

## News/What to Watch For:

Start monitoring newly emerging foliage for aphid activity on the undersides of leaves, and watch apple foliage for powdery mildew.

Watch new apricot and peach foliage for small purple spots. These are infections from *Coryneum* blight. If seen, plan to apply a fungicide at petal fall and again at shuck split stage (when the fruit's papery covering splits off).

Check out the new Utah TRAPs app, explained on pages 4 and 5.

## JUST THE BASICS

### APPLE & PEAR

- Commercial growers should hang *codling moth* traps to get biofix and be sure to have mating disruption supplies ready. Dispensers should be hung at apple full bloom.
- Get ready for *fire blight* (infects during bloom) by purchasing antibiotic spray (if your trees/orchard needs protection), and learn how to use the TRAPs website and new app to see when infections are predicted (see pages 4-5).

- Powdery mildew preventive treatment begins at pink stage.

### PEACH/NECTARINE, APRICOT

- A treatment of Bt or spinosad at petal fall can help reduce *peach twig borer* populations.
- Nectarine and plum growers who have had problems with distorted fruit will need to treat for *thrips* at petal fall.

## Insect and Disease Information

### ALL FRUIT TREES

#### Aphids

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

- *after leaves emerge, examine undersides for aphids*

Aphids overwinter as eggs, and those that survived your dormant oil spray are hatching now. There are several species, but they all have similar life cycles, behave similarly, cause the same damage, and are treated the same.

Monitor your fruit trees as soon as the leaves are large enough to handle. Turn leaves over on several shoots, and look for clusters of aphids near the base of the leaf. Treating them before the leaves start to curl is the key to success.

Backyard growers can use insecticidal soap or horticultural oil (at 1% concentration). Both of these must come into contact



with the aphids to work, and they have no residual activity, so a repeat spray might be necessary.

Commercial growers can find a list of options by clicking [here](#) for apples, and [here](#) for peach.

## Insect and Disease Information, continued

On **apples**, the common aphid species are rosy apple aphid and green apple aphid (the woolly apple aphid will be discussed later).

The green apple aphid is the more common of the two and it won't increase significantly until the warmer summer months. The rosy apple aphid is more of a problem in spring. They inject a toxic saliva during feeding, causing curled leaves and stunted and deformed fruits. They migrate out of the apple orchard to weed hosts in late June and July. Green apple aphids remain in the trees for the entire season.

On **peach**, the most common is green peach aphid. Populations will increase rapidly through spring, causing twisted, distorted, and chlorotic (yellow) foliage. They will eventually form wings and migrate away from the trees to alternate weed hosts for the summer.

On **plum and apricot**, mealy plum aphid and plum leafcurl aphids are sometimes found.

On **cherries**, black cherry aphid is the most common, and is very easy to spot due to their dark color. They can build to high numbers, but are first noticed on suckers close to the base of the tree.

### APPLE & PEAR

#### Codling Moth

**Hosts:** apple, pear

- ***no action currently needed except for commercial growers to hang traps***

In the near future, we will provide exact dates for many areas at which to start treating for codling moth. We will also provide information on treatment options.

To be able to provide dates for treatment, we first need to determine the date that codling moth first starts to fly. Typically, that is around full bloom of 'Red Delicious' apples. Any growers who conduct codling moth monitoring should hang your pheromone traps now.

Codling moth is the "worm in the apple". It overwinters as a full grown larva, and then pupates in the spring, emerging as an adult moth. Females lay eggs on apples, which then bore into the fruit to feed on the seeds (and pulp, along the way). It is best treated with an insecticide that targets the newly hatched larvae.

#### Apple Powdery Mildew

**Hosts:** apple, pear

- ***if PM has been a problem in the past, treat now and again 7-14 days later (after bloom)***



Apple powdery mildew overwinters on twigs, and as a result, new infections can occur early in the season. Depending on weather conditions, it can become active at about the tight cluster to open cluster (pink) stage.

If you have had powdery mildew in the past, consider treating at this time (Flint, Sovran for commercial growers; Spectracide Immunox or 1% horticultural oil for residential growers).

A second application should be made at petal fall (Rally, Topguard, Procure, Vintage for commercial growers).

Commercial growers should be aware that PM fungal populations are becoming increasingly resistant to the DMI fungicides (group 3) (Rally, Indar, Topguard, Inspire Super). These fungicides have curative effects and are mostly used after mildew has shown up. By using a different product at the pink stage, use of these DMI products can be reduced, preventing further resistance.

Powdery mildew spreads with high humidity, usually in the dawn or dusk hours, and does not need standing water to germinate. When terminal shoots hardened off and when days get drier, new infections slow down.

