

### **11. Is additional information being reviewed for malathion?**

A substantial amount of information exists on malathion. However, additional studies have been required by the US Environmental Protection Agency for malathion to fill knowledge gaps as part of the agency's ongoing reregistration process for certain pesticides. Results from these studies are reviewed and will help determine how products containing malathion may be used in the future.

### **12. Where can I get more information on malathion?**

If you have additional questions about malathion or the health effects from spraying, contact the New York State Department of Health's toll-free Environmental Health Information Line at 1-800-458-1158, extension 27530.



State of New York  
Department of Health



## **Information Sheet**

# **Malathion and Mosquito Con-**

### **1. What is malathion?**

Malathion is a man-made organophosphate insecticide that is commonly used to control mosquitoes and a variety of insects that attack fruits, vegetables, landscaping plants, and shrubs. It can also be found in other pesticide products used indoors and on pets to control ticks and insects, such as fleas and ants. Malathion is the active ingredient in mosquito-control products including Fyfanon and Atrapa. These products contain over 95% malathion and are often applied undiluted. However, they may be diluted with a petroleum solvent similar to kerosene before application, in which case petroleum solvent will make up most of the pesticide solution.

Because pesticide products are inherently toxic, no pesticide exposure is risk free. The likelihood of experiencing adverse health effects from exposure to any pesticide, including malathion, depends primarily on the amount of pesticide that a person contacts and the amount of time the person is in contact with that pesticide. In addition, a person's age, sex, genetic makeup, life style and/or general health characteristics can affect his or her likelihood of experiencing adverse health effects as a result of exposure to pesticides.

### **2. Is the spraying of malathion harmful to my health or my family's health?**

Short-term exposures to high levels of malathion can affect the nervous system causing a variety of symptoms, including headaches, nausea, dizziness, weakness, cramps, diarrhea, excessive sweating, blurred vision and increased heart rate. Repeated skin contact with malathion has been associated with skin rash (allergic reaction) in some individuals exposed to malathion in corn syrup bait. Short-term exposure to high levels of petroleum solvents can cause irritation of the eye, skin, nose, throat or lung. Vomiting or central nervous system depression may occur if very high levels of petroleum solvents are ingested. There are no studies examining whether the use of malathion to control mosquitoes has caused any long-term health effects in humans.

Malathion is applied at very low concentrations to control mosquitoes. It is unlikely that adverse health effects will occur as a result of this use for most people, but some individuals may experience health effects. For these reasons, individuals should consider taking steps to minimize their exposure to malathion if it is applied to control mosquitoes (see question #10).

### **3. Is malathion an "endocrine disruptor"?**

"Endocrine disruptors" are chemicals that interfere with endocrine system function. The endocrine system consists of glands that produce hormones that act together to guide development, growth, reproduction and behavior, and to maintain normal organ function. Our knowledge of the relationship between exposure and endocrine system effects is still developing. Some chemicals that act like the hormone estrogen (for example, DES) have been reported to cause long-term effects in mice born to mothers who ingested low levels during pregnancy. This area of research is the subject of intense scientific inquiry.

Effects on some endocrine glands and changes in some hormone levels were reported in laboratory animals given repeated oral doses of malathion. The amount of malathion given to animals in these studies, however, exceeds the amount humans are likely to contact from the spraying of malathion.

#### ***4. Are some people more likely than others to experience symptoms after they have been in contact with malathion spray?***

Most people would not be expected to experience any symptoms when malathion is sprayed for mosquito control. The U. S. Environmental Protection Agency concluded that the use of malathion to control mosquitoes was unlikely to be linked to short- or long-term effects in either children or adults. However, there could be some individuals who may be particularly sensitive to malathion or petroleum solvents, and could possibly experience short-term effects such as eye, skin, nose or throat irritation; nausea; breathing problems; or skin rashes. Children, in particular, may be at greater risk of experiencing adverse effects from the application of malathion since they may have the potential for greater exposure than adults.

