

Contact:

Marion Murray
435-797-0776
marionm@ext.usu.edu
www.utahpests.usu.edu/ipm

[click here](#) for archived advisories

**Jump to CODLING MOTH
Treatment Timings:
Commercial Grower
Homeowner**

Upcoming Monitoring/Insect Activity

Peach twig borer	First flight at 400 DD (base 50F)
Western Cherry Fruit Fly	Hang traps at 750 DD (base 41F)
Codling Moth	Adult peak flight: 350-580 DD (after biofix) Larval hatch: 220-920 DD (after biofix)
Oblique banded leafroller	Moth flight at 832-1000 DD (base 43F)
White Apple Leafhopper	First adults 550 DD (base 50F)

Degree Day Accumulations, as of Wednesday, May 23

County	Location	Codling Moth, Peach Twig Borer (Base 50°F)			Western Cherry Fruit Fly (Base 41°F)
		DD since March 1	CM DD since biofix*	PTB DD since biofix*	DD since March 1
Box Elder	Perry	528	345	179	1003
Cache	North Logan	342	205	---	683
	Richmond	417	162	----	801
	River Heights	436	253	----	823
Carbon	Price	538	268	----	978
Davis	Kaysville	524	321	----	1005
Salt Lake	SLCC	593	328	----	1109
	West Valley City	599	345	147	1116
Tooele	Erda	740	336	----	1246
	Grantsville	773	368	----	1302
	Tooele	476	369	----	1280
Utah	Alpine	479	276	----	935
	Genola	580	340	146	1054
	Lincoln Point	503	291	118	953
	Orem	591	374	----	591
	Payson	522	316	164	974
	Provo	587	241	----	1067
	Santaquin	496	316	157	944
	West Mountain	527	275	133	980
Weber	Pleasant View	576	408	224	1055

*“Base 41F” and “base 50F” refer to the lower temperature threshold at which certain insects develop; ***Biofix** is the date of consistent moth flight. (CM=Codling Moth, PTB=Peach Twig Borer)

Insect Activity

APPLES AND PEARS

Codling Moth (CM):

Trap catches of codling moth adults are high in some areas but there have been no reports of stings as of yet. (Stings are small wounds that indicate attempted larval tunnelling into fruit.) Some areas are approaching the time period of maximum larval emergence (340-640 DD after biofix). Protecting the fruit is critical for this time period. If you applied a material whose residual period ends during this time period, we recommend overlapping with the second application (i.e., if your material lasts 14 days and the 14th day after spray falls within this window, apply your second spray at the 12th day).

Remember that any codling moth larvae that escape treatment for this first generation will come back to haunt us for the second generation. Controlling them with diligence now will save you troubles later in the season.

I'd like to remind **commercial growers** of the importance of incorporating resistance management strategies into your codling moth program. There has long been evidence of resistance to Guthion, and research has shown that insects who developed a resistance to Guthion may also possess a cross-resistance to certain pyrethroids such as those in Warrior and Danitol, and the insect growth regulators (IGRs) tebufenozide (Confirm) and methoxyfenozide (Intrepid). (Resistance to these IGRs has not been studied in Utah. Where resistance to Guthion does not exist, the pyrethroids and IGRs are effective materials.)

For **home orchardists** looking for "softer" materials, there are a few options. Surround is a kaolin clay that forms a barrier on the fruit. Codling moth larvae avoid the Surround-treated areas on apple. To be effective, the material must entirely cover the fruits. One study showed that 3 applications of Surround per generation suppressed codling moth damage 50-60%. A second option is the codling moth granulosis virus (Virosoft CM, www.greatlakesipm.com). The virus is highly virulent, but must be consumed by the larva to be effective. Again, near complete coverage is crucial. We suggest a re-treatment interval of 10-14 days.

