

## JUST THE BASICS: Current Treatments

### GENERAL

- Clean up fallen fruit to reduce pest pressure for next year.
- Mow tall weeds around trees/install barrier or wire to reduce rodent problems and deer rubbing.
- Make sure all new plantings get white tree paint or tree wrap (base of tree to scaffold limbs) from December through early April, to prevent sun scald.
- Give trees a good watering before the ground freezes.
- Do not do any pruning now; wait until winter (apples) or early spring (peaches).


### APPLE & PEAR


- Apply lime-sulfur when the first leaves start turning color to control *blister mites*.
- To reduce *codling moth* for next year, remove bins and debris from the orchard after harvest and remove fruit on the ground or left on the tree.

### PEACH/NECTARINE

- Prevent new *coryneum blight* (shothole) infections this fall by applying copper to trees when 50% of leaves have fallen.

## Insect and Disease Information

 : information for residential settings

 : information for commercial orchards

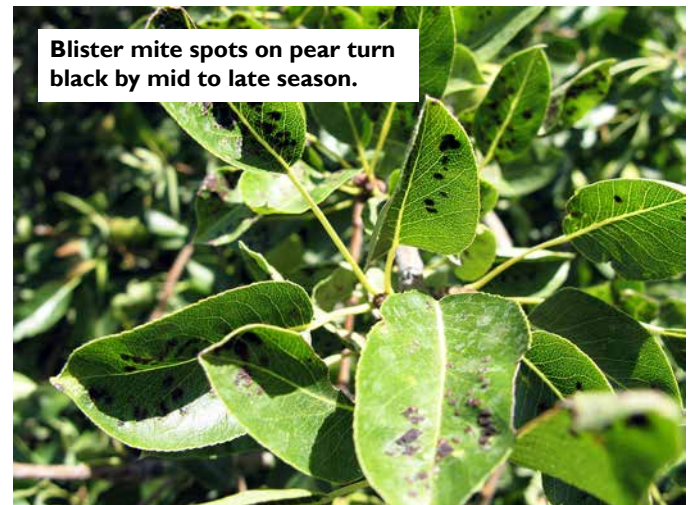
### APPLE & PEAR

#### Blister Mites

Hosts: apple, pear



Blister mites and other eriophyid mites can be treated now, and no later than just before leaf drop. They are more of an aesthetic problem, and do not harm the health of the tree. In fact, they serve as a food source for early emerging predatory mites in the spring. In turn, the predatory mites will take care of the harmful spider mites that are active during summer.



If treatment is desired, options include:

- 1.5-2% oil, thoroughly covering the bottoms of the leaves
- Sevin (carbaryl), alone or with 1% oil
- lime-sulfur (only at this time of year, you can mix with oil, but not on drought-stressed trees)

Blister mites belong to a group of mites called eriophyid mites (air-ee-oh-FYE-id). They are so small that they are invisible to the naked eye, but their feeding can cause visible symptoms.

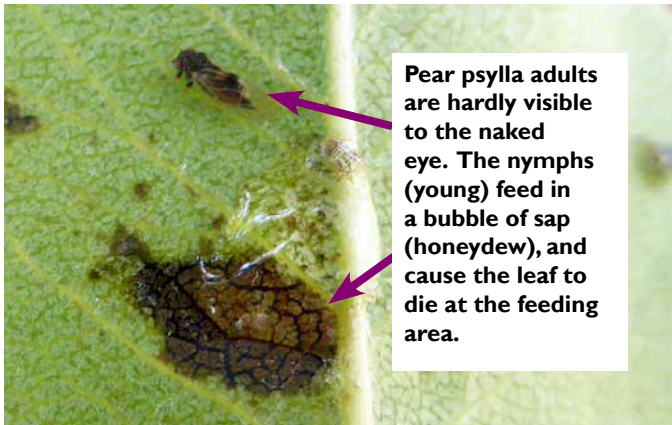
## Insect and Disease Information, continued from previous page

Small raised blisters form on the leaves of pear and apple, which—by the middle of summer—look like brown or black leaf spots. In the fall, infested leaves will change color and drop before the healthy leaves.

In early fall, just as the leaves start to turn color, the mites migrate to leaf buds to spend the winter under the bud scales. Their exposure at this time makes it a good opportunity to treat.

### Pear Psylla

**Hosts:** pear



Early fall is a good time to treat for pear psylla before the adults migrate to protected areas in leaf litter or on tree bark for the winter.

