


Stone Fruit IPM for Beginners

Developed by the Great Lakes Fruit Workers and funded by a working group grant from the North Central Integrated Pest Management Center


Chapter 21

Cherry fruit fly and black cherry fruit fly

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Rhagoletis cingulata (Loew)

Rhagoletis fausta (Osten Sacken)

Hosts

Sweet and sour cherries are readily attacked by both species. The principal wild host of the cherry fruit fly is the black cherry, *Prunus serotina*. The black cherry fruit fly infests almost exclusively the smaller-fruited, native “bird cherry” or “fire cherry,” *P. pennsylvanica*.

Time of concern

Emergence begins in late May or early June when early sour cherry varieties begin turning red or when 950 degree-days above 4.4 degrees Celsius (40 degrees Fahrenheit) have accumulated after March 1. As a rule of thumb, black cherry fruit flies (Fig. 1) emerge at McIntosh apple petal fall and cherry fruit flies (Fig. 2) emerge seven days later.

Flies continue emerging for about one month, into early July. Peak emergence occurs in mid-June for black cherry fruit flies and late June for cherry fruit flies. Freshly emerged flies move actively about the foliage and feed on honeydew produced by aphids or other insects. After about one week, flies are sexually mature. Mating takes place on the fruit and egg laying begins.

Damage, symptoms and pest cycle

Both species attack cherries; the female fly pierces the fruit with her sharp ovipositor and inserts a single egg just below the skin, leaving a small scar on the surface (Fig. 3). Little damage results from the egg puncture itself, and the egg-laying scar can be inconspicuous. If the fruit is stung while still green, such as with late varieties, and before it has fully sized, a small dimple will form around the egg puncture (Fig. 2).

Infested fruit may initially appear sound and will not drop prematurely. Larval feeding in the fruit will separate the pit from the pulp and cause the pulp to turn brown (Fig. 4). Sometimes the skin shrivels over the injured area. The young larva feeds next to the pit and matures in two to three weeks. When the fruit is ripe or overripe, the full-grown larva bores through the skin (Fig. 5) and drops to the ground to pupate (Fig. 6).

Cherry fruit flies and black

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Fig. 1. Black cherry fruit fly adult.

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Fig. 2. Cherry fruit fly adult.

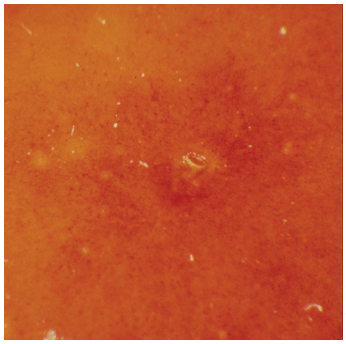

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Fig. 3. Oviposition scar.

cherry fruit flies have a similar seasonal biology: only one generation a year throughout their geographic ranges. Except for the adults, the eggs, larvae and puparia of the two species look alike.

Brown rot (*Monilinia* sp.) can start in wormy fruit (Fig. 5) and spread to other cherries. Late cherry varieties are usually more heavily infested than early varieties.

IPM steps for beginners


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Fig. 5. Ripe cherries showing cherry fruit fly exit holes.

The date of first emergence in an area can be determined by collecting infested cherries, caging them on the ground under several trees (preferably in the south quadrant) and observing fly emergence in the cages the following spring. A more convenient method for monitoring cherry fruit fly activity is using baited fluorescent-yellow sticky boards. These traps attract cherry fruit flies, black cherry fruit flies, apple maggots and many other flies. Cherry fruit flies and black cherry fruit flies can then be identified by their characteristic wing patterns (Figs. 7 and 8). Consult local recommendations for using these traps.

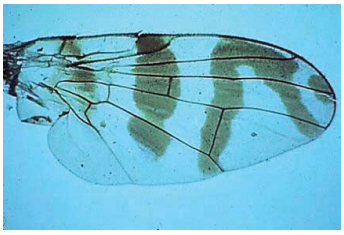
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Fig. 7. Wing of cherry fruit fly showing characteristic markings.

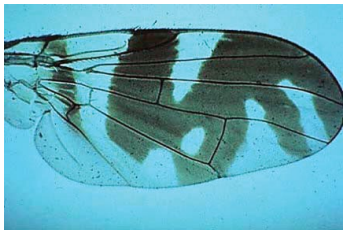
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Fig. 8. Wing of black cherry fruit fly showing characteristic markings.


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Fig. 4. Cherry fruit fly larva feeding in fruit.


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Fig. 6. Cherry fruit fly pupa.

Both species of cherry fruit flies build up in unsprayed, abandoned cherry trees or in wild *Prunus* tree hosts, and migrate from there to commercial orchards. Removing such sources of infestation will considerably reduce the cherry fruit fly threat in an area.

Cherries for commercial use must be free of maggots. To achieve such quality, apply insecticides to prevent female flies from laying eggs. The first spray should go on seven days after first fruit fly emergence, or when early varieties are beginning to show a tinge of color. The second is applied 10 days later, or when the Montmorency variety begins to color. Late varieties may require a third spray. Consult local cooperative Extension agents for advice on the most effective insecticides for cherry fruit fly and black cherry fruit fly control.