

What's eating My Apples? (And pears and peaches and....)

Apples, peaches, and other tree fruit are very attractive to a number of pests. Feeding damage from insects and their larvae falls into two major categories: internal fruit feeding and external fruit feeding. Internal fruit feeding results when insects oviposit (lay their eggs) into fruit. The developing larvae feed on the flesh, rendering the fruit inedible. Many types of moth larvae or caterpillars also chew externally on fruit, leaving exposed flesh that is susceptible to rot and moisture loss.

Listed below are some of the pests that feed on Long Island tree fruit. Many other pests can scar fruit or cause fruit to be misshapen through feeding or oviposition: plum curculio (crescent shaped scars), tarnished plant bug (pinpoint indentations), and rosy apple aphid (small, misshapen fruit occurring in clusters) are just a few. There are also several important mite and leafminer pests, and other pests that feed on foliage.

Internal Feeders

Apple Maggot. Adult flies, found mid-June through August, are black with white crossbands on their abdomens. Wings are clear and have characteristic black bands. After mating, females oviposit just beneath the skin of the apple. The resulting larvae are cream colored with 2 black mouth hooks. The larvae tunnel throughout the fruit, leaving behind threadlike trails that enlarge from bacterial decay. On the surface, the fruit may appear dimpled or distorted, eventually becoming soft and rotten. Early varieties and varieties that are soft are more affected by apple maggot. Although variable from year to year, apple maggot is a persistent pest of Long Island apples. Commercial apple growers consider it the worst fruit-feeding pest.

For the homeowner, apple maggot can be monitored and controlled through the use of red ball spheres. These spheres mimic an apple in appearance, but have a sticky coating that traps the flies. Traps can be used with or without pheromone lures (pheromones are chemicals specific to one species of insect that serve as an attractant between sexes). Research has shown that through the use of red ball spheres, small plantings can capture the majority of flies before they can lay their eggs within the fruit (called "trapping out"). One baited trap should be used for every 100 150 apples, with a maximum of 3-4 traps per tree. Set the traps out in mid June in Southeastern New York. The traps should be checked and cleaned of insects twice weekly. Traps may be ordered from a number of pest management supply businesses.

Codling Moth. Affects apples, crabapples, and pears. Adult female moths oviposit on fruit or leaves. After hatching, the larvae, pinkish white in color with a brown-black head, seek out fruit. The larvae enter the fruit, feed just beneath the apple skin, then tunnel directly to the center of the fruit. It is common to find the larvae in the center, where they feed on seeds. Injury from codling moth dimples the fruit, and brownish frass (insect excrement) will be noticeable on the surface of the fruit. Codling moth injury renders the fruit inedible, and is most common after apple maggot.

Oriental Fruit Moth (OFM). Affects apples, pears, peaches, and other stone fruit. The OFM larvae look similar to the codling moth larvae. On peach, the larvae feed on tender young growth, causing shoot tips to suddenly wilt or die back (called "flagging"). If infested early, a peach may drop; if it remains on the tree, frass and gum exudates will be evident. On ripe peaches, the larvae will tunnel throughout the fruit and may excavate a cavity near the center. Damage on apples is similar. It is difficult to distinguish between codling moth and OFM damage in apples. Generally, OFM tunnel randomly and do not eat seeds. Codling moth larvae tunnel directly to

the center, where they feed on seeds. Damage from codling moth and oriental fruit moth is usually not widespread enough to warrant control measures, although several growers find it each season. Unfortunately, infested fruit is usually not edible. OFM tends to be worse on stone fruit.

External Feeders

Green Fruitworm. This term refers to a class of larvae that are greenish and damage both apples and pears. One species, green with white stripes, appears to be more common than others. Young larvae feed on new leaves and flower buds. Older larvae feed on flowers during bloom and on young fruit. The damaged fruit usually drops. It can, however, remain on the tree, and will develop either a deep, corky scar or deep indentations, apparent at harvest. Most growers occasionally see a few green fruitworms, however, treatment is usually not necessary.

Oblique Banded Leafroller (*OBLR*). Damage is very similar to that of green fruitworm, although it may occur throughout the season. Deep corky scars or indentations at harvest could also be from OBLR. The larvae are slightly smaller than fruitworm larvae, yellowish-green, and have a brown head. Larvae may be found throughout the season in rolled leaves, where they feed on surrounding leaf tissue. Generally this is a minor pest of apples and does not require treatment.

Red Banded Leafroller. The larvae are uniformly yellow-green in color (no brown head). Larvae may spin a web and feed on leaf undersides, but prefer fruit as the season progresses. Young apples are often webbed together, and feeding damage is deep. It will appear as if something chewed chunks out of the fruit. These areas may cork over, resulting in deformed fruit. On larger fruit, feeding damage is shallow and irregular, making the fruit susceptible to moisture loss and rot. Generally, this pest does not occur frequently in Long Island apple orchards.

General Control Guidelines. In many cases, insect damage to tree fruit does not destroy the fruit. If the damage only scars the skin of the fruit, it is still edible. For homeowners who are trying to minimize spraying, it is likely that some damage will occur. A grower in this situation must be willing to tolerate some fruit injury. Unfortunately, it is difficult to predict type and amount of damage. If woods are nearby, the potential for damage is slightly higher. The insect may prefer to overwinter in wooded areas and these areas can also provide alternate food sources for many insects.

Damage from fruit feeders will vary from year to year and from orchard to orchard. Scouting trees on a weekly basis for signs of damage will allow precise evaluation of the amount and severity of damage. Check 5-10 randomly selected apples or peaches on each tree; look at fruit in the canopy interior and on the exterior; look for pests on all sides of the tree. With regular and thorough evaluation, you are likely to spot any damage that occurs.

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Slight revision 9/01.

AR:11/2025