Some varieties are more susceptible than others (such as Braeburn, Gala, Gingergold, Jonagold, Jonathon, Rome). The Delicious varieties are the least susceptible.

## Insect and Disease Information, continued

### PEACH/NECTARINE, APRICOT, PLUM

#### Western Flower Thrips on Nectarine

**Hosts:** nectarine, plum

- *treat right after bloom using spinosad*



Thrips feed in the flower, causing fruit later in the season to be deformed and russeted.

Thrips are tiny insects whose feeding can result in deformed nectarine and plum fruits. Thrips feed on the developing fruit from bloom time to petal fall. As the fruit matures, scars form from the feeding wounds, and oozing gum may be associated with the scars.

Thrips can be monitored by collecting at least 10 blossoms per tree and examining the inside of the flowers with a hand lens. If any thrips are found, a treatment at bloom or petal fall is warranted.

Use organic products containing spinosad for control. Treat at night or early in the morning because spinosad is harmful to bees when the product is wet (dry product does not affect bees). Just one application with thorough coverage is needed.

#### Peach Twig Borer

**Hosts:** peach/nectarine, apricot

- *(optional) applying Bt or spinosad right after bloom can significantly reduce populations*

Peach twig borer (“brown worms in fruit”) overwinters as young larvae in protected areas in the tree canopy. In early spring, they emerge and start feeding on foliage, “waiting” until the shoots expand (at which time, they bore into them).

Before shoots have started to elongate, and while these larvae are exposed, they can be treated to help reduce the population. Data out of UC Davis showed that one or two bloom time treatments of the organic option, Bt (*Bacillus thuringiensis*), is as effective as a dormant oil+insecticide spray.

Bt is a bacterium that must be consumed by the insect to be effective. The material only lasts about 3-5 days, which is why a second treatment may need to be applied. Although Bt does not affect pollinators or other beneficials, it should be sprayed at night so as not to disrupt them.

Bt products can be stored for 2-3 years in a cool, dry location. Liquid formulations will not last quite as long. Once the concentrate is mixed with water, it should be used within 12 hours.



Peach twig borers are easily treated before shoots elongate.

## Production Information

### Assessing Frost Damage

On the morning of April 3, temperatures in northern Utah dropped to 22 to 30°F in most fruit growing regions. In some areas, this may have damaged flowers or developing fruitlets, in particular apricot and plum. The extent of the damage will depend on the temperature reached, and the stage that the plant was in at the time.

The table on the next page shows the low temperatures for some cities, as well as the amount of flower death that may

occur to certain crops at the stage shown in the heading. If your trees are in a different stage, then the results will be different. See [this bulletin](#) for a list of critical temperatures.

If there has been injury, there is nothing that can be done after the fact. But keep in mind that most fruit trees are usually thinned to 10-70% of the crop, so small losses due to frost should not affect yield.

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## Production Information, continued

Low temperature values for some orchard and non-orchard weather stations, and estimated injury based on the crop stage.

Location	Low on 4/3	Apple (Pink)	Sweet Cherry (Tight Cluster)	Tart Cherry (Tight Cluster)	Peach (Full Bloom)	Apricot (Post Bloom)	Plum (bloom)
Alpine	23	90% kill	10% kill	10% kill	90% kill	90% kill	90% kill
American Fork	27	10% kill	none	none	10% kill	90% kill	90% kill
Kaysville	29	10% kill	none	none	none	10% kill	10% kill
Orem	27	10% kill	none	none	10% kill	90% kill	90% kill
Ogden (airport station)	27	10% kill	none	none	10% kill	90% kill	90% kill
Payson	29	10% kill	none	none	none	10% kill	10% kill
River Heights	26	10% kill	none	10% kill	10% kill	90% kill	90% kill
Santaquin	24	90% kill	10% kill	10% kill	90% kill	90% kill	90% kill
West Mountain	28	10% kill	none	none	10% kill	10% kill	90% kill
West Jordan (UDOT station)	27	10% kill	none	none	10% kill	90% kill	90% kill

To determine if flowers have been damaged on your trees, wait about 3 to 5 days or until the temperatures have warmed significantly. Split the flower or fruitlet down the middle and look for brown or black tissue inside. Healthy tissue will be greenish or creamy yellow in color.



## New App for Pest Management



The Utah Climate Center and the USU IPM Program have released a new app that is a mobile version of the website, Utah TRAPs ([climate.usu.edu/traps](http://climate.usu.edu/traps)). It is free for iOS and Android devices. Use the search terms, "utah traps" to find it.

