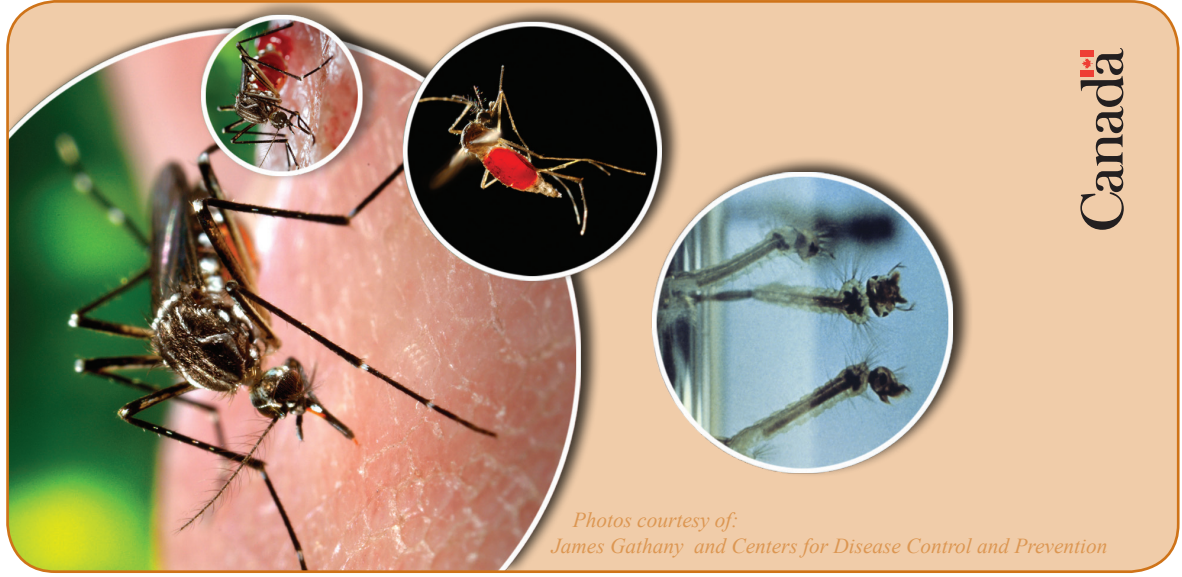


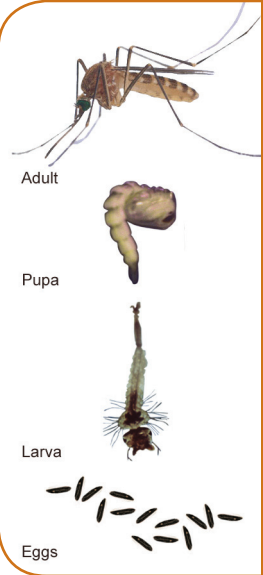


# Mosquitos

## Pest Note



Photos courtesy of: James Gathany and Centers for Disease Control and Prevention



Photos: Public Health Image Library

### Mosquitoes – What are they?

Mosquitoes are aquatic in their immature stages, and must have still or very slow-moving water in which to develop. The larvae cannot develop in tall grass or shrubbery, although the adults may be found resting in these spots during the day.

The females of some mosquito species lay their eggs directly on the surface of water, in a raft of between 100 and 400 eggs. The eggs hatch in a day or so into larvae. Other species leave their eggs in a spot that will flood later, such as mud at the edge of a drying pond.

Mosquito larvae look like worms, with no legs or wings; they are often known as “wigglers”. They need to breathe air, so they hang from the water surface and feed there by filtering small particles from the water, but will dive to the bottom for short periods to feed or escape capture. They will moult four times during the next few days. On the fourth moult, they become pupae, where they form legs and wings.

The comma-shaped pupae are also known as “tumbler” because they somersault in the water when disturbed. They cannot eat and they hang near the water surface as they must breathe air through two tubes on their backs. The mosquito adults develop inside the pupae and emerge in about two days or so after splitting the pupal skin.

The newly emerged adult mosquitoes rest on the surface of the water to allow their body to dry and harden up, and until they are strong enough to fly. Once this happens they will search for something to eat. This entire lifecycle from egg to adult can take less than 10 days when the temperature is favourable.

Both male and female mosquitoes feed on nectar from flowers. Male mosquitoes feed exclusively on nectar, while females must also feed on blood to produce eggs. Most mosquitoes in the wild feed on animals found in their habitat and not on people. Some species prefer birds as hosts, while others accept many animals as hosts, including people.

### What can they do?

Mosquitoes are known carriers of many diseases globally including West Nile Virus. Currently, West Nile Virus is causing concern in the USA and Canada. For information on West Nile Virus, visit [www.westnilevirus.gc.ca](http://www.westnilevirus.gc.ca).

### How can I manage them?

#### Control breeding sites

- Mosquitoes breed in stagnant water. Remove any possible breeding sites where mosquitoes could lay eggs, even in very small quantities.
- Eliminate sources of standing water in your yard. Store flower pots, watering cans, boats and wheelbarrows upside down.
- Empty tire swings of any water and, if possible, replace them with another type of swing.
- Cover any garbage, recycling or composting containers, to prevent water from accumulating in them.
- Drill holes in the bottom of containers that must be left outdoors uncovered.
- Replace water in bird baths and outdoor pet dishes at least twice a week to help eliminate stagnant water.



