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## Bud Phenological Stages

Development of buds on trees in northern Utah has slowed.

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

Apples: Tight cluster  
Apricots: Full bloom - Petal fall  
Tart Cherries: Bud burst - Tight cluster  
Sweet Cherries: First bloom  
Peaches: First bloom  
Pears: Green cluster

### Cache County:

Apples: Green tip  
Cherries: Swollen bud  
Peaches: First pink  
Pears: Bud burst

### Utah County:

Apples: Half-inch green-Tight cluster  
Tart Cherries: Bud burst  
Sweet Cherries: White bud - First bloom  
Peaches: First bloom  
Pears: Green cluster

### Weber County:

Apples: Tight cluster  
Apricot: Full bloom - Petal fall  
Cherries: Bud burst - Tight cluster  
Peaches: First bloom  
Pears: Green cluster

## Upcoming Monitoring/Insect Activity

Codling Moth	Hang traps at 100 degree days (base 50) First flight at 190-260 DD
Rosy apple aphid	First egg hatch around 90 DD (base 50)
European red mite	First egg hatch around 135 DD (base 50)
Campylomma bug	Egg hatch begins at first pink (apples)
Oblique banded leafroller	Larvae active at 64-140 DD (base 50) Hang traps after petal-fall (apples)
White Apple Leafhopper	Egg hatch begins at first pink (apples)
San Jose Scale	Hang traps at 215 DD (base 50)

## Degree Day Accumulations

March 1 - Wednesday, April 4

County	Location	Codling Moth, Peach Twig Borer (Base 50)	Western Cherry Fruit Fly (Base 40)
<b>Box Elder</b>	Perry	105	250
<b>Cache</b>	North Logan	55	148
	River Heights	79	189
<b>Carbon</b>	Price	156	303
<b>Davis</b>	Kaysville	107	262
<b>Salt Lake</b>	SLCC	139	314
	West Valley City	122	290
<b>Tooele</b>	Erda	139	314
	Grantsville	181	356
<b>Utah</b>	Alpine	101	252
	Genola	141	296
	Lincoln Point	103	242
	Payson	107	243
	Provo	171	332
	Santaquin	108	251
<b>Weber</b>	West Mountain	131	282
	Pleasant View	114	261

“Base 40” and “base 50” refer to the lower temperature threshold at which certain insects develop.

## General Information

### Fact sheets:

Codling Moth  
Peach Twig Borer  
Fire Blight  
Coryneum Blight  
Apple Aphids

WSU Crop Protection Guide (for commercial growers) is now posted online.

Home Orchard Pest Management Guide, from USU Extension.

## Insect Activity

*Note to those who are trapping insects:* Unknown tortricid moths were caught in the codling moth trap and the Oriental fruit moth traps. These generally gray moths with some dark markings are similar in size to the Oriental fruit moth and the codling moth. Be sure to know your target pests and do not confuse these unknown tortricids with them.

### APPLES AND PEARS

**Codling Moth:** No moths have been observed.

If you are a commercial grower, traps for codling moth should already be up. Biofix (two or more moths caught over two consecutive nights) is likely to occur around 190-260 degree days. Check traps as often as possible because an accurate biofix lays the foundation for pesticide spray timings for the entire season.



*Codling moths have a coppery-bronze spot on the back part of their hind wings.*

For commercial growers planning to use mating disruption, (MD) it is still important to get a biofix. If your orchard had CM injury last year, supplemental spray applications will be necessary, and knowing biofix in your orchard will help determine the most accurate spray timings. If your dispensers are out before biofix is set, select a nearby, representative site not treated with MD to trap and obtain a biofix.

### PEACHES AND NECTARINES

**Peach Twig Borer:** In spring, as leaf and flower buds open, overwintering peach twig borer larvae emerge and begin feeding on young leaves and flower petals. Since the larvae are exposed, bloom-time sprays of low-toxicity materials can be useful if you know you had this pest last year. Apply bloom-time sprays late in the afternoon after pollinators stop flying.

**Homeowners:** Bt (*Bacillus thuringiensis*) can be effective and inexpensive. Bt (Dipel, and others) is harmless to bees and very specific to caterpillars. A spray (repeated 7 days later) during the peach bloom is a proven control tactic that will likely kill a large portion of the overwintered larvae.

**Commercial growers:** Consider using Dimilin (diflubenzuron-one spray-persistent) or Bt as these have low toxicity to bees. Spinosad (Success, Entrust, Conserve-two sprays), as an early bloom (50% bloom) spray is another option but must be applied late evening or early morning. All these treatments must be ingested to cause mortality, (not a contact-killer). Traps for PTB moths will need to be hung at 300 DD.

**Green Peach Aphid:** Nymphs were observed in Utah County peach orchards in low population levels.

These aphids are ever-present but injury may not be observed unless aphid populations are large (about 4-10 nymphs per leaf). Feeding by aphids on the first leaves of the season can cause deformation.

Monitor for aphids in spring by beating a limb above a light colored cloth tray to determine if you have a high population. Observe what falls onto the tray, and if more than 100 aphids are present, treatment is recommended after petal-fall. Otherwise, let nature's predators take care of the aphids as they are fed upon heavily by a variety of predators such as lacewing larvae, lady beetles, and hoverfly larvae.