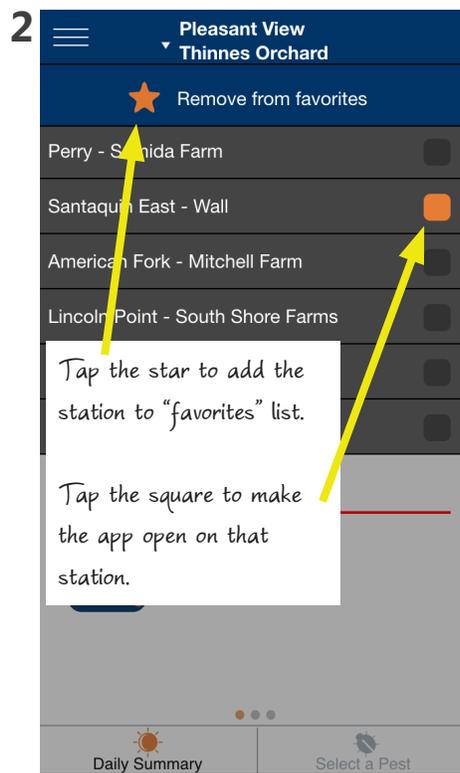
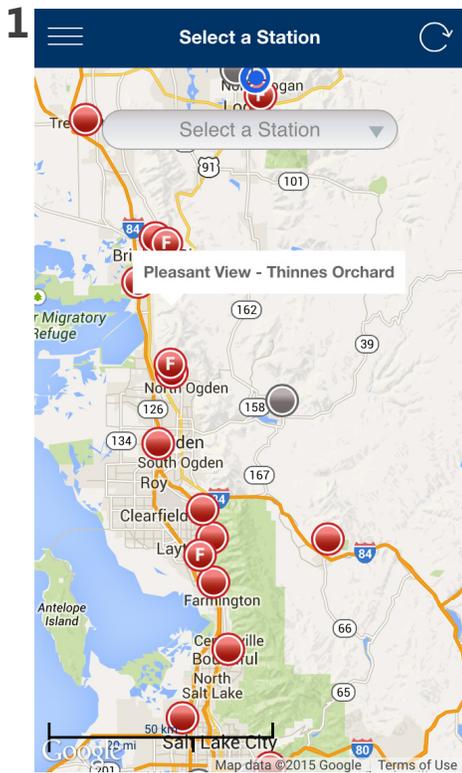
The app and website collect weather data from 50 stations throughout Utah (20 of which are in fruit orchards). The temperatures are used in formulas to provide pest management recommendations for eight fruit pests. In particular, treatment dates are forecasted for codling moth, peach twig borer, San Jose scale, and fire blight. The app also provides temperature, dew point, wind speed/direction, and precipitation data for most stations.

Future updates to the Utah TRAPs app are already in the works, including adding badge alerts, improving irrigation recommendations, and adding pest management for vegetable growers and landscapers. The Utah Climate Center programmers have developed a great app that provides a lot of data in a clever interface. Hopefully you will find it useful, and as always, we welcome feedback. The next page shows some of the app's highlights.

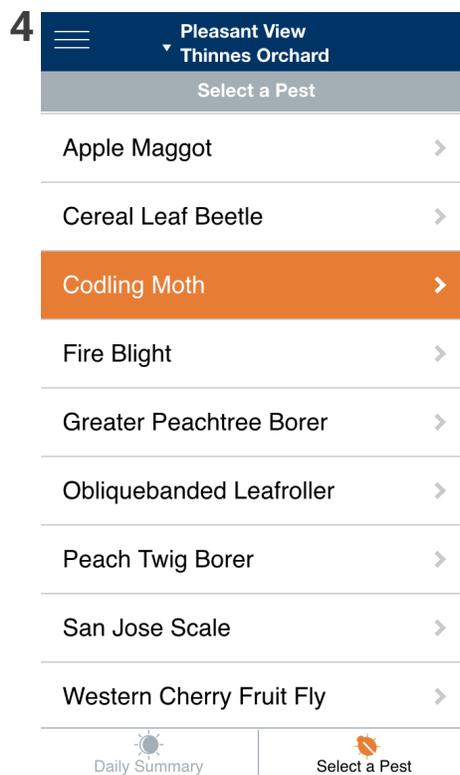
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# Production Information

## UTAH TRAPS APP



1. The app will open on a map. Find the location closest to you. If you press and hold a red dot, the name of the city will show. Tap to select.
2. Your chosen location can become a "favorite" by tapping the down arrow next to the name, and then tapping the favorite star. Make it default.
3. The main screen will show weather data.
4. Tap "Select a Pest" at the bottom of the screen. Select a pest to find out more information.
5. The app will show any "management actions" for that pest for the prior week, current week, and in the next 3 weeks. An example is, "Start treatment for the first generation."



**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.

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