Tree Fruit IPM Advisory

Weekly Orchard Pest Update, Utah State University Extension, **May 12, 2011**

What to Look for/Do Now:

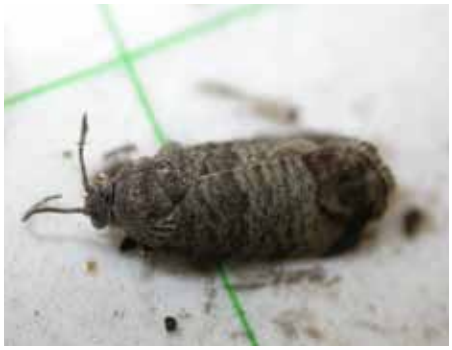
Codling moths have been trapped in a few locations, with spray dates provided below. We expect to know more details of remaining locations by next week.
Continue to examine apple, peach, and cherry leaves for new colonies of aphids forming; oil can be used on aphids at 1% rate anytime during the growing season.
Check table below for fire blight risk.

Insect and Disease Activity/Info

APPLES/PEARS

Codling Moth

A few areas reported biofix (first moth trap captures) this past Saturday. When we know a biofix date, we can then use the codling moth model to determine the date at which egg hatch begins, which corresponds to when to start sprays. Most other areas of northern Utah should see moths flying anytime from May 11 – May 15. Cache, Carbon, and Wasatch counties will probably be a bit later.



Predicting when to spray is determined by the model for codling moth. The model is based on degree days (a measurement of accumulated warmth, calculated from daily max and min temperatures), and a degree day value is assigned to levels of insect development, such as % moth flight or % egg hatch, for each of three codling moth generations. (Click here for more information on Using Degree Days.)

When codling moth adults emerge from pupation, they mate and females lay up to 70 eggs on fruit or on foliage near fruit. Depending on temperature, eggs hatch in approximately in 6-20 days, and larvae bore into the fruit, feeding mainly on the seeds. One to two more generations follow in northern Utah, and two-three in southern Utah.

Location	Date to Start Sprays	
	Option A	Option B
Castle Valley: (May 2 biofix)	Oil on May 17 First spray on May 28	May 19
Capitol Reef National Park: (biofix on May 7)	Oil on May 25 First spray on June 3	May 27
Orem: (biofix on May 7)	Oil on May 26 First spray on June 5	May 27
Genola: (biofix on May 7)	Oil on May 29 First spray on June 10	June 3

The table above shows two options for the first spray of the first generation. Option A is a recommendation out of Washington State University. It is a little more complicated, but may result in a slight cost savings and possibly improved control. We usually recommend to start sprays at egg hatch (Option B, 220 degree days after biofix), targeting the newly hatched larvae before they enter the fruit. But with Option A, you are killing the eggs instead by appling horticultural oil (1% rate) just before they hatch (at 200 degree days). Then, the first traditional insecticide spray would be applied about 7-12 days later (at 350 degree days). The later application of the traditional insecticide is close to the timing of "peak egg hatch", when about 50-75% of eggs hatch in a 1-2 week window of time. Good residue (insecticide) coverage is important at this timing.

After the first insecticide spray has been applied, continue to apply your chosen material(s) at the interval provided on the label.

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Fire Blight

Apples are in bloom in some areas and pears are at petal fall, but still have open flowers. The coming hotter weather signals fire blight warnings in some areas. Watch especially for later varieties, or for blossoms that open late, as these are very susceptible due to the warmer temperatures.

For those of you that had severe blight last year, and whose apple blossoms are open, follow the recommendations based on the fire blight model shown below. If you apply an antibiotic, a second application can be applied 3-5 days later or as indicated by the forecasting. Remember that moisture is required for an infection to take place. This can come in the form of rain or heavy dew (2+ hours).

In the forecasting shown below, the "warnings" are for a generic orchard that has a history of fire blight. If you did not have fire blight in your orchard last year, your warning level would be reduced. Again, the levels are:

Low: low risk of infection, only treat areas adjacent to active cankers if a wetting event occurs

Caution: Wetting at this point is not likely to lead to infection, except within a few yards of an actively oozing canker.

