Picture Wing Fruit Fly Pests of Home Orchards

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Hosts: Apple, hawthorn, plum, pear, crab apple, cherry, walnut, peach

There are several species of *Rhagoletis* in Oregon that are readily confused. The Apple Maggot (*Rhagoletis pomonella*) and Western Cherry Fruit Fly (*R. indifferens*) (Fig. 1 & 2) are by far the two species that affect homeowners the most largely due the commonality of their hosts (apple and cherry). The black cherry fruit fly (*R. fausta*) is an infrequent pest of commercial cherries and is primarily a pest of bird cherry which is largely grown as an ornamental. The final picture winged pest of the home orchard is the Walnut Husk fly (*R. completa)*. This pest attacks husk of the developing walnuts and often goes undetected until harvest. Although this pest rarely damages the nut it does make the removal of the husk very difficult. This species is also known to attack late season peaches however it is rarely a significant pest.

Figure 1. Adult Western Cherry Fruit Fly

Figure 2. Larval Western Cherry Fruit flies

Although it is not an orchard crop it is important to mention that there are 2 picture wing fruit flies that are pests of blueberries. The first which has no common name is native to the western North America and is known as *R. tabellaria*. The other pest is **not** known to be in Oregon and is commonly known as the blueberry maggot (*R. mendax*). The blueberry maggot poses a serious threat to Oregon's Blueberry industry. If you believe that you have this pest freeze adult specimens, collect infested fruit and contact your local extension office or the Oregon Department of Agriculture promptly. Early detection is vital!

The markings on the wings of this group of flies can be used to distinguish many of the pests that occur in Oregon (Fig. 3). The adults of all of these species lay eggs under the skin of the fruit and after hatching the larvae feed inside the developing fruit causing defects and /or spoilage. Because the larva feed inside the fruit adults must be the targeted to reduce losses.

