

News/What to Watch For:

- Both codling moth and peach twig borer third generation egg hatches beginning soon in warmer locations of northern Utah
- Spider mites continue to be active where ever predatory mites have not kept them in check
- Now is the time to collect leaves for nutritional analysis by the USU Analytical Lab for precise spring applications
- If 4-6 hr rains occur during peach ripening stage, may need to apply fungicide to prevent coryneum infection
- Codling moth and peach twig borer spray timings, pages 4&5
- Spray materials, page 6

Announcement

Utah State University Fruit & Vegetable Research Field Day for Commercial Growers

Thursday, August 16, 1:00 - 5:00 pm

USU Horticultural Research Farm
725 South Segoe Lily Dr.
Kaysville, UT

Contact Dr. Dan Drost for more info: dan.drost@usu.edu

Four Concurrent Tours:

1. Tree Fruit – Tart Cherries:
 - high density cherries
 - irrigation management technology
 - cherry fertility
 - raptors for mammal control
 - insecticide rotation for cherry fruit fly
 - spotted wing drosophila update
2. Tree Fruit - Peaches:
 - earwig biology and management
 - peach orchard cover crop management
 - organic peach management
3. Berries:
 - native berries
 - blackberry cultivars
 - raspberry tasting trial results
 - new raspberry variety trial
4. Vegetables:
 - compost turner
 - onion nitrogen & crop rotations
 - organic asparagus production issues
 - impact of cover crops on organic vegetables
 - powdery mildew of cucurbits

Insect and Disease Activity

APPLES/PEARS

Codling Moth

The USU monitoring traps are showing low numbers of codling moths for the second generation moth flight, which is good news all around. We suspect that the third generation flight will be even smaller.

Most of the warmer areas along the Wasatch Front will be approaching the end of the second generation egg hatch by mid August. There is no “break” between the end of egg hatch of the second generation and beginning of hatch at the third generation. So basically, continue your spray program until September 15, if you have not harvested by then.

Bitter Pit of Apple



Lack of calcium in apple fruits can result in a physiological disorder of the fruit, leaving sunken, brown lesions on the skin,

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known as bitter pit. The lesions are located mainly on the calyx end of the fruit and are circular in shape. Lesions become worse after storage, turning dark brown to black.

Bitter pit usually occurs on trees with low fruit set, excessive vigor, irregular soil moisture, or on certain varieties. Granny Smith, Golden Delicious, Mutsu, Gravenstein, Yellow Newtown, Jonathan, and Red Delicious are among the more susceptible varieties, although almost any young, extremely vigorous tree may exhibit symptoms.

Treatment:

Calcium sprays have been shown to reduce bitter pit symptoms. Ideally, sprays should be spaced throughout the season, starting 1-2 weeks after bloom and continuing monthly until harvest. However, if bitter pit has been a nagging problem in your orchard and you have not applied calcium yet, consider 1-2 calcium sprays on expanding fruit before harvest (target the fruit, not the foliage). In some studies, calcium in the form of calcium nitrate has shown to work better when applied as late sprays (do not spray at temps above 80-85F). Avoid spraying Crispin and Golden Delicious with calcium nitrate, since fruit damage may result. After harvest, a 4% calcium chloride dip is also effective. Store fruit immediately and wash before eating. (Note that calcium chloride is corrosive to metal.)

For the best bitter pit prevention, an integrated approach of the following cultural practices is important to prevent bitter pit:

- during irrigation season, avoid wide fluctuations in soil moisture
- do not over-fertilize to avoid vigorous growth and over-sized fruit
- do not over-prune
- try to prevent biennial bearing through proper thinning and pollination practices
- harvest at optimal timing because late harvested fruit is prone to bitter bit

Calcium sprays (calcium chloride, calcium nitrate, STOP-IT, Nutri-Cal, Miracal, etc.) should be applied monthly throughout the growing season only if the above practices do not alleviate the problem.

