



Controlling Olive Fruit Fly at Home

University of California Cooperative Extension
133 Aviation Blvd, Santa Rosa, CA 95403
707-565-2621 • <http://cesonoma.ucdavis.edu>

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The olive fruit fly is a serious pest of olives in California. It was recently introduced from the Mediterranean where it has been a problem for thousands of years. The adult olive fruit fly is rarely seen. It lays its eggs just under the skin of the olive fruit. The larvae feed on the olive flesh, leaving brown tracks and tunnels. The damaged fruit is susceptible to rot, can drop prematurely, and is useless as a table fruit. Usable olive oil can be made if the damage level is below about 10%, but the risk of off flavors and unacceptably high acidity rises as the damage level increases.

The olive fruit fly is not difficult to control, but without such efforts, 100% of the fruit may be damaged. Most of the visible damage occurs in the autumn from September to October; prior to that infested fruit appears only to have small spots or stings. When the fruit is cut open, however, brown lines (tunnels) and maggots are visible. Olive fruit fly reproduces only in olives. In addition to producing fruit that is unusable for the many



Photo by Jack Kelly Clark

hobbyist olive processors, untreated residential olive trees can provide a virtually endless supply of olive flies. The flies are very mobile and can easily move from landscape trees to infest commercial groves.

Home olive growers can do many things to help control this pest. Olive tree owners can make a good start on their olive fly control program by cleaning up all old and fallen fruit. The flies can pupate in olives that are left on the tree or on the ground, ready to emerge as adults in the spring. Dispose of the fruit by sealing it in trash bags and placing it in the garbage, or by burying it 12" deep. Do not put infested fruit in your compost pile.

If your olive trees are grown as ornamentals only, consider the following suggestions:

Plant fruitless olive trees Varieties such as 'Swan Hill,' 'Majestic Beauty,' 'Wilsoni' and the dwarf 'Little Ollie' have little or no fruit. This is an excellent alternative if the desire is to have the landscape appeal of an olive tree, without the fruit. It also reduces the problem of stains from fallen ripe olives.

Spray to remove fruit Olive trees can be sprayed during bloom with plant growth regulators to prevent fruit set. The product Florel is available to homeowners. The timing of application is critical, and during extended bloom periods two applications may be necessary. Follow label directions carefully.

If you intend to use your olives for oil or table fruit, olive fruit fly damage can be reduced by using one or more of the following treatments:

Spray with GF-120 Naturalyte This is an organic insecticide (active ingredient: spinosad) that is formulated as a bait. It is mixed 1 part of material to between 1.5 and 4 parts water and applied at a rate of one ounce per tree. It is applied to a small area in the shady part of every other tree weekly or every two weeks. The adult flies are attracted to the bait, feed on it, and die. GF-120 is now available to non-commercial growers and no longer requires a permit. See the product label for application instructions and safety information. Commercial growers still need to obtain an Operator ID # through the Agricultural Commissioner's office and report their use.

Kaolin clay (Surround WP) Another organic treatment is kaolin clay (brand name Surround). It is mixed with water at a rate of 1/4 lb to 1/2 lb Surround to 1 gal water and sprayed to achieve thorough coverage. It dries to a white powder, something that should be taken into consideration if trees are also decorative. This product acts as a repellent rather than as an insecticide, and should be applied three times during the season. Start application in early June, or just before pit hardening, and repeat every 5-6 weeks. See product label for complete directions.