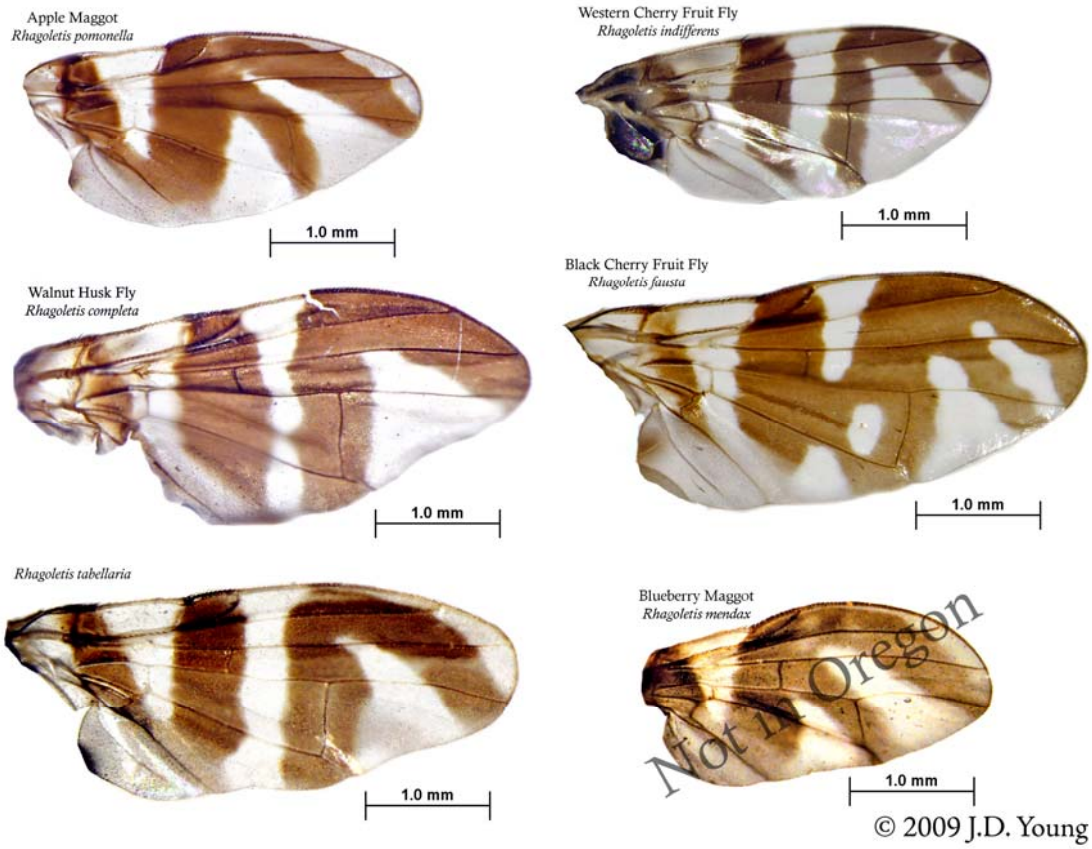

Figure 3. Wings of the picture wing fruit flies common to Oregon and the Blueberry Fruit fly which is not known to be in Oregon. Note: There are several non-pest species of flies with "picture wings" in Oregon that are not discussed in this publication. Also distinguishing the apple maggot and blueberry maggot can only be done reliably by an expert.

Life cycle *Primary host(s) in Bold*

Apple Maggot- Pupae overwinter in the soil and adults fly in mid to late July. Adult females lay 1 egg per fruit and can lay approximately 300 eggs over their life time. Larvae bore into the fruit and tunnel throughout, causing it to spoil. Larvae finish their development in September and October and drop out of the fruit to pupae in the soil. *Hosts:* **hawthorn, apple**, plum, cherry, pear.

Western Cherry Fruit fly- Pupae overwinter in the soil and can remain dormant in the soil for up to 3 years. Adults emerge in May and continue into August. Adults lay their eggs in developing cherries. The eggs hatch 7-10 days after being laid and the larvae feed on the fruit surrounding the pit of the cherry. *Hosts*: **commercial cherries**, a population of this species which occurs in the SW US attacks apples, this is not a reported host of any Oregon populations.

Black Cherry Fruit fly- This pest has a life cycle that is very similar to that of the Western Cherry Fruit Fly. The major difference being that the adults on average emerge 1 week earlier then the Western Cherry Fruit Fly. *Hosts*: **wild & ornamental cherries**, commercial cherries, pear, & plum.

Walnut Husk fly- Pupae overwinter in the soil and remain there until mid-July/August. Adults emerge from the soil and search for developing nuts to lay their eggs on. Eggs hatch 5-7 days after hatching and bore into the husk of the developing fruit. The larvae feed for 3-5 weeks before dropping to the soil to pupate and overwinter. *Hosts*: **walnut**, peaches (late maturing species only).

Management

Adult Apple Maggots and both species of Cherry Fruit Fly are highly attracted to the color red. Field tests have shown that red spheres 9-10 cm (3.5 to 4 inches) in diameter covered with Tanglefoot®, which is available at garden centers, are recommended for trapping these pests. Baiting the traps with commercially available ammonium carbonate baits "super chargers" can be purchase and hung with the traps to increase their attractiveness. Walnut Husk Fly populations can be monitored using yellow sticky cards baited with same ammonium carbonate baits. Walnut Husk fly traps are most effective when placed high in the foliage on the north side of the tree.

Currently there are a limited number of products registered for use by a homeowner on fruit bearing trees (~10 for apples, ~10 for cherries, & ~16 walnuts). Caution should always be used when applying pesticides to food crops. Be sure to follow the directions of the pesticide label and play close attention to when the product can be applied in relation to when it will be harvested. If you choose to apply an insecticide keep in mind that trees growing on property lines or overhanging sidewalks may be visited by other persons. Make sure to properly notify neighbors and/or adequately mark that the tree(s) being sprayed.

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