

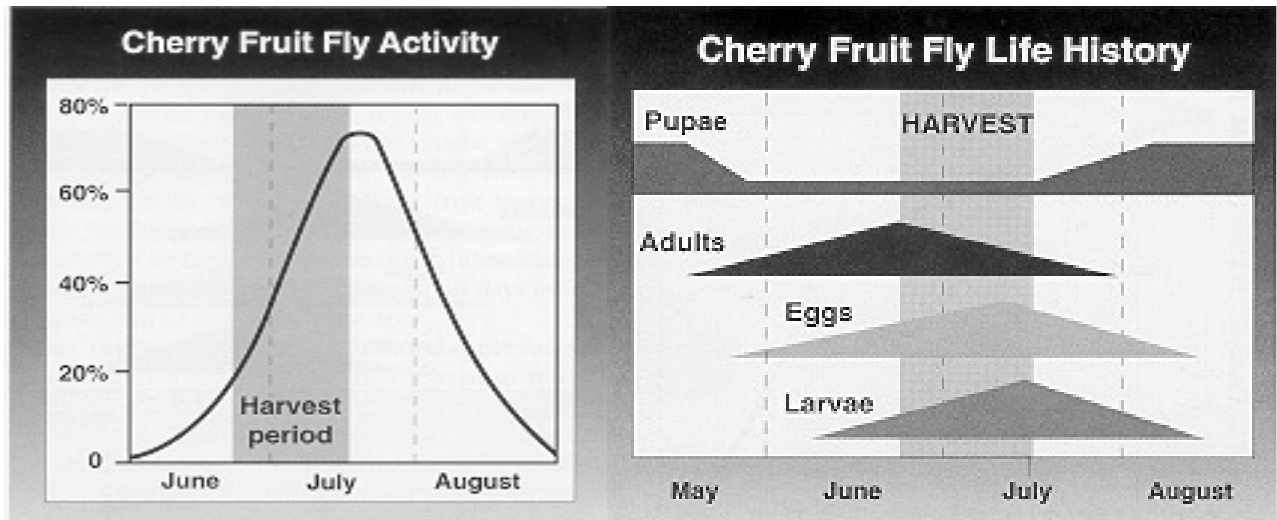
The leading pest of cherries is the Cherry Fruit Fly . . .but its not the fly that matters!

The cherry fruit fly, *Rhagoletis indifferens*, is the key insect pest of cherries in the Pacific Northwest. It is not the adult fly, but the immature larvae, better known as the maggot, hidden within the cherry that sends the cherry industry into convulsions. There is no tolerance among cherry growers, packers, consumers and international markets for cherries infested with maggots! State inspectors are constantly patrolling packinghouses and sampling cherry lots for cherry maggots. If a single maggot is detected by an inspector at the packinghouse, the packinghouse will shut down for days to dispose of all cherries that may be infested. Despite the serious pest status, cherry fruit fly is uncommon in commercial cherry orchards, but a pest that backyard cherry tree owners are most likely to encounter.



1A) Cherry fruit fly sitting on Montmorency cherry; **1B)** cherry maggot in ripe cherry; **1C)** mature cherry maggot in overripe cherry left on the tree after harvest.

The adult cherry fruit fly is about 1/5 inch long and lives for about 16 to 35 days. In the Yakima Valley, adult flies begin to emerge in mid-May and continue to emerge until the end of July. These flies feed on sticky deposits of honeydew, plant pollen and sometimes enjoy those little delicacies in life . . . like bird droppings! Adult flies mate shortly after they emerge and begin laying eggs about 5 to 10 days later. The adult females puncture the cherry surface and lay a single egg just under the skin of the cherry. The puncture scar on the cherry is a small dimple that may be difficult to detect. One female can lay between 50 to 200 eggs. Should a homeowner find one infested cherry on their tree, you can just imagine how many other cherries are infested. Hidden and protected within the cherry, the white, legless maggots safely go about their business of tunneling, feeding and functioning. They will be fully-grown in 10 to 21 days and measure less than half an inch in length. Mature maggots will bore their way out of the cherry, drop to the orchard floor and burrow into the ground where they pupate. These insects spend nearly 85% of their life (nearly 10 months) buried in the soil waiting for spring to arrive.



2A) Cherry fruit fly puparia are not typically encountered by scouts as they are buried in top soil under trees; **2B)** a diagram that indicates peak fruit fly activity AFTER harvest, these flies thrive on cherries left in orchard after harvest; **2C)** the complete life cycle of cherry fruit fly, each fly spends over 10 months as a pupa buried in the soil.

