

Is *Bacillus thuringiensis kurstaki* (Btk) harmful?

Btk is not harmful to the environment, humans or other wildlife. Btk is a naturally occurring bacteria that affects the digestive systems of caterpillars. Since Btk does not specifically target LDD moths, there are some native caterpillars that will be affected by aerial spray operations.

My neighbour's trees also have LDD moths. How do I inform them?

Encouraging your neighbours to manage the LDD moth population will benefit the entire neighbourhood. LDD moths can travel by wind up to one kilometer in distance, taking over urban neighborhoods quite easily. If you notice that your neighbour's trees also have an infestation, encourage them to manage the situation. If you are unable to connect with your neighbours, the County can attempt to contact them on your behalf.



Outbreaks tend to occur every 7-10 years, with the last major outbreak in the County of Brant being estimated around 2008.

Aerial Suppliers who can help?

The cost of doing an aerial spray can be costly, and if not done properly, it may be less successful than desired. Encouraging your neighbourhood to participate will alleviate the cost for you and would result in a high success rate for everyone.

Local companies that aerial spray Btk are:

Zimmer Air Services Inc.

Bleinheim, ON

T: 519.676.9550 | TF: 1.800.665.5485

F: 519.676.9552

info@zimmerair.com

zimmerair.com

General Airspray Ltd.

Lucan, ON

T: 519.227.4091

genairspray@hotmail.com

The County of Brant does not endorse/recommend any specific vendor. All procurement procedures follow the County of Brant Purchasing Policy #45-13

Questions?

For more information please email

moth@brant.ca or call

519.44BRANT (519.442.7268)

brant.ca/Moths

 @BrantCommunity

COUNTY OF
Brant Simply Grand

Lymantria dispar dispar moth



The County of Brant's **Lymantria dispar dispar (LDD) moth program** aims to control outbreak levels of LDD moths in our community. To help manage infestations, the County is implementing a sustainable approach of control.

brant.ca/Moths

Did you know?

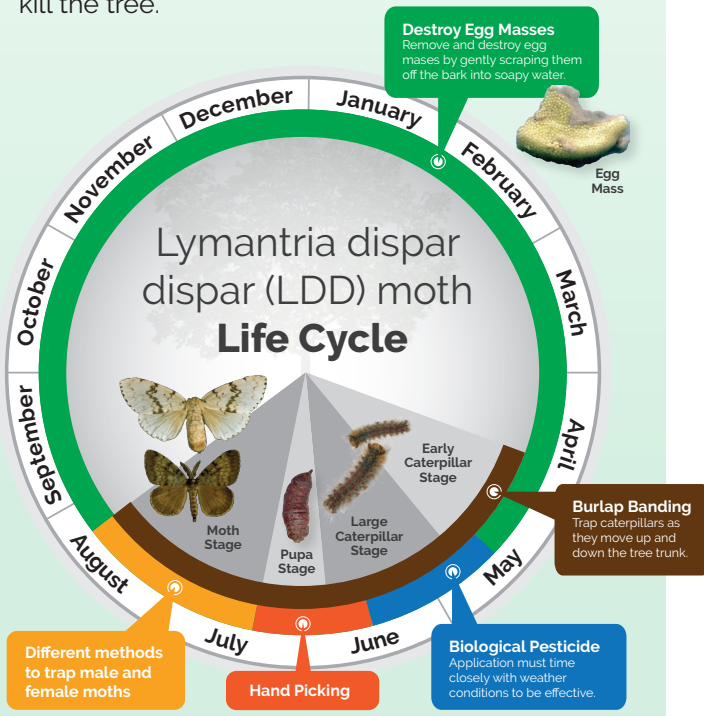
A female LDD moth will lay about **1,000 eggs** per breeding season!

What is a *Lymantria dispar dispar* (LDD)?

(formerly known as a Gypsy Moth)

The ***Lymantria dispar dispar* (LDD) moth** is an invasive species which was introduced to North America in the mid-1800's and was first detected in Ontario in 1969.

The caterpillar stage of this insect feeds on the leaves of both deciduous and coniferous trees, leaving them defoliated. This makes the trees more susceptible to disease and damage from other insects, like tent caterpillars. While most trees can handle a defoliation, several repeated defoliation events can weaken and eventually kill the tree.



Credit: LDD Moth Life Cycle graphic adapted from USDA APHIS PPO, Bugwood.org

Life cycle of the LDD moth

The LDD moth has a one year life cycle, with **four distinct stages**:

- 1. Egg Stage** - The LDD moth overwinters in the egg stage, and eggs are laid in masses of 100 to 1,000 eggs. Each egg mass is tan coloured with a wooly texture, and are found on the sides of trees, the underside of tree branches, and attached to other outdoor structures.
- 2. Caterpillar Stage** - The eggs hatch into caterpillars in May and begin feeding on the leaves of the trees where they hatch. The caterpillars feed until mid-summer and usually feed in the tree canopy at night and descend the tree during the day to hide in sheltered areas.
- 3. Pupa Stage** - Once the caterpillars complete feeding, they seek a sheltered location and enter the pupa stage by wrapping themselves in a coppery coloured shell that hangs from the underside of tree branches or in crevices in tree bark or on other structures.
- 4. Moth** - After approximately 2 weeks, the moth will emerge from the pupa stage. Male moths are tan coloured and can fly, while female moths are white in colour and cannot fly. These moths live for about 2 weeks and do not feed. After mating, the female moth lays an egg mass and dies, completing the life cycle.

Look for 5 rows of **blue dots** and 6 rows of **red dots** along their backs.



What can be done?

There are several ways to control the LDD moth population, which include:

Egg Mass Removal - Egg masses can be physically removed by scraping them off trees and structures and either burning them or soaking them in soapy water or a bleach mixture. Not feasible for larger outbreaks.

Banding Trees - Bands of tape or burlap can be wrapped around tree trunks while caterpillars feed, trapping the caterpillars and allowing them to be disposed of. Like egg mass removal, this is not feasible in larger outbreaks.

Traps - Traps which attract and trap moths using pheromones can be deployed in areas where outbreaks are occurring. Not feasible for larger outbreaks.

Chemical Treatment - Chemical insecticides can be sprayed on trees with caterpillar infestations. This is feasible for smaller trees or by tree services with high-pressure spray equipment, but is not feasible for larger woodlot areas. Also, chemical insecticides can have health and environmental side effects.

Biological Treatment - The most common approach to dealing with large infestations is to treat the LDD moth populations with a biological pathogen called [Bacillus thuringiensis kurstaki \(Btk\)](#) which is a naturally occurring organism found in soil. Btk is consumed by the caterpillars and will kill the caterpillar a few days later. This treatment is most commonly applied from the air using aircraft which spreads the material evenly into the feeding zones. Aerial treatment is the only feasible way to treat this pest in woodland areas or larger urban settings.

