

# Town of Caledon

## Spongy Moth Caterpillar 2022 Management FAQ

### Spongy Moth (*Lymantria dispar dispar*)

#### What is the spongy moth?

The spongy moth (*Lymantria dispar dispar*) is an invasive moth species from Europe that has established in southern Canada, as well as the eastern and central United States. Like other moth species, the spongy moth has multiple life stages: egg, larva (caterpillar), pupa (cocoon) and moth (adult).

Spongy moth populations in Ontario are known to reach outbreak levels every 7-10 years and tend to maintain such population levels for 2-4 years. In recent years, areas within the Town have been experiencing outbreak population infestation levels.

#### What are the impacts of the spongy moth?

A single spongy moth caterpillar can eat up to 1m<sup>2</sup> of tree leaves in its lifetime. Trees that are heavily defoliated (loss of leaves) by spongy moth larva can become susceptible to disease and damage from other insects.

Outbreak population infestations of spongy moth caterpillars also pose a threat to people and recreation services due to the large amount of frass (caterpillar droppings) produced, and hairs found on the larvae and pupae (cocoon) can cause skin irritation and allergic reactions.

#### How does spongy moth spread?

Main methods of spongy moth spread include:

- Young caterpillars using silk strands to drift in wind currents (also known as ballooning).
- Human dispersal of egg masses or other life stages found on or within objects traveling to new places (such as firewood, vehicles, outdoor furniture etc.).

## Spongy Moth Management

### What can we expect in 2022?

Spongy moth monitoring data collected in winter 2021/2022 is suggesting there is a *general* decline in the moth's outbreak population levels seen throughout the Town in previous years. High counts of old egg masses from 2020/2021 (that will not hatch this year), signs of animals and parasites feeding on egg masses, as well as cold winter temperatures all support signs of a declining outbreak population. However, some areas are still experiencing heavier infestation levels than others. The Town is expecting patchy infestation levels ranging from light to severe in 2022. To reduce the risk of another year of severe defoliation on street and park trees, the Town will be conducting management techniques on Town-owned properties in highly infested areas.

### How is the Town managing spongy moth caterpillars?

As part of an integrative pest management approach, the Town will complete various management techniques during the caterpillar phase of the moth. Management techniques to be used in 2022 include ground spaying trees, tree injections as well as sticky barrier bands.

### Ground Spraying

Hydraulic sprayers at the ground level are used by licensed exterminators to coat the leaves of the host trees with a biopesticide. The biopesticide selected has *Bacillus thuringiensis* subspecies *kurstaki* (*Btk*) listed as the active ingredient. When the spongy moth caterpillars consume the leaves, the *Btk* will activate in the stomach of the caterpillar and kill it.

#### What does BTK active ingredient mean?

There are a variety of domestic and commercial grade pesticides registered in Canada to manage pests on ornamental and shade trees. Depending on the target pest, application options, and how the pesticide functions, each pesticide product will contain various chemical components. The active ingredient listed is the chemical or component of the pesticide product that kills, controls, or repels a target pest. Other ingredients not listed as active ingredients are known as "formulants" or "inert ingredients". They are often added for a variety of reasons such as increasing shelf life, to help the product stick to leaves or surfaces it is applied to, to help the product dissolve in water, and so on.

When managing spongy moth, the Town will only conduct ground spraying operations with a pesticide that has *Bacillus thuringiensis* subspecies *kurstaki* (*Btk*) listed as the active ingredient.

#### What is Btk? How does it work? Is it safe for humans?

Btk is a naturally occurring bacteria found on dead or decaying matter in soil that has been incorporated into commercial products for pest management.

When larvae (caterpillars) of the moth and butterfly family (Lepidoptera) consume leaves

treated with a Btk biopesticide, its alkaline (basic, or high PH) stomach environment activates the Btk. Btk will then release proteins that will poison the digestive system, leading to infection that kills the caterpillar. Since Btk is only activated in the alkaline environment of the susceptible insect's digestive systems, it poses little threat to human health. The acidic (low PH) stomach environments of humans and mammals do not activate Btk, and there have been no documented cases involving toxicity or endocrine (hormonal and growth system) disruptions in humans or other animals over many years ([Health Canada 2009](#)). Btk biopesticide products are often used in agricultural pest management practices for produce items found in most grocery stores (including organic produce).