#### ***5. If I'm pregnant, can the spraying affect this pregnancy or harm my baby?***

As with chemical exposures in general, pregnant women should take care to avoid exposures when practical, as the fetus may be vulnerable. Studies conducted in California following a spraying program with corn syrup bait containing malathion to control Mediterranean fruit flies showed no connection between malathion spraying and extra risk of miscarriage or birth defects. Although adverse developmental effects occurred in offspring of laboratory animals when they were given high amounts of malathion during pregnancy, these amounts far exceeded the amounts that individuals are likely to contact from the spraying of malathion.

#### ***6. Should I be concerned about cancer because of the spraying program?***

Experimental studies reported increased numbers of liver tumors and a very small increase in the number of tumors in the nose or mouth in laboratory animals fed diets containing very high levels of malathion for their lifetimes. The amount of malathion ingested by animals in these studies, however, far exceeds the amount humans might be exposed to as a result of the use of malathion to control mosquitoes. Therefore, although uncertainties exist, malathion is unlikely to cause cancer in humans as a result of its use to control mosquitoes.

#### ***7. Should I be concerned about coming into contact with pesticides on surfaces after spraying (e.g. outdoor furniture, soil, grass, bushes?)***

Some pesticide residues may be present on outdoor surfaces after spraying. Limited studies on other chemicals suggest the amount of pesticide transferred to skin

- a) decreases with more time after spraying (and very little transfers 24 hours after spraying);
- b) is less on dry skin compared to wet skin; and
- c) is less from porous surfaces compared to non-porous ones.

Pesticides are degraded from surfaces more rapidly when exposed to sunlight and water. Although not necessary under most circumstances, if spraying has just occurred and surface contact is high (e.g. playing field sports), then exposure can be minimized by wearing long pants and sleeves and washing exposed skin. Normally, most people would not be expected to experience any symptoms from contact with outdoor surfaces after spraying. However, if you want to take extra steps with small babies, the infant could be placed on a blanket instead of grass if spraying has just occurred. In addition, some small toys, such as those that babies may place in their mouths, could be taken inside before spraying.

#### ***8. Can pets go outside during the spraying?***

If possible, keep your pet inside during the spraying and for about 30 minutes afterwards to help minimize exposure. The amount of pesticide that a pet is likely to track into the house will depend on many of the same factors that were discussed in the previous question.

#### ***9. Should I be concerned about my private swimming pool?***

Malathion breaks down fairly quickly in water and in sunlight. No special precautions or waiting periods are needed for swimming pools. However, if you have a pool cover, you may wish to use it before spraying.

#### ***10. What can I do to reduce exposure to malathion?***

As with any pesticide, steps can be taken to help reduce possible exposures to malathion before, during or after spraying.

##### ***Steps you should take:***

- Children and pregnant women should take care to avoid exposure when practical.
- If possible, remain inside or avoid the area whenever spraying takes place and for about thirty minutes after spraying. That time period will greatly reduce the likelihood of your breathing pesticide in air.
- Close windows and doors and turn off window air-conditioning units or close their vents to circulate indoor air before spraying begins. Windows and air-conditioner vents can be reopened about 30 minutes after spraying.
- If you come in direct contact with malathion spray, protect your eyes. If you get malathion spray in your eyes, immediately rinse them with water. Wash exposed skin. Wash clothes that come in direct contact with spray separately from other laundry.
- Consult your health care provider if you think you are experiencing health effects from spraying.

##### ***Steps you may want to take:***

- If spraying just occurred, minimize your contact with surfaces and wash skin that has come in contact with surfaces.
- Pick homegrown fruits and vegetables you expect to eat soon before spraying takes place. Rinse homegrown fruits and vegetables (in fact, all produce) thoroughly with water before cooking or eating.
- Cover outdoor tables and play equipment before spraying or wash them off with detergent and water after they have been sprayed.
- Bring laundry and small toys inside before spraying begins (wash with detergent and water if exposed to malathion during spraying).
- Bring pet food and water dishes inside, and cover ornamental fishponds to avoid direct exposure.