Gummosis

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APPLE, PEAR

Codling Moth

Codling moth larvae feed on seeds inside the fruit.

Soon, we will know the timing for starting treatment in northern Utah, but we have not yet caught codling moths in our traps there, yet. Based on information from last year, the starting time will be close to May 20 for the warmest areas of northern Utah. But now is the time to prepare. The table below lists some options to use, depending on how you manage your trees.

Codling Moth Treatment Notes for Residential Trees

Situation	Example Materials	Damage Last Year	Notes on Treatment Program
Organic-residential	Cyd-X, Bt products (Captain Jacks), pyrethrin (Fertilome Fruit Tree) spinosad (Green Light, Monterey), neem oil	high	Apply first application at “start date.” Repeat 7-10 days later for a total of 3 applications in the first generation. When the “start date” for the 2nd generation is provided, spray every 7-10 days until Sept. 15. Pick a different product to use for each generation.
		low	Apply first application at “start date.” When the “start date” for the 2nd generation is provided, spray every 10-14 days until Sept. 15. Pick a different product to use for each generation.
Conventional-residential	Ortho Fruit & Veg (acetamiprid), Spectracide Triazicide (lambda-cy), Malathion, Sevin	high	Apply first application at “start date.” Repeat 14 days later for a total of 2 applications in the first generation. When the “start date” for the 2nd generation is provided, spray every 10-18 days until Sept. 15. Pick a different product to use for each generation.
		low	Apply an application at “start date.” Wait until the “start date” for the 2nd generation is provided, and spray on that date, and again 14 days later. Do the same for the 3rd generation. Pick a different product to use for each generation.

Codling Moth Treatment Notes for Commercial Orchards

Situation	Example Materials	Damage Last Year	Notes on Treatment Program
Organic - Commercial	Cyd-X, Dipel, Entrust, horticultural oil, azadirachtin products	high	Treatments should be applied every 5-7 days throughout each generation. Use a different product for each (entire) generation. Use virus in the 1st and 3rd generations.
		low	Apply oil at recommended timing (200 DD). Apply “delayed” first cover at recommended timing, and repeat 7 days later. For 2nd and 3rd generations, apply 2 covers in each, one at the start of egg hatch, and one during the period of greatest egg hatch (dates to be provided).
		mating disruption	Apply first cover on entire orchard at start of egg hatch. Use traps to determine when to treat again (7-10 moths/week).

Situation	Example Materials	Damage Last Year	Notes on Treatment Program
		high	Spray at start of egg hatch. Repeat during period of greatest egg hatch (dates provided). For 2nd and 3rd generations, apply every 14-21 days (depending on material). Use a different product for each generation.
Conventional - commercial	pyrethroids, Imidan, Altacor, Delegate, Belt, Leverage	low	Apply oil at recommended timing (200 DD). Apply “delayed” first cover at recommended timing (350 DD). For 2nd and 3rd generations, apply once at the beginning of the generation. For 3rd generation, apply again at the recommended timing of greatest egg hatch.
		mating disruption	Apply first cover as border spray. Watch pheromone traps (catches of 7-10/week) to determine supplemental treatments.

Apple Powdery Mildew

Powdery mildew shows up on newer foliage first, and can spread all summer long, depending on humidity.

If present, powdery mildew will start spreading quickly now, and continue to spread so long as conditions are humid in the tree canopy. The humidity can rise just enough for spread on overcast days, especially if the tree canopy is dense. Later in the season, irrigation causes increased humidity.

The fungus that causes apple powdery mildew overwinters on twigs, so this is why new infections happen almost as soon as leaves emerge. Cortland, Idared, Gingergold, Braeburn, Gala, and Jonagold are all varieties that are more susceptible.

Commercial growers: most should have applied a treatment or two by now. If needed, options are shown by clicking here.

Residential growers can use:

- Spectracide Immunox: apply every 14 days as needed
- Wettable sulfur (organic; many brands): apply every 10 days as needed
- Neem oil or 1% horticultural oil (organic; many brands): apply every 3 to 5 days as needed, but not when temperatures will reach 85F within 4 hours of application
- Potassium bicarbonate (organic; Monterey Bi-Carb, Garden-Ville): apply every 7 days as

needed

PEACH/NECTARINE, APRICOT, PLUM

Cytospora canker

Dark gumming is associated with cytospora canker, especially during spring.