**If Btk is safe, why are hired contractors and Town Staff wearing respirators when applying it?**  
When applying pesticides of any kind, licensed exterminators are legally required to wear personal protective equipment listed on the pesticide product label. Licensed exterminators must also follow application methods indicated on the product label. Wearing personal protective equipment and following application requirements enhances safe pesticide application and reduces the risk of pesticide exposure during extended periods of application. Protective equipment and application instructions will vary between different products that have Btk listed as an active ingredient and depend on if the product is of a domestic or commercial grade. If applying Btk on trees on your property, always follow health and safety instructions listed on the product label.

**How long does Btk stay in the environment?**

Once applied, Btk biodegrades in approximately 1-4 days through exposure to sunlight and microorganisms. This is why a second application is required 7-10 days later. A second application ensures that caterpillars that hatch later in the spring will consume leaves that have the proper dose of Btk.

If applied as directed on the product label, there are no groundwater contamination concerns, as Btk does not travel through the soil beyond 25 cm.

**Does Btk only kill spongy moth caterpillars?**

No, Btk will kill any caterpillar of the lepidoptera (moth and butterfly) family. Other moth and butterfly larvae feeding on leaves at this time could be affected by Btk application on host trees. Btk is not known to affect or harm butterflies and/or moths in other life stages (egg, pupae, or adult) during the spongy moth application window.

**Will the Town be conducting an aerial spray using Btk?**

The Town of Caledon will not be conducting an aerial spray in 2022.

Impacts of outbreak population levels throughout the Town will vary between urban and natural forested areas. This is because trees experience different conditions, and pressures or stressors in these locations. The Town will continue to manage highly infested urban areas (park and street

trees) using methods such as sticky barrier bands, ground spray treatments with Btk biopesticide, and injections with a biopesticide. Aerial application of Btk biopesticide is not typically used in urban areas due to logistical limitations. Instead, aerial application is favoured for areas with remote or isolated woodlots. The Town of Caledon will continue to monitor Town owned trees and will use the results to inform future management of the spongy moth. This could include aerial spraying Town owned trees if it were deemed necessary and available as an option for the Town.

### Tree Injection

Similar to ground-spray applications, injection treatments also include the use of a registered biopesticide. Through small holes drilled into the tree, a biopesticide TreeAzin® is injected and absorbed into the tree's tissues. The active ingredient (azadirachtin, derived from neem trees) controls insect larvae feeding on the tissues of the tree by regulating growth and disrupting normal growth processes. For more information on TreeAzin® visit the [BioForest website](#).

Only select trees that meet specific size requirements and/or infestation levels will be injected.

### Sticky Barrier Bands

The Town will be installing sticky barrier bands on trees that meet specific infestation levels but do not meet conditions well suited for biopesticide application. Sticky barrier bands are most effective when caterpillars first hatch and are difficult to remove or hand-pick. The Town has opted to use barrier bands that do not contain pesticides of any kind, but bands should not be removed or touched during the duration of the moth's life cycle. The selected barrier band also has a protective layer around the sticky material that traps the caterpillars. This will limit the capturing or trapping of non-target wildlife. The Town will manage installed sticky barrier bands as needed.

When can I expect to see treatments occurring throughout the Town?

#### **Sticky barrier band installation:**

- Late April to early May 2022

#### **Ground Spraying Treatments with Btk:**

- May-June 2022
- Two treatments will be required on selected trees approximately 7-10 days apart

#### **Injections with TreeAzin®:**

- May- June 2022
- Only one treatment is required

*Please Note: selected trees will only receive one biopesticide treatment type. A tree that is sprayed will not be injected and vice versa.*

### Is the Town handing out burlap this year?

Like 2021, the Town will be conducting a burlap band kit hand-out program in 2022. Upon request, residents will be able to receive up to two burlap bands per household. Depending on tree size, one burlap band strip will be able to cover 1-2 trees.

Burlap bands will be available April 18, 2022.

For pick up locations and instructions on how and when to use a burlap band visit [caledon.ca/spongy](http://caledon.ca/spongy).

### Why doesn't the Town use burlap bands for caterpillar management?

Though burlap bands are a cost-effective and easy management tool to make caterpillars more accessible for removal, they do require frequent monitoring. This approach is intended for individual trees or a small number of infested trees on a single property. It is less effective for the Town to complete at the municipality-scale as many burlap bands would require daily inspection. For this reason, other methods such as sticky barrier bands, as well as ground spray treatments and injections with biopesticides have been selected as part of an integrated pest management approach.

