

Apple maggots are the larvae of the small fly *Rhagoletis pomonella*. The adult fly is only about $\frac{1}{4}$ inch long.

The maggot burrows around the apple flesh rendering the apple useless. The worst part of it is that the maggot damage is inside the apple and may not be found until harvest. The apple maggot differs from the codling moth by tunneling all through the flesh of the apple, where a codling moth larva usually makes one tunnel to the seed area in the middle of the apple.

Life Cycle

In June the adults emerge from the soil.

In 7-10 days, they mate, and the female lays a single egg at a time under the skin of a developing fruit, causing a small, brown, decayed area to develop.

Eggs hatch in 2-10 days, and larvae commence tunneling through the fruit.

The larva is cylindrical, tapering to a pointed, non-distinct head, and is white except for two dark mouth hooks.

It takes 20-30 days to develop, while secretly destroying the fruit inside. Once mature enough, the larva drops to the ground, burrows into the soil, forms a cocoon, and develops into an adult over winter. It emerges again the following June to start the cycle over.

Management

Pick up any fallen apples to hopefully prevent the apple maggot from leaving the fruit to enter the ground. Keep checking for fallen fruit throughout the summer. Destroy infected apples by placing them in a tightly closed plastic bag for 7-10 days before discarding fruit. Check to make sure the apple maggot is dead. Smashing or shredding the apple also works.

Applying nematodes to soil around the tree can also reduce the number of adults that emerge in June.

Treat or remove, when possible, alternative hosts for apple maggot such as quince, crabapple, and native or ornamental hawthorn.

If you decide to use sprays, you should start monitoring for adults beginning in late May. You can use a fresh or fake apple covered with Tangle Trap (a sticky material that is used to trap adults) or a yellow sticky card. As soon as you start seeing adult flies on your apple maggot trap, you will need to begin spraying and continue till harvest—typically in early June. Repeat pesticide applications at 7–10-day intervals throughout the summer.

An alternative to spraying pesticides is to use a barrier. After thinning fruit in late April or May, you can bag the individual fruits in Maggot Barrier Bags. Or, spray with naturally occurring

kaolin clay to form a barrier that repels pests. The fruit tree will look white from applying it. Repeat application every 10- 14 days depending on rain, and avoid overhead watering.

Products and pesticides for management

Organic options:

Tangle Trap™ - sticky material that traps adult flies.

Maggot Barrier - Nylon bags to cover fruit.

Nematodes are microscopic worms that prey on the larvae in the soil. Timing and soil temperature is important, so be sure to read the label included with the nematodes. You may need to repeat applications to establish a reproducing population.

Spinosad extract is an organic pesticide made from the fermentation broth of a naturally occurring bacteria. It is an organic option. You would use this in conjunction with traps, beginning applications when you start finding adults. One brand is **Bonide's Captain Jack's Dead Bug**.

Chemical options:

While there are non-organic pesticides to use against apple maggots, all are highly toxic to bees, and none are recommended for homeowner use.

Conclusion

Managing apple maggot is an all-season task with more than one strategy. At best we can reduce the amount of apple maggot but never eliminate it. Some years will be better than others, but you can get good fruit with some focused tools and persistence. Treatments are similar as for Codling Moth.