I'll repeat that it is important for commercial growers to continue to monitor the codling moth population with pheromone traps throughout the season. This information will help you to determine how well your treatment program is working. If you are using Mating Disruption, we recommend using at least one trap with a high-dose (10x) or combination lure (10x plus a chemical that mimics the scent of a ripe Bartlett pear). If you are not using mating disruption, monitor with a 1x lure. Both these lures can be

purchased in a 60-day formulation. [Click here](#) for links to monitoring supply companies.

Keep in mind that false negatives (no or low moth captures combined with economic damage) can occur. As such, inspect fruit on a regular basis when possible to ensure that you are meeting your desired levels of control.

[Click here](#) for the USU codling moth fact sheet

Woolly Apple Aphid (WAA):

A few aphids were seen in "nooks and crannies" in the interior canopy on apples in Utah county this week. Later in the season, when the colonies increase and temperatures rise, they will move to the trees' outer canopy, on newer growth, water sprouts, and unhealed wounds. WAA can be difficult to control due to their protective coating. Scout the inner canopy of your trees now and apply treatments as necessary to prevent colony build-up.

PEACHES AND NECTARINES

Peach Twig Borer (PTB):

We have had a few moth catches, with biofix dates:

Perry: Friday, May 11

Pleasant View: May 10

Santaquin: May 12

Genola: May 12

Kaysville: May 13

Payson: May 12

West Mountain: May 12

Lincoln Point: May 14

Treatment for PTB is a little different from CM in that the spray timing occurs during the period of 5-28% egg hatch. This equates to 300-400 degree days after biofix. Usually only one spray is necessary, but for those products whose protection interval is 7-10 days or less, a second spray may be warranted. Like codling moth, PTB has more than one generation.

[Click here](#) for the USU peach twig borer fact sheet.

Green Peach Aphid:

These aphids were observed in some locations in Utah county. Winged forms were observed, meaning that the aphids are becoming crowded. Aphids can give birth to 50-100 young, and there may be five to ten generations per year. Usually population numbers are held in check by natural enemies (lady beetles, hover fly larvae, lacewing larvae, fungal diseases, and tiny wasps), but insecticide or fungicide sprays for other problems sometimes disrupt this natural control and result in aphid outbreaks.

Disease Activity

APPLES AND PEARS

Fire Blight:

A large number of flower infections were observed on susceptible apples at one site in Davis county and three sites in Utah county. A few shoot infections were also noticed. Where damage is light, the best option you have is to go through your orchard and prune out these infections immediately. Pay close attention to younger blocks and high-density dwarf trees. Because of fire blight's systemic nature, pruning cuts should be made 12-18" below the infected area. Shoot infections, in particular, can be harmful in that they often result in cankers that carry over to the next season. Applications of antibiotics are not recommended after flowering due to resistance.

How to manage a heavily infected block of older trees via pruning is up for debate. Extensive pruning of heavily blighted trees will stimulate new, succulent tissue, which is very susceptible to infection. Some argue that it is cheaper and just as effective to wait to prune in winter while others advocate the "ugly stub" method, which is to prune to a stub now and do your clean cuts in winter. Whenever you prune, wait for dry weather and after dew has dried.

If the infected shoot is associated with the main trunk or a major scaffold limb, you may want to try the "ugly stub" cut, leaving a two-inch stub for winter removal.

Other practices to keep in mind:

- Avoid excessive tree vigor. Long, succulent shoots are very susceptible, so limiting tree growth with a product that inhibits gibberellin biosynthesis such as Apogee could reduce the potential for fire blight shoot infections. One application should be sufficient for the summer.
- Remove and destroy debris from pruned fire-blighted shoots and limbs, since they can serve as a source of inoculum.

Current Spray Timings - Commercial Growers, continued

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

Codling moth:

The projected timing dates of the spray periods shown below will be updated each week. Spray dates are dependent on what pest stage is targeted. **It is crucial to have fruit protected during the interval 340-640 DD after biofix.