High: If unprotected flowers are wetted, infection is possible. You may choose to apply antibiotic within 24 hours before or after the infection (wetting) event.

Extreme: Outbreak may occur if blossoms are wetted, no matter the blight history of your orchard. Apply antibiotic within 24 hours before or after the wetting event.

Note that the risk levels provided in the table below for areas that had fire blight in the trees last year, AND have oozing cankers now. The risk level goes down if your own trees did not have fire blight (even if there is a chance of spread from neighborhood trees).

County	Location	Fire Blight Risk Potential
Box Elder	Perry	May 13: CAUTION; May 14-16: HIGH
Cache	North Logan	May 13-14: CAUTION; May 15-16: HIGH
Davis	Kaysville	May 13-14: CAUTION; May 15-16: HIGH
Utah	Alpine	May 13: CAUTION; May 14-16: HIGH
	American Fork	May 13: CAUTION; May 14-16: HIGH
	Genola	May 13: CAUTION; May 14-16: HIGH
	Lindon	May 13: HIGH; May 14-16: EXTREME
	Lincoln Point	May 13: CAUTION; May 14-16: HIGH
	Payson	May 13: HIGH; May 14-16: EXTREME
	Santaquin	May 13: HIGH; May 14-16: EXTREME
	West Mountain	May 13: HIGH; May 14-16: EXTREME
Weber	Pleasant View	May 13-14: CAUTION; May 15-16: HIGH

Pear Psylla

Pear psylla is a very small insect that can cause a lot of harm if left untreated. It can multiply rapidly and can also develop resistance to pesticides. It feeds by sucking nutrients from the leaves, creating enormous amounts of honeydew. Their feeding also kills the leaf tissue.


Dormant sprays usually take care of this pest, but if no dormant spray was applied and you had a problem with pear psylla last year, apply a treatment at petal fall.

Campylomma Bug


Nymphs of the campylomma bug can sometimes feed on flower parts and small fruitlets of apples, causing small corky bumps that show up later. It is only the first generation nymphs that damage fruit. "Campy" adults and nymphs are

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typically beneficial predators of mites, aphids, and pear psylla. If no other food source is available, they may feed on flower parts and developing fruitlets, resulting in the damage.

Treatments should occur before or after bloom, or during bloom when bees are not foraging.

PEACHES/NECTARINES

Coryneum Blight (shot hole)

Shot hole lesions are starting to appear on leaves at this time. Shot hole (or coryneum blight) overwinters in buds and spreads from there to leaves and later in the season, to developing fruit. On the leaves, you will see small round holes that may be purplish or tan in color. The center of the lesion will sometimes still be attached. Cool, wet weather contributes to spread.

At the shuck-split stage, you can use Bravo (chlorothalonil, Daconil for residential use), Abound, Captan, Ziram, or Pristine.

And keep in mind that the most important treatment is an application of copper at 50% leaf drop in the fall.

Peach Leaf Curl

In the past, we have seen peach leaf curl in Box Elder, Davis, and Weber counties. Peach leaf curl is a fungal-caused disease that affects peach and nectarine. We may see it again this year due to the prolonged periods of cool, wet weather we have had this spring. Damage may not be evident until later in May or early June. Infection occurs just as the leaves are opening, and causes puckering and distortion of the leaves. The affected area is pink at first, and then turns green, then brown. Leaves will drop. After the initial infections, new ones only occur when temperatures are below 79 F.

If you see these infections, note that there are no fungicides that can be applied at this time. The best treatment is a single application of a fixed copper applied at leaf fall.

For now, maintain tree vigor of infested trees by thinning more fruit than normal, reducing drought stress with irrigation, and applying extra nitrogen fertilizer.

month of harvest. Eggs laid later than this will not have time to develop and cause damage.

