

Slug: Ask the Master Gardener
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Apples are one of Washington's best-known crops. Many varieties are grown here and you either have a tree or know someone who does. You have probably also bitten or cut into an apple and found something else has been eating there before you. Two "worm" problems are apple maggots and codling worms. Neither are actually worms, but larvae.

Apple maggots are the larvae of a type of fruit fly (*Rhagoletis pomonella*). The adult flies begin to emerge in the early summer and feed for about two weeks. This is when they are most attracted to those yellow sticky traps and red sticky spheres you can hang in your trees. After this feeding period, the females lay their eggs just under the skin of maturing fruit. The small punctures made by the females look like tiny pinholes and cause the dimpling you see on the infested apples. Each female lays an average of 180 eggs. 3 to 7 days later, the larvae hatch and begin their feeding, tunneling inside the apples. Bacterial decay follows these tunnels causing the fruit to rot and making the apples inedible. After 20-30 days of feeding, the larvae, now three-eighths-inch long, drop to the ground and bury themselves to pupate in the soil and over-winter. Adult flies emerge the following summer...or the summer after that. (Some pupae remain dormant for 2 or more years.) The cycle then begins again, one generation a year.

Codling moth (*Laspeyresia pomonella*) larvae also invade apples. Their damage is not as devastating as the apple maggot, but is still extremely frustrating. The adult codling moth begins to emerge as the weather warms up in the spring, about a month before the apple maggot fly. The females lay eggs on the leaves of the fruit trees. As the larvae hatch, they munch on the leaves as they move to the fruit. As they reach the fruit, they burrow in, usually at the blossom end. These larvae spend their days tunneling toward the core where they feast upon the seeds. About 3-4 weeks later, the larvae, now about three-fourths-inch long, tunnel their way out. The damage to these apples is the tunnels and the frass left behind by the larvae. This damage can be cut out and the remainder of the fruit used. The full-grown larvae then crawl or drop to the ground and make their way to the trunk of the tree or other debris where they spin their cocoon and prepare to pupate. In about two weeks, they will have become adults and emerge again to begin the 2nd generation. Sometimes, a 3rd generation may develop in the same season.

As you understand the life cycle of these two insects, you can understand how to manage them. Once the larvae are inside the fruit, they are protected. Traps should be set in the trees in the late spring to watch for the adults emerging. The sticky yellow traps and the red spheres scented by pheromone are pretty effective, if placed at this early stage and then used consistently and properly throughout the growing season. These will catch the adult flies. Recommended insecticidal sprays are effective, but only with the correct timing. Remember, insecticides will also kill beneficial insects. Any type of insecticide use is effective only at specific times in the insect's life cycle so correct timing is essential. Probably one of the best ways to control infestation is to keep the area around the trees clean. Pick up dropped apples and debris daily. Also remove loose bark from the tree. You can wrap the trunk with a strip of corrugated cardboard. The larvae may decide to burrow into this cardboard to spin their cocoons. Make sure to check and destroy these strips as they fill with the cocoons. Mulch used under the trees may prevent the apple maggot larvae from burrowing into the soil and may attract beneficial insects that will feast on them. Replace the mulch at the end of the growing season.

For specific information on growing apples and pesticide use in Western Washington, contact the Washington State University Extension Office in Skagit County at (360) 428-4270.

In addition to the valuable publications available, there is a great organization here in Skagit County eager to advise you. The Western Washington Fruit Research Foundation works in conjunction with WSU Northwest Washington Research and Extension Center. They are holding their Fall Field Day/Open House on October 8. There will be classes, displays and fruit tree experts available to answer

all of your questions. For the location and information about this great opportunity, check their website www.wwfrf.org.

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This column is written by Washington State University/Skagit County certified Master Gardeners. Questions may be submitted to WSU/Skagit County Extension, 306 S. First Street, Mount Vernon, WA 98273-3805.