### Where is the Town managing spongy moth caterpillars?

Prioritization of spongy moth management areas is dependent on the following:

- Infestation levels as indicated by winter egg mass monitoring
- Host tree species and height/size
- History of tree defoliation
- Proximity of infested trees to surrounding Town trees
- Current best management practices for spongy moth

Public notice letters will be sent to residents on streets that have Town-owned trees selected to receive chemical treatment.

### What should I do if I see trees being treated for spongy moth throughout the Town?

If trees are receiving biopesticide treatments to manage for spongy moth in your neighbourhood:

- Consider keeping Town-owned trees accessible and clear of personal items.
- Do not enter the immediate work area while spraying operations are occurring.
  - Whenever possible, remain indoors while the work is occurring and for 30 minutes after spraying to allow for the droplets to deposit on the leaves of the tree.
  - Do not enter the work area or walk beneath the tree until the Btk product has dried.
- Do not touch injection canisters or injection sites once canisters are removed.
- Follow instructions provided by hired contractors or Town staff on site of the work area.
- Follow signs posted in work area.

## Reporting Spongy Moth and Requesting Management

How do I report a spongy moth sighting?

To request an inspection by the Town:

- Contact Service Caledon- 905.584.2272 x. 7750 or [info@caledon.ca](mailto:info@caledon.ca)

To support the Town of Caledon's monitoring efforts as a citizen scientist:

- Visit [caledon.ca/spongy](http://caledon.ca/spongy) to access the [Town of Caledon Spongy Moth Tracking Form](#) and [Spongy Moth Tracking Map](#)

To support other citizen science-based spongy moth monitoring:

- Report *Lymantria dispar* to the [Early Detection and Distribution Mapping System](#) by completing a [report an insect form](#)
- Call the Invading Species toll-free hotline at 1-800-563-7711
- Email [info@invadingspecies.com](mailto:info@invadingspecies.com)

I want the Town tree near my property treated, what do I do?

If you think a Town-owned tree(s) adjacent to your property is infested with spongy moth, please contact Service Caledon - 905.584.2272 x. 7750 or [info@caledon.ca](mailto:info@caledon.ca) to arrange a tree inspection.

The infestation will be investigated by the Town and the appropriate management option will be selected.

How do I treat trees on my private property?

Landowners can help manage spongy moth numbers on their properties by:

- scraping accessible egg masses (from 2021 population) and soaking them in a soapy mixture for 48 hours;
- burlap banding or sticky barrier banding trees on their property to capture caterpillars that travel down the trunk of the tree (to then soak in soapy mixture for 48 hours);
- contacting a professional tree care provider for the possibility of a biopesticide treatment;
- setting up pheromone traps when adult moths have emerged;
- scraping accessible egg masses (from the 2022 population) in the fall/winter months and soaking them in a soapy mixture for 48 hours.

For more information, visit the *How and when do I protect trees on my property?* drop down at [caledon.ca/spongy](http://caledon.ca/spongy).

## I have several trees or a woodlot on my property, how should I manage for spongy moth?

Methods for spongy moth management as described by the Town are intended for individual trees and not large-scale woodlot management. Aerial application of biopesticides with the active ingredient Btk is a common approach to manage severe spongy moth populations at large scales, however; few contractors that complete aerial applications for private properties exist in southern Ontario. Due to this limitation, property owners should consult with chosen tree care professionals in the fall and/or winter months preceding an expected summer infestation to determine the best way to manage trees on their own property and provide ample time to contact contractors able to conduct management at larger scales.

Important things to consider when hiring a contractor for large-scale spongy moth management include (but are not limited to):

- Current monitoring and/or outbreak predictions of the spongy moth population for the property and surrounding areas.
- Proximity of neighbouring properties with infested wooded areas.
- Control efforts (if any) of neighbouring properties with infested wooded areas.
- Presence and occurrence of natural controls and/or predators of the spongy moth.
- Size, species composition, and overall health of the wooded area selected for management.
- History of defoliation (loss of leaves) of the wooded area.
- Recreational use of the wooded area.
- Biopesticide (product name) selected for use by contractor and active ingredient listed.
- Application timelines of biopesticide aligning when caterpillars are actively feeding and under 1 inch in size.
- Prioritization of management areas when resources are limited.

Here are some questions you should ask before hiring a licensed tree contractor:

- When is the window of application? How many treatments are required?
- Are you using a registered insecticide with Btk?
- Are you a Licensed Pesticide Operator?
- Is your crew trained, do you use specialized equipment, and have the appropriate liability insurance?
- Do you specialize in tree work/tree health care?
- Can I get an estimate in writing?

Asking these questions will help ensure you make an informed decision and ensure you receive quality work completed in a safe manner.