County	City	Spray Date to Target First Larvae Hatch	**Spray Dates to Target Max. Larvae Hatch	End of Egg Hatch
Box Elder	Perry, Willard, Brigham	May 14	May 21 - June 12	June 26
Cache	North Logan	by May 24	June 6 - July 27	July 11
	Richmond	by May 29	June 9 - June 29	July 14
	River Heights	May 18	June 1 - June 24	July 9
Carbon	Price	May 16	May 30 - June 23	July 8
Davis	Kaysville	May 17	May 24 - June 13	June 27
Salt Lake	Salt Lake City (est.)	May 16	May 24 - June 11	June 24
	West Valley City	May 18	May 22 - June 11	June 24
Tooele	Erda	May 18	May 23 - June 12	June 25
	Grantsville	May 16	May 21 - June 10	June 23
	Tooele	May 16	May 21 - June 10	June 23
Utah	Alpine	May 18	May 28 - June 16	July 2
	Genola	May 14	May 23 - June 12	June 26
	Lincoln Point	May 17	May 27 - June 15	June 28
	*Orem-High population	May 13	May 19 - June 9	June 23
	*Orem-Moderate pop.	May 15	May 20 - June 10	June 24
	Payson	May 16	May 25 - June 16	June 30
	Provo	May 20	May 30 - June 16	June 29
	Santaquin	May 16	May 25 - June 16	June 30
West Mountain	May 17	May 28 - June 16	June 29	
Weber	Pleasant View	May 14	May 18 - June 8	June 23

*Due to a high population of codling moth in certain Orem areas, we had an early date for moth flight this year. If you have severe "wormy" apples, use the information for the "high population." Otherwise, use the information for "moderate population."

Materials for codling moth control:

larvae: Assail, Asana, Calypso, Carbaryl, Clutch, Diazanone, Guthion, Codling Moth Granulosis Virus, Imidan, Intrepid, Warrior, Sevin, Malathion

*Reapply insecticides based on the residual period (i.e., protection interval) of the product used, and be sure to rotate among pesticide classes.

Green Peach Aphid:

Asana, Thiodan, Warrior, Diazinon (can combine with first PTB cover spray)

Current Spray Timings - Commercial Growers

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

Peach Twig Borer, First Generation:

The projected timing dates of the spray periods shown below will be updated each week. The spray date represents 300 DD after biofix, when 5% of eggs have hatched. For materials that last fewer than 10 days, apply a second spray.

County	City	Beginning Spray Date
Box Elder	Perry, Willard, Brigham	June 2
Cache	North Logan	----
	Richmond	----
	River Heights	----
Carbon	Price	----
Davis	Kaysville	June 4
Salt Lake	Salt Lake City (est.)	----
	West Valley City	June 4
Tooele	Erda	----
	Grantsville	----
	Tooele	----
Utah	Alpine	----
	Genola	June 4
	Lincoln Point	June 6
	*Orem-High population	----
	*Orem-Moderate pop.	----
	Payson	June 4
	Provo	----
	Santaquin	June 5
	West Mountain	June 5
Weber	Pleasant View	May 29

Materials for peach twig borer control:

-same as codling moth materials

*Reapply insecticides based on the residual period (i.e., protection interval) of the product used, and be sure to rotate among pesticide classes.

Current Spray Timings - Homeowners

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

Codling moth First Generation:

The projected timing dates of the spray periods shown below will be updated each week. The “beginning spray date” is at 220 DD after biofix, when larvae just begin to hatch, and the “ending spray date” is at 920 DD after biofix, when most of the larvae have hatched.

*The third column represents the time period when most eggs are hatching, which is a crucial period for protecting your fruit. Use it as a guideline to time your applications so that you do not miss a spray or are late with a spray during that time.

Read your pesticide label for residual period (length of time it is effective) and re-apply at the given interval from beginning date to ending date, so that fruit is protected during this entire period.