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Degree Day Accumulations and Insect Development

Upcoming Monitoring/Insect Activity

Pest	Host(s)	DD/Monitoring Action
Apple powdery mildew	apple	Look for small white lesions on new foliage
Codling moth	apple fruit	First flight approximately Red Delicious full bloom; egg-hatch
San Jose scale	apple mostly	Crawler emergence in mid spring
White apple leafhopper	apple	Look for nymph activity on the undersides of leaves
Green peach aphid	peach, nectarine	Look for colonies on peach and nectarine
Peach twig borer	peach, nectarine, apricot	Moths typically start flying in June; treatment is 1-2 weeks later
Black cherry aphid	cherry	Watch terminals for leaf-curling and feeding

Spray Materials - Commercial Applicators

Target Pest	Host	Chemical	Example Brands (Classification)	Amount per acre	REI	Comments
Campylomma	apple	acetamiprid	Assail (4)	1.7-3.4 oz	12 h	
Rosy apple aphid	apple	acetamiprid	Assail	1.7 oz	12 h	apply post bloom only if scouting shows that this pest is present
		clothianidin	Clutch	2-3 oz	12 h	
		flonicamid	Beleaf	2-2.8 oz	12 h	
		imidacloprid	Provado	4-8 oz	12 h	
		thiacloprid	Calypso	2-4 oz	12 h	
Thrips	light-skinned apples, nectarines	spinosad	Success	4-8 oz	4 h	scout by shaking flower clusters into a paper cup
Pear psylla	pear	acetamiprid	Assail	1.7-3.4 oz	12 h	oil alone is also effective, or add oil to one of these products
		buprofezin	Centaur WDG	34.5-45 oz	12 h	
		spinetoram	Delegate	4-7 oz	4 h	
Powdery mildew	apple	potassium bicarbonate	Kaligreen	2.5-3 lb	4 h	apply starting at open cluster stage and repeat every 7-14 days if necessary
		trifloxystrobin	Flint	2-2.5 oz	12 h	
		myclobutanil	Rally (3)	5 oz	24 h	
		triflumizole	Procure	8-16 oz	12 h	
		pyraclostrobin + boscalid	Pristine (7+11)	14.5-18 oz	12 h	
		fenarimol	Rubigan	12 oz	12 h	
Fire blight	apple, pear	streptomycin	Agri-mycin	check label		apply within 24 h of a wetting event only if fire blight was present last year
		oxytetracycline	Mycroshield	check label		
Green peach aphid	peach, nectarine	acetamiprid	Assail	8 oz	12 h	could use 1 cover spray of Dimethoate post-harvest if any fruit is left in the orchard.
		imidacloprid	Provado	4-8 oz	12 h	
Lygus bug	peachers	azadirachtin	Aza-Direct	1-2 pints	4 h	OMRI certified organic
		beta-cyfluthrin	Baythroid	2-2.4 oz	12 h	restricted use product
		cyfluthrin	Tombstone	2-2.4 oz	12 h	restricted use product
		pyrethrin	Pyganic	4.5-18 oz	4 h	OMRI certified organic

Spray Materials - Residential Applicators

Note that these treatments are only recommended if you know you have the particular pest in your trees.

If your trees are in bloom, we do not recommend applying any pesticides unless you are controlling fire blight with antibiotics. Although it is accepted to use "softer" materials such as Bt or spinosad during bloom, we still recommend either: waiting until the petal fall stage or apply at dawn or dusk when pollinators are not active.

Target Pest	Host	Chemical	Example Brands	Comments/Insecticide Mode of Action Group (group)
Rosy apple aphid	apple	carbaryl	Bayer Advanced	start with a single application
		bifenthrin	Ortho Bug-B-Gone	
		malathion	Bonide, Malathion	
		neem oil	Green Light	
		permethrin	Lilly Miller	
Powdery mildew	apple	bayleton	Bonide	do not apply lime sulfer when temperature is over 75 degrees F
		lime sulfur	Lilly Miller	
		propiconazole	Ferti-Lome	
		neem oil	Garden Safe	
		potassium bicarbonate	Kaligreen	
Fire blight	apple, pear	biological	Blightban, Bloomtime	Biologicals should be applied at 15-20% bloom and again at full bloom
		streptomycin	Ferti-Lome	
		oxytetracycline	oxytetracycline	
Pear psylla	pear	oil	horticultural (petroleum) oil	When using oil on trees with leaves, do not use more than 1% preparation, and apply on days under 85 degrees F
Green peach aphid	peach, nectarine	malathion	Bonide, Malathion	start with a single application
		pyrethrin	Pyganic	

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