Photo: James Gathany, Public Health Image Library



Replace water in bird baths.



### Responsible Pesticide Use

#### Before Purchasing a Pesticide

- Identify the pest correctly.
- Use physical control methods and alternatives to pesticides.
- Read the label directions and safety precautions before buying the product. The label must include the name of the pest to be controlled and the treatment location (e.g., indoor, outdoor, garden uses, pet treatment).
- Purchase only the quantity of product needed for the treatment.
- Consider hiring a licensed pest control operator.

#### Using a Pesticide

- Carefully read all label instructions and precautions before using pesticides.
- Do not drink, eat or smoke while applying pesticides.
- Persons and pets should vacate the area during treatment. Cover or remove aquaria.
- If kitchen area is to be treated, cover or remove food, dishes and utensils.

#### After Using a Pesticide

- Always wash your hands thoroughly after handling any pesticide product.





- Empty your rain barrel if the water is more than a week old, unless it is properly protected with a fine-screened cover.
- Keep your swimming pool aerated, cleaned and chlorinated, even if it is not being used.
- Dump any water that collects on your swimming pool cover.
- Turn over plastic wading pools when they're not being used. Change the water in your wading pool at least twice a week.
- Keep your gutters clean.
- Check under shrubbery and lawn coverings for hidden containers or pooling water in low spots.
- Modify the landscape to eliminate water that collects in low areas on your property. Mosquitoes can develop in any puddle that lasts more than 7 to 10 days during warm weather.
- Repair any leaks from outdoor water pipes, joints or hoses. Replace washers on outdoor taps that drip.



B*Ti* can be used in private ponds.

### Controlling mosquitoes in ponds

Aquatic birds, frogs, fishes, beetles, water bugs and dragonflies eat many mosquito larvae. As well, you should aerate your ornamental pond.

Mosquito larvae may also be controlled with the bacterium *Bacillus thuringiensis var. israelensis* (B*t*i), a naturally occurring microbe-based product. B*t*i causes minimal impact to the environment and other insect and animal species. Commercial B*t*i products are available for use in private ponds and farm dugouts where no water flows out beyond the property limits.

### Protect yourself

During mosquito season (May to September for most of Canada), limit outdoor activities as much as possible between dusk and dawn, when mosquitoes are most active. There are mosquito species that bite humans during the day, but these have not been known to carry West Nile Virus.

- Wear long pants and long sleeves, as well as shoes and socks when outdoors for long periods of time, or when mosquitoes are most active.
- Wear loose clothes made of tightly woven materials that keep mosquitoes away from the skin.
- Use mosquito netting when sleeping outdoors or in an unscreened structure and to protect infants when outdoors.
- If you choose to use an insect spray in the patio and garden area, be sure to follow label directions carefully.
- Repair or replace old and torn screens in doors, windows and vents that no longer prevent mosquitoes from entering your home. Inspect all other possible access points into your home and repair as needed.
- If mosquitoes get into your home, you might find them resting on walls, under sinks, in closets or the basement. If you use an insect spray, be sure to follow label instructions carefully.
- Use a personal insect repellent. For information on the effective and safe use of personal insect repellents, visit [www.westnilevirus.gc.ca](http://www.westnilevirus.gc.ca).
- Citronella candles used outdoors around patios, picnic tables and decks to repel mosquitoes are not very effective mosquito control options.
- Bug zappers (electrocutor traps) placed out of doors have not been proven effective in reducing or eliminating mosquito populations.
- Electronic “mosquito repellents” that emit high frequency sound do not repel mosquitoes.
- Claims that certain plants placed around a porch or deck will repel mosquitoes are not supported by scientifically based test results.
- In general, devices designed to trap and kill mosquitoes or repellents other than those applied directly to the skin or clothing have not demonstrated effectiveness at reducing mosquito populations and the nuisance caused by these insects, despite killing many of them.



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#### Health Canada Pest Management Regulatory Agency

2720 Riverside Drive, Ottawa ON K1A 0K9  
 Phone from inside Canada: 1-800-267-6315  
 Phone from outside Canada: 613-736-3799 (long distance charges apply)  
 Fax: 613-736-3798  
[www.healthcanada.gc.ca/pmra](http://www.healthcanada.gc.ca/pmra)



- Do not permit persons or pets to contact treated surfaces until residue has dried completely.
- Provide adequate ventilation of treated areas after use.
- Wipe clean all surfaces that come in direct contact with food, such as counters, tables and stovetops, including indoor and outdoor surfaces.
- Always store pesticides out of reach of children and pets and away from food and beverages.

#### Accidental Poisoning

- Call a poison control centre immediately and seek medical attention.
- Take the pesticide container or label with you to the emergency facility or physician.
- Follow first aid statements on the label.
- In case of accidental poisoning of pets seek veterinary attention immediately.
- Report pesticide incidents to manufacturers (phone number on label). They are required to send them to Health Canada.

#### Disposing of Pesticides

- Do not reuse empty pesticide containers. Wrap and dispose of in household garbage.
- Follow the product label instructions or contact provincial authorities for disposal of pesticides.

**Note:** These are general recommendations. Consult the label for specific instructions. When in doubt, contact a professional.

#### Health Canada

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