To determine whether a post-harvest treatment is necessary, examine one shoot on at least 20 trees in your orchard (or 20 shoots on 1 to 2 trees) for the presence of nymphs (usually sitting in a drop of honeydew). If activity is seen on at least 5 shoots, a treatment is warranted.

See Blister Mites for treatment options.

### Fire Blight

**Hosts:** apple, pear



Fire blight-affected shoots are easy to spot in fall and winter because the leaves remain attached.

As fall approaches, examine your apple and pear trees for fire blight cankers. These will be easy to spot because the leaves will remain attached to the dead shoots.

These shoots should be pruned out when you conduct your normal late winter pruning. At that time (when trees are dormant), it is not necessary to sterilize your pruners between cuts, and affected shoots and branches should be removed 10-12 inches below the diseased tissue. If you are diligent about removing as much fire blight as possible, you are reducing the amount of inoculum in your trees and lessening the chances of an outbreak for next season.

## PEACH/NECTARINE/CHERRY

### Coryneum Blight

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

**New infections occur in the fall on leaf scars, so be sure that the spray at 50% leaf drop covers these areas, and is sprayed with force to knock down the remaining leaves and cover those scars, too.**



The time to treat coryneum blight this fall is when 50% of leaves have dropped. Options include:

- fixed coppers or copper sulfate (Kocide, C-O-C-S, Bonide, Lily Miller Microcop, etc.)
- chlorothalonil

This disease affects many parts of the tree, including buds,



**This past season, due to the wet month of May, a lot of coryneum blight was seen on cherries. Those affected trees should also be treated this fall.**

## Insect and Disease Information, continued from previous page

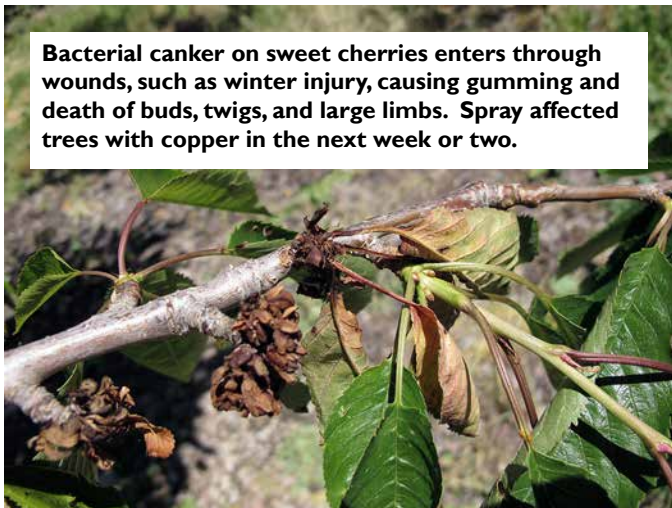
small twigs, leaves, and fruit, so it is important to prevent new infections from happening in the fall. When leaves drop, they leave a small open scar, and if any spores land on those scars under the right weather conditions, the fungus will invade the tissue and kill the bud. It is these bud infections that then lead to new leaf and fruit infections the following spring.

At 50% leaf drop, the exposed scars can be protected, and the use of a high pressure sprayer will knock remaining leaves off so that the rest of the leaf scars are also covered by the spray.

If any trees or orchards have severe infections, it will take at least three years of diligent fall, spring, and summer treatments to suppress the disease incidence.

### Bacterial Canker

**Hosts:** sweet cherry, peach (rarely)



**Bacterial canker on sweet cherries enters through wounds, such as winter injury, causing gumming and death of buds, twigs, and large limbs. Spray affected trees with copper in the next week or two.**

Like coryneum blight, new bacterial canker infections can enter trees through leaf scars in the fall. Research out of Oregon State University has shown that an application of fixed copper or Bordeaux Mixture in mid to late October can help reduce the incidence of this disease the following spring.

Bacterial canker is a disease of young sweet cherry trees, or mature cherries affected by winter injury or other factors that cause wounds. The bacteria invade bark and phloem tissue, causing cankers that can grow to eventually kill large branches or the entire tree.

Sweet cherries that show oozing sap from dead buds and twigs, along with clusters of dead leaves or dead shoots, typically means an infection by bacterial canker.

### Mealy Plum Aphid

**Hosts:** most noticeable on apricot



**Winged aphids are returning to their woody hosts to lay eggs for overwintering in cracks and crevices near buds.**



For the last few weeks, migrating aphids have been flying to their woody plant hosts to get ready for egg-laying. Although there are several species, the most noticeable aphid that we see is the mealy plum aphid.

This aphid spends the summer on cattails and reed grasses. In late summer, it flies to apricot and peach trees and females give birth to live young. The offspring mature to males and females and after mating, females lay eggs in cracks and crevices near buds.

