



# Mediterranean Fruit Fly

The Mediterranean fruit fly (Medfly) is one of the most destructive agricultural pests in the world. Because it's attracted to 260 host fruits, nuts and vegetables, which includes avocados, figs, guavas, grapefruit, oranges, peppers, tangerines, tomatoes and others, it is considered enemy No. 1 for the agriculture and citrus industries. As its name suggests, the Medfly is not native to the continental U.S. Infestations in California and Florida in recent years are believed to have been caused by travelers carrying in infested produce and plant material.

The Medfly is smaller than a housefly. The top of its back is mottled with yellowish-white and black areas. The abdomen has two distinct cross bands. The front edge of the wing has many small dark/clear areas. Females puncture host fruits, nuts and vegetables and lay eggs inside. Maggots hatch from the eggs and feed and grow inside these host fruits, nuts and vegetables. A Medfly life cycle lasts between 20 and 30 days in the summer, but doubles when temperatures are cooler in the winter. Female Medflies can lay between 300 and 800 eggs in their lifetime.

Medfly is eradicated using a combination of different methods, which include ground and aerial treatments of the malathion bait spray and sterile fly releases. The most effective tool against Medfly, particularly in large infestations the size of the ones in Florida in 1997 and 1998, is the malathion bait spray. The mixture is made up of 2.4 ounces of malathion diluted with 9.6 ounces of corn syrup spread over a one-acre-size area. The Medfly dies after it eats the bait spray. The bait spray can be applied to host plants from the ground or from the air. Aerial applications of the bait spray were the chief eradication tool in the Medfly infestations in west central Florida in 1997, and in Bradenton, Sebring and Umatilla in 1998 because of the high number of flies and the large size of the treatment areas.

Sterile Medflies are a good preventative measure. Sterile Medflies are radiated in laboratories outside the continental U.S. and imported. The flies are not radioactive and pose no health threat to people or the environment. One hundred sterile flies are released for every Medfly to ensure that wild females mate with sterile males, preventing the wild females from getting pregnant. Between 500,000 and 1 million sterile flies are released per square mile in primary treatment zones. About 250,000 flies are released per square mile in buffer zones.

Previous Medfly eradication programs in Hawaii and California have shown that sterile fly release is only effective in eradicating new Medfly infestations when it follows applications of the malathion bait spray to reduce the Medfly population.



Malathion, as used in the Medfly program, is safe because of the small quantities used. Malathion is one of the safest organophosphate insecticides and is approved for use in food processing and preparation areas, grain silos, homes and offices. Malathion is used in mosquito control programs in 34 Florida counties.

After extensive review of scientific and regulatory literature, California could not find any documented evidence showing that aerial spraying of the malathion bait spray caused any significant health risks to residents, including asthmatics, children, the elderly, pregnant women, and others. In tests of people who reported skin reactions, one person showed a reaction to the corn syrup bait and none showed reactions to the malathion.

Creatures found to be most at risk are other insects such as bees that feed on the corn syrup bait and certain kinds of fish. Nighttime aerial applications used by the Florida Med Fly eradication program helped protect bees because bees are less active at night. Preventing airplanes and helicopters from spraying water bodies by creating buffer zones, as practiced by the Florida Medfly eradication program, help shield aquatic life.

Trees don't have to be destroyed to eradicate Medfly. However, quarantine areas are established during a Medfly infestation to restrict the movement of fruit to prevent further spread of the pest. Quarantine restrictions can't be lifted until the area goes through three Medfly life cycles, about three months, without a fly found. Because Medflies usually emerge during the warm summer months, quarantine restrictions often stretch into Florida's citrus season, which begins in September or October.

Growers in the quarantine areas must bear the cost of treating their fruit before or after they harvest it. Ground treating the fruit costs about \$5 an acre.

If countries, to which Florida exports citrus, ban Florida citrus because of Medfly, growers may not have a market for an entire crop, meaning they won't get paid for the season.

For more information please visit:

<http://www.freshfromflorida.com/pi/pest-alerts/ceratitiscapitata.html>



# Mediterranean Fruit Fly

Group Members' Names \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## **Mediterranean Fruit Fly**

State and federal agriculture officials have found more than 100 Mediterranean fruit flies in a 30-square-mile area in the heart of a major citrus producing region. The quarantine zone is established August 15.

How long will the quarantine will last and how will it affect the movement of their fruit?

Assume the Medfly isn't eradicated and Japan bans the importation of Florida grapefruit. How will it affect Florida grapefruit growers?

Everyone in your community is not a grower. How will a ban affect the whole community?