Mass trapping In recent field trials in Sonoma County, mass trapping reduced damage levels to an average of around 30%, compared to almost 90% in untreated controls. There are several types of traps that can be used to lower the numbers of adult olive flies and reduce fruit damage. They are



the McPhail-type liquid trap, yellow sticky panel trap, OLIFE trap, and the Attract & Kill device. Hang one trap per tree in a shady location. The McPhail trap has a reservoir of water containing torula yeast as a food attractant, and a pheromone lure can be added. The torula yeast solution should be changed monthly. The yellow panel is a piece of yellow cardboard covered in a sticky material. It uses both a pheromone and a food attractant lure. Check the manufacturer's recommendations for changing yellow traps and lures. The OLIFE trap is homemade; it uses a one-and-a-half to two-liter, non-food plastic bottle in which four 5 mm holes are drilled or melted at the shoulder. It is half filled with water and uses torula yeast as the food attractant. The yeast solution should be changed periodically (monthly is adequate). Some sources for yeast tablets, traps and pheromone lures are listed below. Mass trapping efforts will be enhanced by increasing the trapping area. If your neighbors have olive trees, encourage them to hang traps as well. The Attract & Kill (Magnet OL) device is deployed like a trap but does not retain the dead flies. The Attract & Kill is made from cardboard that has been impregnated with an insecticide and has pheromone and/or food attractant lures. The olive flies land on the cardboard and are killed by the insecticide. The Attract & Kill devices last for an entire season. They will be available from Suterra.



From left to right: McPhail-type with yeast/water liquid bait, yellow sticky panel with pheromone and ammonium bait, homemade OLIFE bottle trap with yeast/water bait and Attract & Kill device

Harvest early By harvesting your olives early, when they are still hard and green in September and October, you will have less fruit fly damage. It is particularly critical that olives with fly damage be processed promptly; the quality of all olives suffers with delay between harvest and processing, but fly-damaged olives are particularly fragile.

**For more information and to view our olive oil production newsletter *First Press*, visit our web site at <http://cesonoma.ucdavis.edu>
Also check out the UC Pest Notes on Olive Fruit Fly at <http://www.ipm.ucdavis.edu/PMG/PESTNOTES/pn74112.html>**

Sources for Olive Fly Control Materials

- Better World Manufacturing Inc.
(599) 291-4276
email: bettertrap@aol.com
McPhail traps; torula yeast tablets (by the lb.)
- Trécé Inc.
(866) 785-1313
www.trece.com
yellow sticky traps
- Gardens Alive!
(513) 354-1483
www.gardensalive.com
Surround At Home in 5, 10 & 25 lb packages
- Great Lakes IPM
(989) 268-5693
www.greatlakesipm.com
McPhail traps; torula yeast tablets (individually); yellow sticky traps
- Harmony Farm Supply (707) 823-9125
GF-120; Surround WP; yellow sticky traps
- ISCA Technologies Inc.
(951) 686-5008
www.iscotech.com
McPhail traps, yellow sticky traps, torula yeast tabs (by the lb.)
- Scentry Biologicals
(406) 248-5856
www.scentry.com
Pheromone/bait lures
- Suterra
(541)388-3688
www.suterra.com
yellow sticky traps (sold in cases of 100), Magnet OL
- Purity Products (707) 546-2585
GF-120; Surround WP

WARNING ON THE USE OF CHEMICALS

Pesticides are poisonous. Always read and carefully follow all precautions and safety recommendations given on the container label. Store all chemicals in their original labeled containers in a locked cabinet or shed, away from foods or feeds, and out of the reach of children, unauthorized persons, pets, and livestock. Confine pesticides to the property being treated. Avoid drift onto neighboring properties or gardens containing fruits and/or vegetables ready to be picked. Dispose of empty containers carefully. Follow label instructions for disposal. Never reuse the containers. Make sure empty containers are not accessible to children or animals. Never dispose of containers where they may contaminate water supplies or natural waterways. Do not pour down sink or toilet. Consult your county agricultural commissioner for correct ways of disposing of excess pesticides. **Never burn pesticide containers.** PHYTOTOXICITY: Certain chemicals may cause plant injury if used at the wrong stage of plant development or when temperatures are too high. Injury may also result from excessive amounts or the wrong formulation or from mixing incompatible materials. Inert ingredients, such as wetters, spreaders, emulsifiers, diluents, and solvents, can cause plant injury. Since formulations are often changed by manufacturers, it is possible that plant injury may occur, even though no injury was noted in previous seasons.



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