STONE FRUITS

Peach Twig Borer

For the first time since 2007, there will be a few weeks of a third generation peach twig borer egg hatch that peach growers will need to deal with to keep fruit protected. Most sites south of Cache County will see the start of 3rd genera-

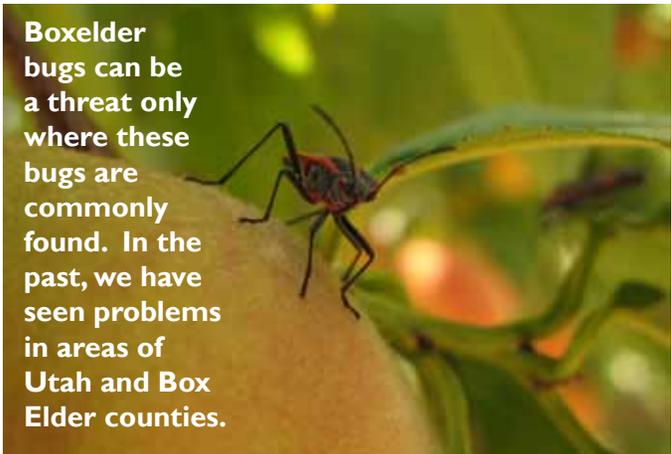
tion egg hatch between August 11 and 19, with a “break” of about 7-10 days after the end of the 2nd generation egg hatch. Where peaches are concentrated (such as Box Elder County), we have seen very high trap catch, suggesting that growers should be ready to keep ripening fruit protected.

Backyard growers that can tolerate some losses can simply remove and destroy infested fruit over the next few weeks until harvest to moderate the population, instead of spraying. This can take more time, but is a good way to remove a segment of the twig borer population without having to spray so close to harvest.

If you are spraying, avoid using pyrethroid insecticides (Asana, Pounce, Ambush, Spectracide Triazicide) at this time of year as they are harsh on predatory mites that provide biological control of spider mites.

Pests of Ripening Peaches

Some areas are harvesting early peach varieties now, which means that pests such as boxelder bugs, earwigs, and European paper wasps are starting to become a concern. One of the best tools for managing these pests is to harvest fruit quickly as it ripens, or even a touch before fully ripe. Keep an eye on the ripest peaches on the trees to see if any of these pests are becoming a concern.



Boxelder bugs can be a threat only where these bugs are commonly found. In the past, we have seen problems in areas of Utah and Box Elder counties.



European paper wasps are attracted to overripe fruit or fruit with exposed flesh.

Alek Komarnitsky, komar@org

If there is a problem with large numbers of any of these pests or other pests of ripe fruit, then a treatment of Prentox

Insect and Disease Information, continued from previous page



Earwigs cause a small but deep pit in the surface of the peach, usually surrounded by black frass pellets (excrement).

Pyronyl Crop Spray (pyrethrin), which can be used up to the day of harvest, or Sevin, which can be used up to 3 days before harvest.

Using special traps can help with some of these pests. Earwigs hide during the day, so trap them by using cardboard or rolled newspapers tucked in limb crotches. Another option is to apply Tanglefoot to duct tape wrapped around the tree trunk.

To deal with European paper wasps, make a homemade trap by cutting the top third from a plastic soda bottle and invert it into the bottom portion. Punch a hole on each side and tie on string for hanging. Add a mixture of 1 part fruit juice to 10 parts water plus 1 tsp liquid detergent to keep the wasps in the water. Adding a bit of ripened fruit will make it even more attractive.

Greater Peachtree Borer

Keep the trunks of peach, nectarine, and apricot trees protected against this pest through September. Most products provide about 3 weeks of protection.

Phytophthora Crown and Collar Rot

Large trees that die suddenly at this time of year have probably been living with *Phytophthora* infections much of the season. An infected tree has a limited ability to transport nutrients and the stress of heat, drought, and bearing fruit can result in a quick death. Trees that have minor infections will show chronic symptoms, such as small, chlorotic leaves and fruit, poor growth, early fall color, and late spring leaf emergence.

Phytophthora is a fungus-like, soil-borne pathogen that kills root and crown tissue. It is present in almost all soils, but infection only occurs with the combination of saturated soils and a susceptible host. The following shows the susceptibility of various fruits:

- Peach and apricot: susceptible, but not commonly seen in Utah



- Apples: M-9, M-2, and M-4 are relatively resistant; M-7 (and M-7a), M-26, and MM-111 are moderately susceptible; MM-106 and MM-104 are highly susceptible.
- Plums and Pears: relatively resistant
- Cherry: susceptible to very susceptible; Mahaleb is the most susceptible cherry rootstock; Mazzard, Morello, and Colt are somewhat more resistant

To prevent infection, avoid planting trees in low spots or in poorly drained soils. Plant new trees slightly high so that they do not settle lower than the normal soil height, and prevent water from puddling around the root collar.

Unfortunately, there is no "cure" for infected trees. Trees that show moderate symptoms may recover with a soil application of Ridomil Gold, which is usually made in spring (on non-bearing trees only). Asymptomatic trees growing adjacent to *phytophthora*-killed trees should be given a foliar treatment with phosphorus acid (Agri-Fos, Fosphite, others), which will help the tree(s) develop tolerance to future infection.

