

## News/What to Watch For:

Examine leaves of apple and cherry and fruit of peach/nectarine for powdery mildew lesions. Apply a fungicide where necessary to prevent additional spread.

Examine apple and peach leaves for shot hole infections (purplish lesions and holes in leaves); treat with fungicide if levels are high.

Thin apples when they are 1/2-inch in diameter, and thin peaches now, or in the next few weeks (earlier is better). On apples, thin clusters to 1 apple and to 6 inches apart. Thin peaches to 4-6 inches apart.

Updated Codling Moth Spray Dates and Residential Products, pgs 5-6.

## JUST THE BASICS: Current Treatments


### APPLE & PEAR


- The period of rapid *codling moth* egg hatch is coming up.
- Look for *fire blight* infections in the next few weeks and prune them out immediately (in dry weather).

### PEACH/NECTARINE, APRICOT, CHERRY

- If *coryneum blight* has been a problem in your trees, apply fungicide to prevent further spread.
- No treatment information yet for peach twig borer, greater peachtree borer, or western cherry fruit fly.

## Insect and Disease Information

: information for residential settings

: information for commercial orchards

### APPLE and PEAR

#### Codling Moth

**Hosts:** apple, pear

- see page 5 for updated dates

The cooler weather has changed treatment dates in a few locations. For the most part, later this week and next week, most sites will be in the “period of greatest egg hatch.” What this means is that 75% of all eggs for the first generation will be hatching in that time period. So if you applied a treatment for the start of egg hatch, be sure to re-apply once or twice during the date range shown on the table.

You can also take some time to inspect your fruit for any codling moth activity. Typically, with the smaller-sized fruit, larvae will enter through the calyx (blossom) end, so you may not be able to tell that there is a “worm” in the apple until it starts pushing out frass (poop).



While fruit is still small, codling moth larvae will often enter the fruit through the calyx (blossom) end. As they feed, they push out frass (poop).

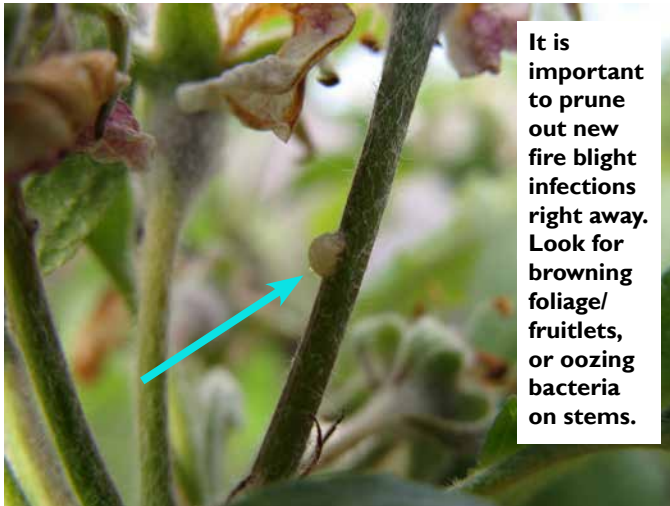
Backyard growers should note that most of the time, fruit that is infected early will drop. So not only is it important to keep fruit protected, but also to rake up and remove all fallen fruit throughout the season.

## Insect and Disease Activity, continued

### Fire Blight

**Hosts:** apple, pear

- **prune out new infections**



**It is important to prune out new fire blight infections right away. Look for browning foliage/fruitlets, or oozing bacteria on stems.**

Very few fire blight strikes have been seen so far in Utah orchards. If any infections occurred during bloom, the symptoms will show up approximately 2 to 3 weeks later. Look for fruit clusters that appear shriveled and brown, and wilted leaves. In the right weather conditions (warm and moist), there will be oozing bacteria associated with the infected plant tissue.

Prune out all infections as they are found. This will not only prevent the infections from becoming larger, but also reduce the inoculum (source of bacteria) in the orchard.

Prune in dry weather only. To be safe, wipe pruners with bleach or disinfecting wipes in between cuts. For infections that are caught early, remove twice the length of the visible symptoms. If moisture is predicted after pruning, remove the debris rather than leaving it in the orchard. (If conditions are hot and dry, it is OK to leave the debris on the ground.)

## PEACH/NECTARINE, APRICOT, CHERRY

### Coryneum Blight

**Hosts:** peach/nectarine, apricot, plum

- **apply fungicide between rains**

In spring, dealing with tree diseases like coryneum blight and powdery mildew is always difficult. These diseases spread faster with moisture, but growers need clear and non-windy conditions to spray. The rains this May have made is difficult for many growers to find a window to apply fungicides.

Unfortunately, coryneum infections have already been seen on apricot and some peach fruits. These existing infections will contribute to the spread of new infections on leaves and fruit.



There is nothing to be done about existing infections. But future infections can be prevented with a fungicide spray. There are several options for commercial growers, many of which are effective when applied either before or after a rain.

For backyard growers, Captan is only effective when applied before a rain. Spectracide Immunox can be applied after a rain, but may not provide complete prevention of infection.

When temperatures are warm (above 75), all that is needed is 4-6 hours of rain to cause new infections.