To meet the zero tolerance for maggot-infested fruit, commercial growers must rely on insecticides to protect their crop. While adult cherry fruit flies are highly susceptible to insecticides, they emerge over three months so several sprays are necessary each season. WSU recommends the following insecticides for cherry fruit fly management during the preharvest period: Malathion, Guthion or Azinphos-M, Diazinon and Sevin XLR. Since multiple sprays are necessary, growers must know the residual activity of the product they chose. The greater the residual activity, the longer the interval between sprays. The spray interval may be as short as 7 days for Malathion, or even shorter if rain is in the forecast. Diazinon has a long residual activity and the spray interval may last as long as three weeks. Note that Diazinon can mark light-colored fruit like Rainier cherries. Last year, WSU started recommending a new, very effective, insecticide called Spinosad for cherry fruit fly management. Spinosad must be re-sprayed on a weekly basis. Growers must also be aware of the preharvest interval (PHI) for the product they chose. The PHI for Diazinon is 21 days while the PHI for Sevin is one day. Organic growers may no longer use Pyrenone on their cherries, but they can use up any Pyrellin they have left in storage. A product called Pyganic is available to organic growers, but this is a new and untested insecticide.

Each season, the timing of the first cover spray is critical and must coincide with cherry fruit fly egg-laying activities. Growers may use yellow sticky cards to detect when the first fruit fly emerges and spray their first spray within a week of the trap catch. This approach of limited value since cherry fruit flies are not good fliers, infestations are spotty and uncommon in commercial orchards. Therefore, WSU researchers at the Tree Fruit Research & Extension Center in Wenatchee developed a degree-day model

to predict when to time the first insecticide spray for cherry fruit fly. The model is available through the Public Access Weather Service ([PAWS](#)). Each season, the model calculates heat accumulation after March 1 and when the count reaches 1060 degree days it is time to spray. This year, growers in the Yakima Valley will begin spraying as early as the last week in May or first week in June depending on local temperatures.



3A) the yellow sticky trap depicted on the left is effective for capturing many key fruit fly species in tree fruits, the round red sticky trap is used primarily for apple maggot flies but smaller versions have been looked at for cherry fruit flies & blueberry maggot flies; **3B)** a western cherry fruit fly caught in sticky adhesive, note the wing pattern; **3C)** wing banding patterns of other important fruit flies.

Cherry fruit fly management should never end at cherry harvest. Inevitably, there will be cherries left in the orchard after harvest and these cherries can harbor next year's cherry fruit fly problem. The absolute worst cherry fruit fly infestations that I have encountered were in Michigan after the price for tart cherries dropped so low, it was not profitable to harvest the cherries. Dimethoate is the most widely used product after post harvest for cherry fruit fly. Dimethoate is a systemic insecticide that penetrates the cherry fruit and kills the maggot inside.

Regrettably, the weakest link to cherry fruit fly management is the backyard cherry tree. Poorly managed, or abandoned backyard, trees are frequently the source of cherry fruit flies that invade and infest commercial cherry operations. Homeowners who are opposed to applying pesticides, unable or unwilling to protect their tree from cherry fruit fly should not plant or grow cherry trees. Local ordinances specify that homeowners are legally responsible for controlling destructive pests in fruit trees on their property, the enforcement of these ordinances by [County Horticultural Pest & Disease Boards](#). Most homeowners are simply unaware of these ordinances, clueless about the impact they can have on the cherry industry, and lucky enough not to knowingly eaten or find a maggot-infested cherry from their backyard. Commercial cherry growers are encouraged to work with their residential neighbors to manage cherry fruit fly populations in backyard trees, but if these polite and friendly efforts fail growers should file a complaint with their local Pest Board. For Yakima County growers, click [here](#) to find out more about your County Pest Board and to find complaint forms.

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Photo courtesies: 1A- Mike Klaus, WA State Dept. Agric., Yakima, WA; 1B, 2B, 2C, 3A, 3B - *Orchard Pest Management: A Resource Book for the Pacific Northwest*, Edited by E. H. Beers et al., published by the Good Fruit Grower, Yakima, WA, 1993; 3C- *Common Tree Fruit Pests*, by A. H. Howitt, published by MI State University Extension, E. Lansing, MI, 1993.

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