Harper Lake Association
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May 1, 2022

Dear Harper Lake Property Owner:

As you know, the past two summers have shown a progressively worsening infestation of spongy moths (formerly known as gypsy moths). At the request of residents attending our annual meetings, the Harper Lake Association Board of Directors has contracted with Hatfield Spraying of Nunica, Michigan, to conduct an aerial spraying later this spring to help control the outbreak of these moths. Aerial spraying will not completely eliminate the moths, but will reduce the number of caterpillars and the defoliation they cause. We're hopeful that combined with natural diseases and weather factors, the aerial spraying will make outdoor conditions better for our residents this year.

Your property is scheduled to be sprayed with a biological insecticide called Bacillus thuringiensis (Bt) sometime between late-May and early June depending on the weather (will not spray on Memorial Day weekend). The spray should occur in one day. The exact date will be dependent on caterpillar development and weather conditions. When we know the targeted spraying date, we will publish this information on our Facebook page (facebook.com/harperlakemi), on our website (see letterhead), and will send an email to all the emails in our property-owner database. If we do not yet have your email address, please send your contact information to us at harperlakeassociation@gmail.com as soon as possible.

The applicator for this program is Hatfield Spraying, of Nunica, Michigan. Hatfield Spraying will apply the Bt in a very fine mist spray to cover the leaves of trees from a small crop-dusting airplane that will fly very low over the tops of the trees, making several passes over a period of 1-2 hours. The spray is reported to be barely noticeable at ground level and will not harm people, pets or other wildlife. After the material dries on the leaves, rain will have little effect in washing off the material. Information from the MSU Extension Office on the Bt bacteria has been reprinted on the back side of this letter.

Bt has been used for several years and only affects the caterpillars of moths and butterflies that are actively feeding at the time of treatment. In 2-3 days after ingestion, the caterpillars become lethargic and stop feeding, and will start to die in 5-7 days.

The HLA is paying for the spraying of all 138 properties with lakefront frontage on Harper Lake from its environmental reserve fund. No funds are being sought from property owners at this time; however, you will have the option of voluntarily contributing to rebuilding the reserve fund when you renew your dues for 2023.

Please contact us at harperlakeassociation@gmail.com if you have any questions.

Karen Brower, President
Harper Lake Association Board of Directors

Brian Ritsema, Vice President

Btk: One management option for Lymantria dispar (Gypsy/Spongy Moths)

Copied from the Michigan State University Extension website: https://www.canr.msu.edu/news/btk-one-management-option-for-gypsy-moth

What is Bt?
Bt is the abbreviation for *Bacillus thuringiensis*, a native bacterium commonly found in soil and on plants. Thousands of Bt varieties exist in nature, each with its own unique characteristics. Most Bt varieties are insect pathogens that cause disease in specific groups of insects, and several are registered with the U.S. Environmental Protection Agency (EPA) as microbial insecticides. Though Bt products can be highly effective in controlling specific insects, they have little impact on other animals. Therefore, sprays made with Bt pose much less risk of affecting non-target organisms than conventional chemical insecticide sprays.Bt has been used for Lymantria dispar (Gypsy/Spongy moth) control in the northeastern U.S. since 1961 and in Michigan since 1985.

The Btk formulation used for Lymantria dispar spray programs in Michigan is certified by the Organic Materials Review Institute (OMRI), a national nonprofit organization that approves products for organic growers, as regulated by the USDA National Organic Program. Btk is commonly used by organic gardeners and farmers, as well as some conventional farmers, to control caterpillar pests of fruits and vegetables.

How does Btk control Lymantria dispar?
When Btk grows, it produces spores and non-living protein crystals. When Lymantria dispar caterpillars eat leaves that have been sprayed with Btk, the protein crystals dissolve in their digestive system and become toxic. This can occur only in caterpillars because of the many unique conditions present in their digestive system. For example, caterpillars have an alkaline digestive system, while humans and many other animals have acidic digestive systems.

What are the ingredients in a Btk product?
Commercially available Btk products are composed of two major components: the active ingredients and the inert ingredients. The active ingredients in products used to control Lymantria dispar are Bt *kurstaki* HD-1 spores and protein crystals. Bt *kurstaki* HD-1 is a naturally occurring bacterium in the environment.

Inert (non-active) formulation ingredients are added to the Btk spores and crystals. These ingredients make it easier to mix, spray and store the product. These ingredients are food-grade additives that appear on the U.S. Food and Drug Administration's "Generally Recognized As Safe" list.

Does Btk harm other insects?
Btk is much more selective than conventional chemical insecticides, but it can affect other kinds of foliage-feeding caterpillars if they are also feeding on treated leaves. This is a good reason to use Btk only when Lymantria dispar populations are high. Some caterpillar species are more sensitive to Btk than Lymantria dispar, while others are less sensitive. Scientists have studied non-target species of caterpillars following Btk sprays for Lymantria dispar suppression. They found that populations of native caterpillar species tend to recover by re-colonizing areas relatively quickly.

Btk has little or no effect on the large majority of insects, including bees, lacewings, ladybird beetles and other beneficial species. This is a significant benefit of using Btk rather than conventional chemical insecticide products, which are toxic to many kinds of insects.

How safe is Btk for humans?
After 50 years of testing and widespread use, Btk has demonstrated minimal hazards to people and other mammals, birds, fish, beneficial insects and other non-target organisms. To ensure the continued safety of Btk for the public, the EPA administers an extensive system of regulatory safeguards. These include requirements for mammalian and environmental toxicology testing of the Btk active ingredients and formulated products. Quality control procedures are also in place to ensure the safety of each batch of Btk products.

As part of its regulatory function, a reassessment of Btk safety conducted by the EPA confirmed earlier findings, including: "*…the lack of any reports of significant human health hazards of the various* Bacillus thuringiensis *strains…*" (EPA document #EPA 738-R-98-004).

Will Btk get rid of ALL my Lymantria dispar caterpillars?
It's important to realize that a Btk spray will not kill every Lymantria dispar caterpillar on your property. When Btk is applied properly, however, it can help protect your trees from serious defoliation and reduce the annoyance caused by high numbers of Lymantria dispar caterpillars during an outbreak.

Is it possible to buy Btk to spray caterpillars in my own garden?
Yes, several commercially available Btk products can be used to control caterpillars on shade trees, fruit trees or plants in the garden. Both liquid formulations and wettable powders are available from local garden stores. Be sure to follow the directions on the label.