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Fact Sheet on the use of Malathion in Mosquito Control Programs

April 2003

Use of malathion in large scale mosquito control programs (adulticide) for residential areas

Malathion is a broad-spectrum organophosphate insecticide that has been registered for use in Canada since 1953. Malathion is registered for the control of adult mosquitos. It is the preferred choice for ultra-low volume application to control adult mosquitos, which is commonly referred to as adulticiding. The majority of malathion use in Canada is for controlling insects in agriculture.

Are there health concerns related to using malathion for adult mosquito control?

Among the available mosquito control options, malathion has the most current and comprehensive safety information available. The adulticiding use of malathion has recently been reviewed by Health Canada's Pest Management Regulatory Agency (PMRA) under its re-evaluation program. Canadian regulators apply high safety standards and rigorous risk assessment approaches that include special consideration of risk to sensitive subpopulations such as infants and children. The PMRA's conclusions indicate that the continued use of malathion for adult mosquito control in residential areas, using ground or aerial ultra-low volume application, will not pose a health concern.

During ultra-low volume application, malathion is applied at a rate of 60.8 grams/hectare for ULV ground, or 260 grams/hectare for ULV aerial applicaiton. Even for someone who is outdoors during the spray application, these application rates would result in estimated exposures that are far below the exposures that produce adverse effects in laboratory animals.

The decision to spray a specific area for control of adult mosquitos is made at the local or provincial level. During mosquito control programs, local authorities inform the public when malathion will be applied so that individuals may take measures to minimize their exposure. Malathion is typically applied at night or in the early morning, when most people are indoors, further reducing potential exposure.

Given the recent re-evaluation of malathion, and the measures to minimize exposure that are normally taken, the PMRA finds ultra-low volume application of malathion to be a safe practice for the control of adult mosquitoes that pose a nuisance or public health hazard.

How can I minimize my exposure to malathion?

The PMRA recommends the following actions to reduce exposure to malathion during mosquito control programs:

- Whenever possible, remain indoors during and immediately after spraying.
- Close all windows and doors. Turn off air conditioning units and close vents to circulate indoor air before spraying begins.
- Bring laundry, toys and pets indoors before spraying begins.

- Cover swimming pool surfaces when it is feasible.
- Cover outdoor furniture and play equipment or rinse them off with water after spraying is finished.
- Wash homegrown fruit and vegetables with water before cooking or eating them.
- Cover ornamental fish ponds to avoid direct exposure.
- If you come in direct contact with concentrated 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.

How do I know if I am experiencing health effects due to malathion exposure?

Based on the recent re-evaluation of malathion, it is not expected that people will experience any symptoms when malathion is sprayed for adult mosquito control.

If the precautions to minimize exposure mentioned above are taken, it is even less likely that you would be overexposed to malathion. However, if for some unforeseen reason you have been overexposed to malathion, these are the symptoms to look for:

- nausea, dizziness, confusion, headaches, weakness, diarrhea
- eye, skin, nose or throat irritation
- breathing problems

If you experience these effects, you should consult your health care provider. These effects are reversible and are not likely to result in any long-term consequences. If you are particularly sensitive to chemical exposure, discuss this with your health care provider.

Does spraying malathion have an effect on the environment?

The PMRA has determined that malathion degrades rapidly in the environment, especially in moist soil, and it displays low toxicity to birds and mammals.

Malathion is highly toxic to insects, including beneficial ones such as honeybees. Because adult mosquito programs are typically carried out at night or early morning, the impact on honeybees is minimal since this is when they are least active.

Malathion is also highly toxic to fish and aquatic insects. To minimize exposure to aquatic organisms, care should be taken to avoid overspray or drift to aquatic environments like sloughs, ponds, prairie potholes, lakes, rivers, streams and wetlands when applying malathion or when cleaning and rinsing spray equipment or containers.

History of safe use for large-scale application

Malathion has been used in a number of large-scale spray programs for the control of pests. In Canada, it has been used for decades in Winnipeg to control nuisance mosquitoes. Other large-scale programs in the 1990s included the control of Mediterranean fruit fly outbreaks in Florida and California.

Role of the PMRA

The PMRA is responsible for assessing the human health and environmental safety of all pest control products prior to their approval for use in Canada. Manufacturers must provide the Agency with a full analysis of the product formulation, as well as extensive health and environmental data, so that a risk assessment can be carried out by PMRA scientists. Only products that are scientifically reviewed and found to be effective and acceptable for use are registered by the PMRA.

Contact information for the PMRA

Information on pesticide regulation can be obtained from the PMRA's Web site at www.hc-sc.gc.ca/pmra-arla or by contacting the Pest Management Information Service.

Other sources of information on malathion

See also the United States Environmental Protection Agency, Office of Pesticide Programs Web site at www.epa.gov/pesticides.

and

the New York State Health Department Web site at www.health.state.ny.us.

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