County	City	Beginning Spray Date	Ending Spray Date	*Critical Period to Keep Fruit Protected
Box Elder	Perry, Willard, Brigham	May 14	June 26	May 21 - June 12
Cache	North Logan	May 23	July 11	June 6 - July 27
	Richmond	May 27	July 14	June 9 - June 29
	River Heights	May 18	July 9	June 1 - June 24
Carbon	Price	May 18	July 8	May 30 - June 23
Davis	Kaysville	May 16	June 27	May 24 - June 13
Salt Lake	Salt Lake City (estimate)	May 16	June 24	May 24 - June 11
	West Valley City	May 16	June 24	May 22 - June 11
Tooele	Erda	May 17	June 25	May 23 - June 12
	Grantsville	May 16	June 23	May 21 - June 10
	Tooele	May 16	June 23	May 21 - June 10
Utah	Alpine	May 18	July 2	May 28 - June 16
	Genola	May 14	June 26	May 23 - June 12
	Lincoln Point	----	June 28	May 27 - June 15
	*Orem-High population	May 13	June 23	May 19 - June 9
	*Orem-Moderate pop.	May 15	June 24	May 20 - June 10
	Payson	May 16	June 30	May 25 - June 16
	Provo	May 21	June 29	May 30 - June 16
	Santaquin	May 16	June 30	May 25 - June 16
West Mountain	May 17	June 29	May 28 - June 16	
Weber	Pleasant View	May 14	June 23	May 18 - June 8

*Due to a high population of codling moth in certain Orem areas, we had an early date for moth flight this year. If you have severe “wormy” apples, use the information for the “high population.” Otherwise, use the information for “moderate population.”

Materials for codling moth control:

Chemical	Example Names	Protection Period
carbaryl	Sevin, Bayer Advanced Complete Insect Killer, Ferti-Lome Liquid Carbaryl Garden Spray	7-14 days (read label)
malathion	Bonide Malathion, Hi-Yield 55% Spray,	7-14 days (read label)
<i>Bacillus thuringiensis</i>	Dipel	3-6 days (read label)
spinosad	Success, Entrust	3-6 days (read label)
CM granulosus virus	Virusoft	10-14 days

Current Spray Timings - Homeowners, continued

Peach Twig Borer, First Generation:

The projected timing dates of the spray periods shown below will be updated each week. The spray date represents 300 DD after biofix, when 5% of eggs have hatched. For materials that last fewer than 10 days, apply a second spray.

County	City	Beginning Spray Date
Box Elder	Perry, Willard, Brigham	June 2
Cache	North Logan	----
	Richmond	----
	River Heights	----
Carbon	Price	----
Davis	Kaysville	June 4
Salt Lake	Salt Lake City (est.)	----
	West Valley City	June 4
Tooele	Erda	----
	Grantsville	----
	Tooele	----
Utah	Alpine	----
	Genola	June 4
	Lincoln Point	June 6
	*Orem-High population	----
	*Orem-Moderate pop.	----
	Payson	June 4
	Provo	----
	Santaquin	June 5
	West Mountain	June 5
Weber	Pleasant View	May 29

Materials for peach twig borer control:

-same as codling moth materials

*Reapply insecticides based on the residual period (i.e., protection interval) of the product used, and be sure to rotate among pesticide classes.

Green Peach Aphid:

malathion (Fertil-Lome Mal-a-cide, etc.), pyrethrin (Hi-Yield Rose and Flower Spray, etc.) (can combine with first PTB cover spray)

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.

Utah State University is committed to providing an environment free from harassment and other forms of illegal discrimination based on race, color, religion, sex, national origin, age (40 and older), disability, and veteran's status. USU's policy also prohibits discrimination on the basis of sexual orientation in employment and academic related practices and decisions. USU employees and students cannot, because of race, color, religion, sex, national origin, age, disability, or veteran's status, refuse to hire; discharge; promote; demote; terminate; discriminate in compensation; or discriminate regarding terms, privileges, or conditions of employment, against any person otherwise qualified. Employees and students also cannot discriminate in the classroom, residence halls, or in on/off campus, USU-sponsored events and activities. This publication is issued in furtherance of Cooperative Extension work. Acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Noelle Cockett, Vice President for Extension and Agriculture, Utah State University.