Research has shown that the number of aphids seen in fall does not correlate to the number of aphids that hatch the following spring. The aphids that are flying around and feeding now will soon be dead with the first hard frost, and only a portion of the eggs that were laid will survive the winter.

Having a population of aphids in fall is actually good, as they serve as food for natural enemies (lady beetles, lacewings), helping these good insects to thrive. In addition, aphid feeding at this time of year is not affecting tree health. Therefore, no treatment is recommended at this time. It is best to wait until spring and apply a dormant oil spray to kill the eggs.

**Insect and Disease Information, continued from previous page**

**APPLE MALADIES FOUND AT HARVEST**



**Codling moth can introduce fungi or bacteria that can cause a soft, spongy rot.**



**The rot introduced by codling moth can also be dry and firm.**



**Earwig feeding. Note the black dot (excrement) inside the hole, which helps to identify earwig feeding.**



**Birds are becoming more and more of a problem in orchards.**



**Powdery mildew causes lace-like russetting on fruit.**



**Some nutrient or pesticide sprays can puddle at the stem end, and cause russetting of the fruit skin.**

**Insect and Disease Information, continued from previous page**

*Apple Maladies, continued*



**Frost injury often appears as a circular ring of russet around the apple.**



**Light frost damage will show up as a ring of small lesions around the bottom of the apple.**



**Hail damage can sometimes look like insect damage or a disorder.**



**Thrips are tiny insects that can lay eggs on the developing apple, causing a "pansy" shaped spot.**



**When campylopus bugs feed on developing fruitlets in spring, they cause a raised blister.**



**Apple scab is somewhat rare in Utah, causing black, circular, scabby lesions.**

**Insect and Disease Information, continued from previous page**

*Apple Maladies, continued*



**San Jose scale bodies can be rubbed off of fruit for home consumption, but fruit is unacceptable for the retail market.**



**Lesions caused by bitter pit of apple are focused closer to the calyx end.**



**“Jonathan spot” occurs on Jonathan, Rome, Gravenstein, and other varieties. Its cause is unknown.**



**Lenticels within a sunburned area on fruit frequently become brown or black.**



**When sunburn is severe, fruit can crack. Fruit can be protected from sunburn by applying the product, Surround, which creates a reflective white surface.**



**General fruit cracking is common and its cause is not well-understood.**

**Insect and Disease Information, continued from previous page**

*Apple Maladies, continued*



**When Fuji and Gala apples expand rapidly toward harvest, the internal pressure may cause cracking at the stem end.**



**Stink and lygus bugs puncture-type feeding results in deep pits whose symptom is known as "cat-facing."**



**When rosy apple aphids feed on leaves and flowers during bloom, the resulting fruit becomes deformed and small.**



**Fire blight infections can happen later in the season, especially through wounds on fruit, resulting in a soft rot.**



**A dry rot may develop on the calyx end of fruit, mostly introduced by insect feeding.**



**Honeycrisp apples have a soft flesh, and are prone to diseases like bitter rot.**

# Production Information

## FALL ORCHARD CHORES

**Keep roots moist:** At this time of year, leaves on trees are changing color and dropping, while underground, major root growth is occurring. So it is important to maintain adequate but not excessive soil moisture from now until the soil freezes for the winter.

**Do not fertilize now:** Roots will continue to grow all through fall, but nutrient uptake essentially ceases after the leaves have dropped. It is too late for any fall fertilizer applications, as whatever is applied will leach out of the soil.

**Tree removal:** Trees suffering from significant insect, disease, or other problems should be removed now. There is still time to install a replacement planting this fall.

**Protect from mice, voles:** Create or maintain at least 3 feet of clear space from around the base of each tree to help minimize rodents from feeding on bark and roots. Young trees are particularly susceptible to girdling because their trunk circumference is so small. Consider installing a physical barrier around the trunk and down into the soil up to 6 inches.

**Prevent winter sunscald:** In late winter, bark can be warmed by intense sunlight. If this warming is followed by a



**The upper scaffold limbs of this peach tree were affected by sunscald many years ago. This type of injury often is not apparent until a few years later. It can serve as an entry for canker-causing diseases.**

cold spell that night, the bark can be killed. Sunscald is one of the primary problems affecting young trees in Utah and is a major factor in the incidence of cytospora canker or flatheaded borers. Protect trunks by applying white tree wrap or painting the trunk and lower scaffold limbs with a 1:1 mixture of white latex paint to water. If using tree wrap, remove it in early April.

**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

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