Apples: swollen bud - 1/2" green
Pears: swollen bud - cluster bud
Peaches and Nectarines: swollen bud - pre-bloom

Some pests that may be managed with delayed dormant sprays are:

Peach twig borer:

Just before peach bloom, overwintering peach twig borer larvae emerge from their protective hibernacula and crawl to feed on buds and leaves, eventually boring into succulent tip growth once growth begins. This time of larval exposure is a good opportunity for control.

Bt (*Bacillus thuringiensis*) or spinosad can be used pre- and post-bloom, and should be applied twice, 7 days apart.

Insect and Disease Information, continued from previous page

Aphids: Aphid species such as black cherry aphid, green peach aphid, and rosy apple aphid overwinter as eggs on twigs of their host. As temperatures warm and plant buds swell, aphid eggs start becoming "active," making them very susceptible to horticultural oil. The oil smothers the eggs and can significantly reduce the aphid population on the tree.

Woolly apple aphid overwinters primarily on roots, but a small portion of the population overwinters on protected sites within the tree canopy. According to Washington State University, a delayed dormant application of oil plus chlorpyrifos (restricted use) provides "summer long suppression of woolly apple aphid."

Pear psylla: Not many people grow pears, but pear psylla seems to find them. This aphid-sized insect produces lots of honeydew and causes burning of leaves. If you had this pest last year, an application of oil will go a long way in reducing the population. Pear psylla becomes active when temperatures reach 50 degrees F, and adults will start flying soon. The oil kills adults and nymphs and also repels adult females, preventing them from laying eggs. At least two oil applications are necessary, at the 2% rate, and then at 1% rate.

Scale: San Jose scale is an armored scale that primarily occurs on apple, but can also be found on stone fruits. It overwinters in various stages on twigs and branches. According to entomologists at Cornell University, a 2% oil treatment at half-inch green on apple trees kills most overwintering immatures. Adults may withstand treatment, and their hatched eggs (crawlers) will need to be treated later in the spring.

Lecanium scale is a soft scale that attacks a wide variety of hardwoods. A 1.5-2% oil application at delayed dormant is very effective.

Other Delayed-Dormant Sprays and Management:

Coryneum blight of peaches, cherries (shothole):

Now is a good time to inspect your trees for overwintering cankers. They will be centered at the bud (shown below), and when the sap starts running in the tree, the cankers will appear gummy. Prune these out and remove clippings to reduce potential for spread. Apply fixed copper before the green tip stage.



Fire blight:

Fire blight is caused by a bacterium, *Erwinia amylovora*. As with coryneum blight, examine your apple and pear trees for cankers (areas of dead tissue) and prune these out now. Once temperatures rise, the bacteria become active in the cankers, start oozing, and can easily be spread with pruning.

Copper has often been recommended at the silver tip to green tip stages as one option in managing fire blight. It has not been shown to kill the bacteria, nor prevent infections. There is some evidence that it delays or reduces bacterial productions in existing cankers. Some plant pathologists such as those at Oregon State University, are not recommending copper due to questionable efficacy.

Upcoming Monitoring/Insect Activity

Pear psylla	Adults active just before bud swell; egg-laying from bud swell to green cluster
Rosy apple aphid	First egg hatch around first pink
Codling moth	Hang traps at first pink
European red mite (rare)	First egg hatch around apple full bloom
Campylomma bug	Egg hatch begins at apple first pink
White apple leafhopper	Egg hatch begins at apple first pink

Bud Stages

Apple



Cherry



Peach



Pear



Apricot



Spray Materials - Commercial Applicators

For dormant and delayed dormant timing

Target Pest	Host	Chemical	Example Brands	Amount per acre	REI	Comments
San Jose scale	pome and stone fruits	2% oil alone or with: pyriproxyfen	Esteem	4-5 oz	varies 12 h	good coverage essential
Aphids, including woolly apple aphid	apple, cherry, peach	1.5% oil alone or with: chlorpyrifos	Lorsban	4 pints	4 d	good coverage essential; addition of Lorsban necessary for woolly apple aphid
Pear psylla	pear	1.5-2% oil with: esfenvalerate lime sulfur kaolin clay permethrin lamda-cyhalothrin pyriproxyfen	Asana Surround Ambush, Pounce Warrior Esteem	3 qts 1 pint 1 gal see label 2.5-5 oz 5 oz	12 h 48 h 4 hr 12 hr 1 day 12 h	good coverage essential Surround (organic) must be applied up to 3 times before first bloom.
Pearleaf blister mite	pear	1.5-2% oil with: carbaryl	Sevin	4 pints	12 h	
Peach twig borer	peach, nectarine	Bt chlorantraniliprole spinetoram spinosad	Biobit, Dipel Altacor Delegate Entrust, Success	see label 3-4.5 oz 3-7 oz 4.5 oz	4 h 4 h 4 h 4 h	apply before bloom to target larvae as they leave hibernacula to feed on foliage and before they enter shoots
Coryneum blight (shot-hole)	stone fruits	fixed copper chlorothalonil	COCS, Kocide, etc. Bravo, Echo	varies 3-4 pints	1 d 12 h	use only fixed copper products. Do not use after green tip stages. Be sure tank is always agitated during sprays.
Fire blight	apple, pear	fixed copper	many	varies	1 d	do not apply copper after green tip stage because fruit russetting may result; there are mixed opinions on whether copper has an effect on managing fire blight

Spray Materials - Residential Applicators

Note that these treatments are only recommended if you know you have the particular pest in your trees or had a problem the previous year.

Dormant and delayed-dormant timing

Target Pest	Host	Chemical	Example Brands	Comments
San Jose scale, aphids	pome and stone fruits	1.5-2% horticultural oil	Volk oil, Bonide all seasons spray oil, HiYield Dormant Spray, etc.	smothers aphid eggs
Pear psylla	pear	1.5-2% horticultural oil	Volk oil, Bonide all seasons spray oil, HiYield Dormant Spray, etc.	Best to treat before egg-laying and when adults are detected.
Pearleaf blister mite	pear	1.5-2% oil with: carbaryl lime sulfur	Sevin variety	Only a single application is needed
Peach twig borer	peach, nectarine	Bacillus thuringiensis spinosad	Ferti-lome Dipel, Green Light Ferti-lome, Green Light lawn and garden, Monterey	apply before bloom to target larvae as they leave hibernacula to feed on foliage and before they enter shoots
Coryneum blight (shot-hole)	stone fruits	copper sulfate fixed copper	Basic Copper, Microcop COCS, Kocide, etc.	copper can be injurious to plant tissues; fixed copper less so. Do not use after green tip stages.
Fire blight	apple, pear	fixed copper	many	do not apply copper after green tip stage because fruit russetting may result

Precautionary Statement: Utah State University Extension and its employees are not responsible for the use, misuse, or damage caused by application or misapplication of products or information mentioned in this document. All pesticides are labeled with ingredients, instructions, and risks. The pesticide applicator is legally responsible for proper use. USU makes no endorsement of the products listed herein.

Tree Fruit IPM Advisory

is published weekly by Utah State University Extension

Editor: Marion Murray, marion.murray@usu.edu

[click here](#) for archived advisories