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The Apple Maggot

A Potential New Apple Pest in Idaho

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The apple maggot, a member of the fruit fly family, is a serious pest in the eastern U.S., ranging from New York to Florida and extending west to North Dakota and eastern Texas. This pest's main hosts are apple and hawthorn. However, it is known to attack several other plants such as pear, sour cherry, plum, apricot and rose.

In 1979, the apple maggot was found near Portland, Oregon. Since then its known range has expanded to coastal Oregon from Newport, south to the California border and to the east side of the Willamette Valley. Additional infestations were reported at Phoenix (near Medford) and in the Cascade Mountains at Cascade Locks. The only infestation found in Washington State was at Stevenson, across the Columbia River from Cascade Locks.

During the 1981 season, the University of Idaho Department of Entomology maintained an intensive trapping campaign to determine if the apple maggot is present in Idaho. Traps were placed from Homedale to Sandpoint. No apple maggots have been found to date, but several other related fruit fly species were collected.

The descriptions and figures that follow will help in identifying the apple maggot and related flies that may be encountered in Idaho. Traps may also collect other insects, including a variety of flies. All specimens which resemble the apple maggot should be sent to your Extension county agent or the University of Idaho, Department of Entomology, for positive identification.



Apple maggot larva feeding on apple flesh.

Apple Maggot Life History

Apple maggot adults emerge in August. Egg laying begins 8 to 10 days after emergence and continues into late September. Egg laying produces punctures that may appear as pin pricks on the fruit surface or cause the fruit to become dimpled or distorted. In softer varieties of apples, the tissue around these wounds may darken and decay.

The young larvae tunnel throughout the apple, leaving small, irregular, brownish trails. As the maggot grows, the tunnel becomes more conspicuous and is further enlarged by bacterial decay. Eventually the apple becomes soft and rotten and drops prematurely.

When the maggot is fully grown, it crawls out of the fruit and pupates, usually in the top 2 inches of soil. Most adults emerge the next season, but some pupae spend 2 or more years in the soil before emerging. There is one generation per year.

Identifying the Apple Maggot And Related Fruit Flies

- The **Rose Maggot** can be recognized by the isolated dark spot on the front margin of the wing, near its middle (Fig. 1) and the virtual lack of dark markings on the moderately dark, yellowish-brown head and body. The known host plants of the rose maggot are wild roses.

- The **Walnut Husk Fly** can be identified by its wide, dark wing bands (Fig. 2) and rather pale,

Wings of the Apple Maggot and Related Species

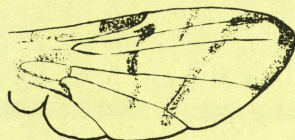


Fig. 1. Rose maggot.



Fig. 2. Walnut husk fly.

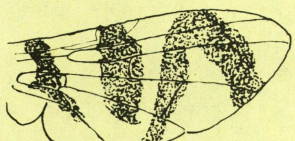


Fig. 3. Gooseberry maggot.

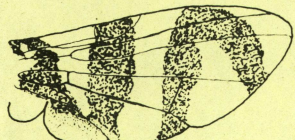


Fig. 4. Juniper berry maggot.

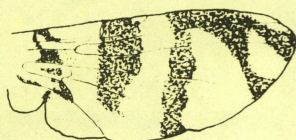


Fig. 5. Cherry fruit fly.

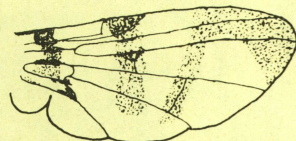


Fig. 6. Barberry maggot.

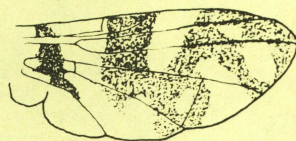


Fig. 7. Black cherry fruit fly.

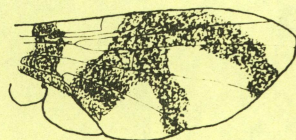


Fig. 8. Apple maggot.

brownish-yellow body plus a yellow spot on the back. It attacks the hulls of walnuts, including virtually all of the cultivated varieties and many wild species. Occasional infestations of peaches grown near walnuts have been reported.

- The **Gooseberry Maggot** can be distinguished by the uninterrupted clear band near the end of the wing and two broad, brown, basal bands that do not come together (Fig. 3). The grayish back with longitudinal black stripes and a pale yellow spot is also helpful in recognizing this species. This species is a pest of wild and cultivated gooseberries and currants.

- The **Juniper Berry Maggot** is similar to the gooseberry maggot, except that the two broad, brown, basal bands on the wing come together at the rear of the wing (Fig. 4). This species attacks juniper berries but is not a pest.

- The **Cherry Fruit Fly** is a pest of cherries and can be recognized by the form of the dark band at the tip of the wing which is split by a long triangular clear area (Fig. 5). In some individuals, the clear area divides the band, leaving a dark, apical spot. The back is grayish, often with longitudinal black stripes and a pale yellow spot. The cherry maggot attacks both sweet and sour cultivated cherries as well as the native bitter cherry. The maggot lives in the flesh of the fruit, causing it to decay.

- Although uncommon, the **Barberry Maggot** may be important because of its great similarity to the cherry fruit fly and the resulting possibility of confusing the two species. The barberry maggot differs from the cherry fruit fly by having an undivided band at the wing tip (Fig. 6). The only known host for this species is the barberry.

- The **Black Cherry Fruit Fly** is the second of the cherry fruit flies and can be recognized on the basis of the following characters. The middle of its wing has a very wide dark band with a clear spot in it (Fig. 7). The back is blackish except for one yellow spot. The black cherry maggot attacks both sweet and sour cultivated cherries, plus species of wild cherries, including bitter cherry which is common in Idaho. The damage is similar to that caused by the cherry fruit fly.

- The **Apple Maggot**, and the very similar snowberry maggot, can be recognized by the four dark bands that look like a poorly printed word "IF" with the letters joined at their bases (Fig. 8). The dark brown to blackish back with a grayish-yellow spot also help in identifying these flies. Separation of these two species requires expert examination of the male genitalia.

- The **Snowberry Maggot** is extremely similar to the apple maggot except with regard to male genitalia. However, it has been reared exclusively from the fruits of snowberry. Even when the host grows near apples, no damage to the crop has been reported.

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