**Homeowners:** Spray with insecticidal soap (MPede, Safer's) before leaves become distorted.

**Commercial growers** who will be spraying for peach twig borer, powdery mildew, and/or coryneum blight at shuck-split may want to consider tank-mixing insecticides that suppress aphids as well as twig borers (eg, Bt + narrow range oil, Success + narrow range oil, Provado, or Asana).

## Disease Activity

### APPLES AND PEARS

#### *Fire blight:*

Apples are at green tip to first pink, so no treatments should be made now. For fire blight infections to occur, several criteria need to be met: open blossoms, moisture, and 55-60 degree temperatures, which have not occurred yet. More on treatments in the next advisory.

If your apples are below the 1/2-inch green stage, fixed coppers and Bordeaux mixture can still be applied. (Spraying copper beyond this period can cause leaf toxicity or fruit russetting.) A copper spray can reduce fire blight bacterial populations.

Continue to scout your orchard for last year's cankers and prune them out.

#### *Apple powdery mildew:*

Powdery mildew causes stunting and distortion of young growth. It can become a problem during warm days and cool, moist nights. Because it overwinters in terminal buds, early spring is a good time to knock



down the sporulating population. Time treatments at the pink bud stage (shown). Recommendations below.

### PEACHES AND NECTARINES

#### *Coryneum blight:*

Continue to examine orchards for gumming on dark, unopened buds and reddish, sunken lesions, and remove them.

## Current Spray Timings

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

### Commercial Growers:

*Peach twig borer* bloom spray at 25-50% bloom (Dimilin, spinosad, or Bt)

*Apple powdery mildew* at pink bud stage: Bayleton, Rally, Rubigan, Funginex, Procure, Sovran, and sulfur formulations, among many other materials, are usually effective.

### Homeowners:

*Peach twig borer* Bt bloom spray at 25-50% bloom and again 7 days later

*Apple powdery mildew* at pink bud stage: Bayleton, Bonide and sulfur formulations

## Additional Information for Backyard Orchardists

The goal of this advisory and of IPM in general is to reduce chemical spraying as much as possible and still have healthy plants and fruits. Spraying depends upon what trees you have, in what stage they are, and what problems you had last year. Note that sprays are not recommended every week, and when they are recommended, it is only when the insect or disease is present.

You will now find any information about spraying under the headings “Spray Timings.” I hope you will find this section useful.

And if you are looking for specific information on the web site, you might start with the fact sheets. There is a search option, and you can search for your tree type, or pest type. Also, the attached publication may help.

### What is IPM?

IPM stands for “Integrated Pest Management.” It integrates knowledge and information with multiple approaches for multiple pests. It is a wholistic landscape management tool instead of a single-species treatment. There are many different definitions of IPM, depending on the perspective of the user. For this case, it is *a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools in a way that minimizes economic, health, and environmental risks.*

IPM dates back to early 1960s. Overuse of DDT in cotton and alfalfa crops were causing major impacts: insects were becoming resistant so their populations boomed; beneficial insects were in decline; secondary pests were increasing; hazards to humans and the environment were documented. University of California entomologists developed the first IPM programs and within two years, farmers significantly reduced pesticide use and showed profits.

IPM is a decision-making process where we look at the “big picture” in order to identify and remove the problem. We must know the insect biology and behavior of our target pests as well as the host (crop) biology, and then use prevention and non-chemical treatments to keep plants healthy. Monitoring and record-keeping let us know when and if treatments are needed.

The IPM project at USU Extension monitors for insects in orchards across northern Utah and shares this information with the growers. Monitoring allows us to provide the most accurate treatment recommendations possible, especially when combined with weather information.

### What is a BIOFIX?

You’ll see that I’ve mentioned the word “biofix” when referring to the codling moth. A biofix is a calendar date that marks a biological event (such as the first emergence of adult moths, or bud-break in spring). An accurate biofix is the foundation of most IPM programs because it provides an anchor for well-timed pest controls.

In Utah, we determine a biofix date for codling moth and peach twig borer moth through the use of pheromone-baited sticky traps. The biofix for codling moth and twig borer is the point at which *consistent moth flight* occurs. So once a single moth is caught in a trap, check the trap daily until more than two moths are caught on two consecutive nights.

The reason for determining the date of biofix is so that the degree-day model for that particular insect can be used. When biofix is determined for codling moth, the degree-day accumulation will be re-set to zero, and we can predict when codling moth eggs will hatch. This is key information for timing insecticide treatments, since once the codling moth larva burrows into the fruit, it is no longer susceptible to pesticides. And the first pesticide spray is recommended at 250-300 degree days after biofix for a contact material, but earlier, about 100-250 degree days, for materials such as insect growth regulators that act best on younger larvae and very early, 75-100 degree days, for materials like oil that act on eggs.

# Bud Phenological Stages

## Apple



## Cherry



## Peach



## Pear



## Apricot



**Precautionary Statement:** All pesticides have benefits and risks, however following the label will maximize the benefits and reduce risks. Pay attention to the directions for use and follow precautionary statements. Pesticide labels are considered legal documents containing instructions and limitations. Inconsistent use of the product or disregarding the label is a violation of both federal and state laws. The pesticide applicator is legally responsible for proper use.

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