Removal of infected trees and sanitation is important. If possible, do not spread soil or infested debris from one area to another. Do not replant in an infested site without drenching the soil with fosetyl-AI (Aliette) as a preventive. Try to improve soil drainage, monitor soil moisture, and fix any irrigation leaks.

Walnut Husk Fly

Flies are at peak flight, so those who wish to treat their walnuts should continue treatments until a month before harvest. Flies are known to continue emerging until October.

Keep in mind that the flies do not affect the nutmeats, just the husk, so treatments of backyard trees is not always necessary.

Spray Timing - Codling Moth

Codling Moth, Second and Third Generations

Second generation egg hatch is still underway; continue protecting fruit until SEPTEMBER 15. The content below is for information purposes only because there is no long "break" between second and third generations.

County	Location	End of 2nd Gen. Egg Hatch (2100 DD)	Beginning of 3rd Gen Egg Hatch (2150 DD)
Box Elder	Perry	August 8	August 10
	Tremonton	August 19	August 22
Cache	River Heights	August 26	August 29
	Smithfield	August 26	August 29
Carbon	Price	August 20	August 23
Davis	Kaysville	August 11	August 13
Iron	Cedar City	August 19	August 21
Salt Lake	All Regions	July 30	August 2
Tooele	Tooele	August 6	August 8
Uintah	Vernal	August 15	August 17
Utah	Alpine	August 20	August 23
	American Fork	August 12	August 14
	Genola	August 9	August 11
	Lincoln Point	August 11	August 14
	Orem	August 10	August 12
	Payson	August 17	August 19
	Santaquin	August 15	August 17
Weber	Pleasant View	August 10	August 12
Wasatch	Heber City	after September 15	after September 15

Spray Timing - Peach Twig Borer

Peach Twig Borer, Second and Third Generations

End of second generation egg hatch, where you should “keep fruit protected up to” is at 1900 degree days. Third generation egg hatch, which will be occurring only on fruit, begins a few days after the second generation ends. Like prior generations, if you had moderate to severe PTB damage last year, use the earlier spray date to start again. If you had very little PTB damage last year, use the later date to start sprays. These two dates correspond to 2140 and 2250 degree days after biofix, or 5% and 16% egg hatch.

Keep fruit protected until September 15.

County	Location	Keep Fruit Protected Up To (2nd Gen.):	Start Protecting Fruit 3rd Gen.
Box Elder	Perry	August 6	August 17 - 21
	Tremonton	August 20	September 1 - 7
Cache	River Heights	August 25	September 7 - 14
	Smithfield	August 25	September 7 - 14
Carbon	Price	August 28	after September 15
Davis	Kaysville	August 7	August 16 - 21
Iron	Cedar City	August 14	August 27 - September 1
Salt Lake	All Regions	July 29	August 7 - 11
Tooele	Tooele	August 2	August 11 - 15
Uintah	Vernal	August 11	August 23
Utah	Alpine	August 22	September 4 - 11
	American Fork	August 11	August 21 - 25
	Genola	August 9	August 19 - 22
	Lincoln Point	August 12	August 22 - 27
	Orem	August 13	August 23
	Payson	August 13	August 23
	Santaquin	August 12	August 22 - 27
Weber	Pleasant View	August 11	August 21 - 26
Wasatch	Heber City	after September 15	after September 15

Spray Materials - Commercial Applicators

Please look up spray material options in the **2012 Utah-Colorado Tree Fruit Production Guide**. If you do not have a copy and would like one, contact marion.murray@usu.edu. You may also access spray options at the guide's companion website at intermountainfruit.org.

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. Products are listed by *Conventional* (usually broad-spectrum pesticides that are effective, but harmful to beneficial insects), or *Soft/Organic* (not as effective, but safer for the environment and humans). Products are listed in order of efficacy.

Target Pest	Host	Chemical	Example Brands	Comments
Both codling moth AND peach twig borer (except Cyd-X)	apple, pear	<i>Conventional</i> carbaryl acetamiprid malathion <i>Soft/organic</i> hort. oil (1%) spinosad codling moth virus	Sevin, Bonide Fruit Tree Spray, etc. Ortho Max Flower, Fruit, and Veg., Malathion Many products Green Light, Gardens Alive Bull's Eye, Monterey Cyd-X	acetamiprid: every 14 days carbaryl: every 14 - 21 days malathion: every 7 days hort. oil (codling moth only): 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 spinosad: every 7 days codling moth virus (codling moth only) can only be purchased online
Coryneum blight	peach, apricot	captan	Captan	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.

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