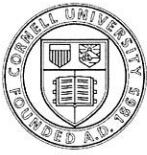


# HOME GROUNDS FACT SHEET



Cornell University  
Cooperative Extension  
Nassau County



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## Apple Maggot



Apple maggot, or "railroad worm," is the number one insect pest of apples in home fruit planting.

All apple varieties may be attacked, but summer

varieties and early fall varieties are especially subject to injury.

Late varieties such as Fameuse, Jonathan, Northern Spy and Red Delicious are the most susceptible to attack.

In order to successfully control the apple maggot, a knowledge of the insect's life cycle is important so that control measures can be directed against the weakest link in the life cycle. The adult is a black-bodied fly, slightly smaller than the house fly. The female is larger than the male and has four bands across its abdomen, while the male has only three. The wings of the fly are crossed by four dark bands.

The adult flies begin to emerge from their overwintering puparia (cocoon-like structures) in the ground during the latter half of June and continue to emerge through the middle of August. The flies require approximately ten days after emergence to feed, mate and lay eggs. During this time they may be seen resting on the leaves of fruit, lapping up drops of moisture with their fleshy mouthparts.

The female has a sharp ovipositor with which she punctures the skin of the apple and inserts her minute, whitish egg into the pulp. A large number of eggs may be deposited in a single fruit, and fruits of late varieties become dimpled and pitted as a result. The eggs hatch in four to six days and young maggots begin at once to tunnel through the fruit, causing brown trails.

Badly infested fruits often fall to the ground early. The numerous trails in the fruit reduce the inside of the apple to a brownish, pulpy mass and render it unfit for consumption. The full grown maggot is about 3/8 inch long and is whitish or yellowish-white in color. The maggot emerges from the fallen fruit and burrows into the soil to a depth of one to two inches. Here it changes to puparium, in which stage it overwinters. The following year, the cycle starts again.

### Integrated Pest Management (IPM)

#### Considerations

IPM is a common sense approach to pest control and plant care. It employs a number of measures to prevent, control or reduce plant problems. These include using resistant plant varieties, proper plant selection and placement, good aftercare and biological and/or mechanical controls. As a last resort, after all other remedies have been explored, a pesticide\* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

\* A pesticide is a substance that kills, or attempts to kill, a particular pest, e.g. **insecticide**, **fungicide**, **herbicide**, etc.

#### Control

As the eggs are inserted directly into the pulp beneath the skin of the fruit, and since the maggots never leave the fruit until they are full grown, it is impossible to kill them with insecticides. It is also impossible to kill them with any spray applied to the soil, as the adult flies may be migrating to the fruit trees nearby. However, the adult flies can be readily destroyed by covering the fruit and leaves with an insecticide. Sanitation plays a major role in the control of apple maggot. Remove and destroy fallen fruit. This will discourage the insect from overwintering near the tree.

Mechanically, you can reduce the population by suspending several red 2 to 3 inch wide children's toy balls (used for playing catch) on the branches with heavy duty fishing line. An adhesive such as petroleum covering the "red apple" will act as a good trap for the adult flies. Adhesives must be replenished as necessary.

Chemical pesticides are available. If you choose to use chemical pesticides, contact your local Cooperative Extension office for specific recommendations.

To control the adult apple maggot flies successfully with any insecticide, the interval between sprays should not exceed seven to eight days from early July to mid-August. If the interval is longer, the insecticide residue on the fruit will not be strong enough to kill the new flies moving to the fruit. Proper timing of the spray applications and thorough coverage of fruit and foliage are as important as the insecticide used.

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## Apple Scab

Apple scab is one of the most common diseases of apples and crabapples. It is most often recognized by the olive green, velvety spots on the foliage, but in severe cases, the leaves may be dwarfed, cupped or curled and can drop prematurely. The young spot, or lesion, has definite margins and within 2 or 3 weeks after initial infection, these margins will be very evident. Fruits infested during the early part of the season may be severely deformed or may drop by early June.

The organism that causes scab overwinters in dead leaves on the ground. Primary infections occur during rainy seasons from the time green tissue appears in the spring through the end of June. Secondary infestations, on the other hand, arise from the fungus spores that are produced by the primary infection lesions on the leaves and fruit of the current season. These spores are spread by rains and cause new infections throughout the summer. Thus, good scab control early in the season makes prevention in late summer easier.

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a pesticide\* that is least toxic to people and natural predators, can be considered. Prior to using any pesticides, plants should always be monitored for the degree of infestation and a sensible control measure considered.

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In autumn or as leaves or fruit drop in summer, rake and dispose of all fallen or diseased leaves and fruit. Prune in early spring to thin the trees, which allows air to circulate and fruit and leaves to dry quickly after rains.

Chemical pesticides are available. If you choose to use chemical pesticides, contact your local Cooperative Extension office for specific recommendations.

"This publication contains pesticide recommendations. Changes in pesticide regulations occur constantly and human errors are still possible. Some materials mentioned may no longer be available, and some uses may no longer be legal. All pesticides distributed, sold or applied in New York State must be registered with the New York State Department of Environmental Conservation (DEC). Questions concerning the legality and/or registration status for pesticide use in New York State should be directed to the appropriate Cornell Cooperative Extension specialist or your regional DEC office (631) 444-0340. Read the label before applying any pesticide. Cornell Cooperative Extension and its employees assume no liability for the effectiveness or results of any chemicals for pesticide usage. No endorsement of products is made or implied."