



2019 MOSQUITO CONTROL PROGRAM FREQUENTLY ASKED QUESTIONS

• What is B.t.i.?

Bacillus thuringiensis subspecies israelensis, commonly referred to as B.t.i., is a bacterium found naturally in soils. Since 1982, it has been used successfully worldwide as a biological pest control agent to combat mosquitoes and black flies.(1)

• How is B.t.i. used?

B.t.i. is applied directly to the water where mosquito and black fly larvae are found. The bacteria are suspended in the water where the larvae will ingest it. None of the products containing B.t.i. may be applied to treated, finished drinking water for human consumption.(1)

• How safe is B.t.i.? Is there any health risks associated with its use?

B.t.i. poses little threat to human health through either handling products directly or being exposed to them indirectly, e.g. during a provincial or municipal mosquito control program. To activate B.t.i. toxins, alkaline conditions that exist only in certain insects' digestive systems must be present. The acidic stomachs of humans and animals do not activate B.t.i. toxins. There have been no documented cases involving toxicity or endocrine disruption potential to humans or other mammals over the many years of use in Canada and around the world. Studies have shown that even if B.t.i. spores are ingested or inhaled, they are eliminated without any adverse health effects.(1)

• How does B.t.i. work?

During the spore-forming stage of its life cycle, the B.t.i. bacterium produces a protein crystal which is toxic only to mosquito and black fly larvae. These microscopic crystals are ingested by insect larvae when they are feeding. In the alkaline environment of the insect's digestive system, the crystals are dissolved and converted into toxic protein molecules that destroy the walls of the insect's stomach. The insect usually stops feeding within hours and dies within days.(1)

• Will the B.t.i. harm other species?

The larvicide is a naturally occurring bacterium found in soils that is very specific to mosquito larvae. B.t.i. will not adversely affect other species such as fish, birds, reptiles, amphibians or mammals. Caffeine by comparison is more toxic than B.t.i. is if ingested.(4)

• Will the helicopter used to apply the B.t.i. scare my horses/cows?

A helicopter is used mainly during the early morning and early evening hours when wind speed is reduced. The helicopter fly's low over the tree canopy and targets stagnant water in wooded/flooded areas which are unlikely to be associated with grazing/resting areas for cattle/horses. The helicopter does make a turnaround at the end of passes at which time there is

no product being applied. Compared to a fixed wing aircraft, a helicopter can fly much slower and more controlled.(4) Animals may be disturbed at this time. The contractor will work with the property owner to minimize the disturbance.

- **How will B.t.i. affect my pets or livestock?**

There have been no documented cases involving toxicity or endocrine disruption potential to humans or other mammals over the many years of use in Canada and around the world.(1)

- **How long is the chemical active?**

The insecticidal toxin biodegrades quickly in the environment through exposure to sunlight and microorganisms. Its breakdown in water or soil usually occurs within hours of use.(2)(3)

- **How will B.t.i. affect my swimming pool?**

Larvicide will not be applied to man-made structures such as swimming pools.(4)

- **How do you determine what areas are treated by helicopter or by manual application?**

The helicopter will be used to larvicide the **majority** of standing water in Pefferlaw & Udora as it offers a better overall view of the area and a more thorough coverage, especially through difficult terrain. The helicopter is equipped with an on board G.P.S. navigation system. Ground equipment (backpack applicators) will be utilized on ditches and stagnant water located on accessible residential lots.(4)

- **What is the environmental impact of B.t.i.? Is it safe to use around rivers, streams, ponds and lakes?**

B.t.i. only becomes toxic in the stomachs of mosquito and black fly larvae. Because of this, it does not affect other insects, honeybees, fish, birds or mammals. The United States Environmental Protection Agency categorizes the risks posed by BT strains to non-target organisms as minimal to non-existent. The insecticidal toxin biodegrades quickly in the environment through exposure to sunlight and microorganisms.(1)(3)

- **I received the notice in the mail, is it necessary for me to return the form?**

Only if you are **OBJECTING** to the application of the Larvicide B.t.i. The Ministry of the Environment, Conservation and Parks requires this information as a condition of the issuance of a permit.

- **Should I register online or return the form in the mail or may I fax it to the Town?**

If you are **OBJECTING** it is easier to register online using the unique property identifier and access codes provided. Alternatively you may: sign and return the attached form by facsimile 905-476-8100 or by direct mail. You may also phone 905-476-4301 and contact the customer service division using the unique property identification code and access code on the attached form to register your objection. Upon receipt of your objection your property will then be excluded from the program. **Only one (1) form of notification is required. YOUR OBJECTION MUST BE REGISTERED BY FEBRUARY 22, 2019.**

- **More than one person owns the property, should they all sign the form?**

Registering online simply requires the unique property identifier. If you are planning to mail the form in it is our preference that all registered owners sign it, however should an individual be out of the country or otherwise not available, we will accept the form with only one signature.

- **Can I still return the completed **OBJECTION** form even though the deadline date has passed?**

Yes, the form should be returned even though the deadline date has passed. We will make every effort to respond to the property owner's preference.

- **Why should I participate in the Mosquito Control Program?**

Reduction in mosquito populations may increase your overall enjoyment of the outdoors.

- **Will I be notified before my property is sprayed?**

No, each property owner will NOT be contacted. There will be a notification published in the local newspaper prior to the start of the program. If there are specific circumstances that warrant concern about the application on your property, then please contact GDG CANADA.(4)

- **Will this year's Treatment Area Map (TAM) look different than last year?**

The overall treatment area boundary does not change from year to year; however, individual properties may or may not be excluded from time to time based on the owner's wishes. The map detailing the treatment area will be available to the public at the Town of Georgina Department of Operations and Infrastructure office and on the Town of Georgina website.

- **What happens if I do not wish the application of B.t.i. on my property?**

The Ministry of the Environment may request that a buffer be created around all properties where an objection is registered. This buffer will generally extend 50 metres in all directions around the property in question regardless of whether those abutting property owners have given their consent.

- **May I contact someone for more detailed information about the pesticide B.t.i. and its application?**

The Town's contractor is **GDG CANADA** and the contact person is Mr. Mark Ardis, Scientific Advisor, at info.mosquito@gdg.ca or call (Toll Free) 1-877-227-0552. The company website may be found at www.gdg.ca

Resource Links

Health Canada – www.hc-sc.gc.ca

Ministry of Agriculture Food & Rural Affairs – www.omafr.gov.on.ca

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-GDG Canada. - [http:// http://www.gdg.ca/en/science/](http://http://www.gdg.ca/en/science/)

Credits

1. http://www.hc-sc.gc.ca/cps-spc/pubs/pest/_fact-fiche/B.t.i./index-eng.php

2. http://www.omafr.gov.on.ca/english/livestock/horses/facts/info_mosq.htm#larvicides

3. <http://www.livestocktrail.uiuc.edu/uploads/horsenet/papers/tips%20for%20mosquito%20control.pdf>

4. Mark Ardis – Scientific Advisor - GDG Canada