Every spring, one of the most common questions I get is regarding gumming on stone fruits (peach, apricot, plum). The oozing is generically referred to as gummosis and it can be clear or dark amber in color. By the end of the summer, it will have become almost rock-hard.

The most common cause of gumming is a disease called cytospora canker. It is caused by a fungus (*Leucostoma cincta*) that must infect bark through an existing wound such as pruning cuts, sun scald, winter injury, hail, etc. It kills the bark and cambium, and the tree oozes gum as a defensive measure. Gumming from cytospora is dark amber in color, and if you scrape the bark off, the dead phloem will appear cinnamon brown in color. Cytospora canker is very common in Utah's peach and apricot orchards, as well as on backyard trees.

Prevention is the key to managing Cytospora

1. In normal pruning operations, make proper cuts (i.e., do not leave stubs or do not make "flat cuts" that remove the branch collar where healing would normally occur) and do not prune in wet weather. Pruning the Orchard
2. Protect the bark during winter from sun scald. Either apply white tree wrap from December to March, or paint the trunk (anytime) with 50/50 latex paint/water;
3. Prune out infected limbs and twigs back to healthy wood, and sterilize tools with 10% bleach or Lysol wipes between cuts. Sometimes it is not possible to remove all infected limbs. In that case, be diligent about tree health, sanitation, and regular pruning practices.
4. Remove severely affected trees from the orchard.
5. Keep trees healthy with optimal watering, mulching, nutrition, etc.
6. An excellent bulletin on Cytospora of fruit trees was written by Colorado State University.

Pruning out cytospora is important. But this cut was made through the middle of a canker. You can see the ooze coming through the cut area.

Cutting out the diseased area is not always successful. The healthy bark may be damaged, or you may not get all of the cytospora, as shown here.

This oozing is associated with shothole borer.

The oozing here is not caused by a disease. It is due to bark splitting from excess fruit load the prior year.

Other Causes of Gumming

- **Thick gumming at the base of the tree** (no higher than 8-12”): *Greater peachtree borer*. Trees can be protected with a properly timed insecticide, typically in late June (we will include dates in a future advisory).
- **Small areas of ooze, throughout the tree**: *Borers*. Flatheaded or shothole borers will only attack weakened trees or wounds such as where sunscald has occurred. Usually there is very little ooze associated with these insects because the trees are already weakened. If the borers attack healthy trees, however, the tree will exude copious sap/ooze to flush out the larvae. This ooze is often clear in color, and limited to beetle entry holes. Management of these pests is difficult, and may include bark sprays of permethrin May through August.
- **Random pattern of gumming**: *Wounds or other cause*. Gummosis not caused by a pathogen will run somewhat clear in color (but will dry to amber). Wounds include frost cracks or sun scald, bark injury, cat scratching, hail, etc. Other causes include planting too deep, excessive irrigation, severe summer pruning, or over-bearing.

If you are not sure that a pathogen is causing the gummosis, scrape the outer bark away. If the inner bark is still cream-colored (healthy), the oozing is caused by a non-living factor, and there is nothing you should do. If the wood is tan to brown, it is dead, and was most likely killed by a pathogen.

It is important to identify the cause of the ooze. Scrape the bark away to find the edge of the diseased area.

Peach Twig Borer

Info for commercial growers only:

- If you are using the Isomate brand of mating disruption for PTB, dispensers can be hung any time.
- Hang pheromone monitoring traps now to get biofix

Beneficials to Look For Now

Aphid activity on fruit trees is starting now, and two important aphid predators are among the first to be seen in spring: lady beetles and syrphid flies (also known as hover flies). Protect them by examining aphid-infested areas for these beneficials, and wait to spray if they are present.

Lady beetle adults seek out their prey and lay clusters of bright yellow eggs.

Lady beetle larva.

Syrphid flies are one of the first insect predators to see in spring. They look like bees, but you'll see that they just have one set of wings, like flies.

Syrphid fly larvae are maggots, ranging in color from yellow to olive green to bright green.