Commercial growers can find options by [clicking here](#) (scroll down the page).

Backyard growers, see page 6.

### Cherry Powdery Mildew

**Hosts:** tart cherry

- **apply fungicide to prevent spread**



Cherry powdery mildew can be a serious disease of cherries, particularly tart cherries, because it can reduce



## Production Information

photosynthesis, which may affect the subsequent year's crop. A few light infections are now starting to show up in Utah and Davis Counties.

Keep in mind that the current rains will not contribute to the spread of this disease. Instead, it is the humidity that comes right after rains, especially with a dense canopy. Cherry powdery mildew overwinters as resting spores in fallen leaves, on the orchard floor, or in bark crevices. It needs 90 percent humidity and temperatures between 50-78 F for infection to occur. Leaves, fruit, and fruit pedicels can all become infected.

The earliest infections are found on leaves near limb crotches on the lowest, interior twigs (where humidity is highest). These infections then serve as the source for future infections that can repeatedly occur throughout the summer.

A fungicide spray or two is recommended as soon as the first mildew lesions are spotted. Before the typical white "powdery" appearance, the infected area will be a faint yellow blotch.

Commercial growers can find options for cherry powdery mildew by [clicking here](#) (scroll down).

### Bacterial Canker

**Hosts:** sweet cherry

- *prune out new infections*



This bud and leaf cluster was killed by bacterial canker, showing the typical amber ooze.

Bacterial canker is a disease of sweet cherry that is mostly kills buds and twigs, but fruit and foliage can also be infected, especially during the periods of cool, wet weather that we are experiencing now.

During extended rainfall in the spring, the disease-causing bacteria are spread from oozing cankers on the tree to flowers, foliage, and any open wounds.

The symptoms on the leaves are angular brown to black spots that drop out of the leaf, leaving a tattered appearance. Fruit



This image shows a bacterial canker on a sweet cherry limb. The area under the oozing bark is streaked brown.



Leaf infections are angular and will drop out of the leaf; fruit infections cause indented dark lesions.

infection shows as brown to black depressions. The bacteria move through these infections into the twigs, killing the inner bark and girdling the twig. It eventually may spread to larger branches. Ooze is often associated with twig or branch infections.

If bacterial canker has been diagnosed, management is difficult and involves careful pruning and application of copper.

Any infected tissue should be pruned out in dry weather, and tools should be disinfected between cuts. Cut the infected limb several inches below the cankered area. Fungicide sprays during the growing season have not been effective in disease control, but applying copper in the fall and/or before bud break in spring may help prevent spread.

## Production Information

### Safe Handling and Application of Pesticides



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#### Storage

- Always store in their original container and keep the label.
- Always store pesticides out of children's reach -- preferably in a locked cabinet.
- Garden sheds and greenhouses are not ideal for storing pesticides as they can get very hot in summer or cold in winter. Pesticide products are best stored at an even temperature.

#### Pesticide Label

- Read the label before making any applications.
- The label will explain how to use the product safely and any special precautions you need to take. For example, you may need to keep children and pets out of treated areas, or you may need to wait for a certain length of time before eating the fruit or vegetables you have treated. The label will also tell you whether you need to wear special clothing, gloves, dust masks, etc.

#### Mixing Pesticides

- Pick an area where you will mix pesticides and keep pets and children away from this area.
- Never make up more than you will need on that day.
- Do not be tempted to add extra pesticide/product to make it stronger – this isn't necessary and could even damage the plant or lawn that you are treating.
- Never store pesticides that you have mixed and not finished using. Concentrated pesticides that have been diluted and stored may not work as well when you next use them, and more importantly, it is illegal to store pesticides that are unlabeled and not in their original container for safety reasons. Remember to only dilute enough for that day's use.

#### Applying the Pesticide

- Before applying, remove pets and children and all their toys, from the area. Keep children and pets away until the pesticide has dried or as long as is recommended on the label.
- Wear appropriate clothing as directed on the label.
- Wash your hands after applying before you do anything else and change and wash your clothes.

#### Disposal of Unwanted Pesticides

- Whether you've diluted it or not, never pour pesticides down a drain or any other water drainage system (e.g. sink or toilet) because of the risk of contaminating water and harming wildlife. (It is also illegal.)



- Pesticide containers that have held concentrated product (i.e. requiring dilution before use) should be rinsed three times. Get rid of rinse by adding to your diluted spray solution. The empty container can then be placed in household waste.
- Empty pesticide containers that have held Ready-to-Use product (i.e. trigger sprays) can be disposed of directly into your household waste.
- Utah Dept. of Ag. and Food sometimes holds pesticide collection programs to keep hazardous products out of landfills and combustors.

## Spray Timing Information - Codling Moth

Please check this table at each advisory as the information may change as the dates get closer. The forecasts use the average temperature for each site. Fruit should remain protected through each generation according to interval provided on your pesticide label. Many more locations can be viewed on the [Utah Climate Center TRAPs website](#) (select location; select codling moth).

### Codling Moth, First Generation

In the table, choose either Option A or B when starting your codling moth sprays.

**Option A** is what most people will do. Apply insecticide at the recommended date, and repeat. **Option B** is an alternative that may help to reduce sprays. Liberally apply horticultural oil (1%) on the first date, and then apply your regular insecticide on the later date. The oil kills eggs that have been laid on fruit up to that point.

The “period of greatest egg hatch” is the time when 75% of all eggs for the first generation will hatch. Use this information to time your treatment applications.

County	Location	Option A	Option B		Period of Greatest Egg Hatch
		Apply first spray	Apply oil	Apply first spray	
Box Elder	Perry	passed	passed	May 27	May 27 - June 17
	Tremonton	May 21	May 19	June 2	June 1 - 20
Cache	Logan Airport	May 31	May 29	June 11	June 10 - unknown
	River Heights	May 29	May 27	June 10	June 9 - unknown
Carbon	Price Airport	May 28	May 26	June 7	June 6 - unknown
Davis	Kaysville	passed	passed	May 27	May 26 - June 14
Grand	Moab	passed	passed	passed	through June 1
Iron	Cedar City Airport	May 27	May 25	June 6	June 5 - unknown
Salt Lake	Benches/Cooler sites	passed	passed	May 29	May 29 - June 13
	Most areas	passed	passed	May 24	May 23 - June 9
Sevier	Monroe	passed	passed	May 26	May 25 - June 16
Tooele	Erda Airport	passed	passed	May 27	May 26 - June 15
	Grantsville	passed	passed	May 25	May 24 - June 13
Uintah	Vernal Airport	May 31	May 29	June 10	June 9 - unknown
Utah	Alpine	May 20	passed	June 2	June 1 - 20
	American Fork	passed	passed	May 28	May 27 - June 15
	Genola (CHF)	passed	passed	May 21	May 23 - June 14
	Lincoln Point	passed	passed	May 30	June 1 - 19
	Orem (Lindon)	passed	passed	May 27	May 27 - June 12
	Payson	passed	passed	May 27	May 26 - June 14
	Provo Airport	passed	passed	May 27	May 27 - June 14
	Provo Canyon	May 25	May 27	June 4	June 5 - 20
	Santaquin (South Ridge)	passed	passed	May 31	May 31 - June 20
	Tickville (Oak Springs)	May 25	May 22	June 7	June 6 - unknown
	West Mountain (Wall)	passed	passed	May 28	May 27 - June 15
	Weber	Ogden Airport	passed	passed	May 27
Pleasant View		passed	passed	May 22	May 20 - June 11
Wasatch	Heber City	June 2	May 31	June 11	June 10 - unknown
Washington	New Harmony	May 22	May 19	June 2	June 3 - 20
Wayne	Torrey	May 19	passed	June 1	May 31 - June 16

## Spray Materials - Residential Applicators

Note that these treatments are only recommended if you know you have the particular pest in your trees. We recommend learning about specific pests, and scouting your trees at least once/week.

Target Pest	Host	Chemical	Example Brands	Comments
Codling moth	apple, pear	<i>Conventional</i> carbaryl acetamiprid malathion gamma-cyhalothrin  <i>Soft/organic</i> oil (1%) spinosad  codling moth virus	Sevin, Bonide Fruit Tree Spray, etc. Ortho Max Flower, Fruit, and Veg. Malathion Spectracide Triazicide  Many products Green Light, Gardens Alive Bull's Eye, Monterey Cyd-X	<b>acetamiprid:</b> every 14 days <b>carbaryl:</b> every 14 - 21 days <b>malathion:</b> every 7 days <b>gamma-cyhalothrin:</b> every 14 days <b>hort. oil:</b> lasts 5-7 days for killing eggs; use at beginning of each generation; apply at 1% rate only when temperatures are below 80 F; follow up with a different product <b>spinosad:</b> every 7 days <b>codling moth virus</b> can only be purchased online
Powdery mildew	apple, pear, peach, cherry	<i>Conventional</i> myclobutanil  <i>Soft/organic</i> neem oil  potassium bicarbonate	Spectracide Immunox  Garden Safe, Fertilome Triple Action Kaligreen, Monterey Bi-Carb	<b>myclobutanil:</b> lasts 14 days; repeat once <b>neem oil:</b> repeat 1 to 3 times every 5 days <b>potassium bicarbonate:</b> repeat 1 to 3 times every 7 days
Fire blight	apple, pear	streptomycin oxytetracycline	Ferti-Lome Mycoshield	Do not use antibiotic unless necessary; apply <b>streptomycin</b> within 24 h of a wetting event only if fire blight was present last year; <b>oxytetracycline</b> within 12 hr.
Aphids	all	<i>Soft/organic</i> oil (1%) insecticidal soap	Many products, EcoSmart Safer's, Bayer Natria, Bonide	<b>oil:</b> allow 4 hours-time for application to dry before temps reach 85 or above.
Coryneum blight	peach, apricot	<i>Conventional</i> chlorothalonil  captan	Fung-onil, Ortho Max Disease Control Captan	Apply once at shuck split stage <b>chlorothalonil:</b> do not use after shuck split <b>captan:</b> use as a preventive before a rain

**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

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