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AERIAL TREATMENTS FOR *Lymantria dispar* OVER YOUR AREA

Weather permitting, during mid-late May, depending on the warm weather, the area you live in is scheduled for an aerial application to eliminate *Lymantria dispar* (gypsy moth). A helicopter will spray a biological pesticide Btk (See Below for more information). This could occur on just about any day of the week.

Lymantria dispar is an invasive species from Europe, is one the most damaging forest and tree pests in the United States, and has become permanently established in Illinois. This treatment is part of a statewide program to prevent *Lymantria dispar* from establishing itself outside of the northeast corner of Illinois. We are also attempting to reduce the impact of its invasion from other states.

Lymantria dispar defoliates multiple species of trees with the huge numbers of caterpillars that result from an infestation. After a few years (1-3) of having its leaves completely stripped-off, a tree will die. Also, the caterpillars are a tremendous nuisance, as they may render your yard nearly unusable from mid-June to early July.

Btk is a bacterium that occurs naturally in the soil. Like other bacteria, Btk forms spores, but unique to this species, it also forms crystals that contain a natural substance toxic to certain types of moths and butterflies. When formulated as an insecticide, Btk is a stomach poison that must be eaten by a *Lymantria dispar* caterpillar to be effective. The crystals dissolve rapidly and paralyze the gut wall. The resulting "stomachache" causes the caterpillar to stop feeding on the foliage. The spores then invade the tissues and multiply until the insect dies. Btk may be applied by airplane, helicopter or from ground equipment. The effectiveness of Btk declines rapidly, normally lasting only about a week after application.

How Btk Affects People:

Btk is not toxic to people or animals. People who handle and load the insecticide are the most likely ones to experience any effects. These effects could consist of minor skin irritations of the skin, eyes, or respiratory tract. Based on epidemiological studies and the long history of its use, there is no evidence that the application of Btk formulations cause any effects to people or animals in treated areas.

Bacillus thuringiensis var. kurstaki (Btk)

We use Btk over residential areas because it has no toxicity to humans or animals. It affects caterpillars, and only caterpillars, when they eat leaves that have Btk on their surfaces during the 2 plus weeks that Btk is active. The Illinois Department of Agriculture has been using Btk in the Metro Area of Chicago since 1980.

Our DeKalb Office can be contacted at 815.787.5476. Or email Nancy.Johnson@Illinois.gov with questions. Keep in mind that our *Lymantria dispar* Specialists will be in the field on the spray team during the spray program. You can view treatment blocks (areas) on line at the Slow the Spread website. <https://www.slowthespread.org/pages/illinois-outreach>

Q&A'S ABOUT USING BTK TO CONTROL LYMANTRIA DISPAR (GYPSY MOTH)

ILLINOIS DEPARTMENT OF AGRICULTURE, NORTHERN ILLINOIS FIELD OFFICE, DEKALB 815.787.5476



Q: WHAT IS THE LYMANTRIA DISPAR, AND WHY IS IT A PROBLEM?

A: The Lymantria dispar is an insect with a big appetite for oaks. Each caterpillar can grow up to 2 inches long and can consume up to 11 square feet of foliage from early May until June. When abundant, caterpillars can



completely defoliate trees. Although healthy trees can survive defoliation, repeated removal of leaves can kill a tree. Older, less vigorous trees suffering from drought can be killed by a single defoliation. Capable of feeding on 500 plants, this pest threatens Illinois forests and suburban landscapes.

Lymantria dispar caterpillars are also a public nuisance in recreational and residential areas that are known for their oaks. The rain of caterpillars and their excrement from treetops can discourage even the heartiest hikers from taking a walk in the park. Some people develop rashes or allergies to caterpillar hairs that float through the air.

Q: WHAT IS BTK, AND HOW DOES IT KILL THE LYMANTRIA DISPAR?

A: Btk, short for Bacillus thuringiensis var. kurstaki, is a bacterium found naturally on leaves and in the soil. These bacteria are tiny little factories that produce protein crystals that kill specific groups of insects.

When eaten, the protein crystals tear the cells that line the intestine of susceptible insects, causing them to die from bacterial infection. The source of this infection can be the Btk spores in Btk insecticide or any of a number of species of bacteria already present in the insect gut. Death can occur within a few hours to a few weeks after Btk application. The strain commonly known as "kurstaki" is used to produce the Lymantria dispar insecticide that kills the caterpillars of various moths and butterflies.



Q: HOW IS BTK INSECTICIDE USED TO KILL LYMANTRIA DISPAR?

A: In Illinois, most Btk applications are applied from aircraft to areas where Lymantria dispar threaten trees and the public. A series of two treatments are applied in early May, when caterpillars are small and most susceptible to Btk. Sprays outside of the generally infested area are applied to eliminate isolated populations of moths, thereby slowing the spread of the Lymantria dispar infestation through the state. In counties where Lymantria dispar is already established, these sprays are designed to prevent or reduce defoliation and nuisance problems

Btk bacteria do not cause diseases in people, mammals, birds, or fish. Btk insecticide can cause some minor and temporary irritation to exposed skin, eyes, ears, nose, and throat. However, numerous studies of large communities of people exposed to Btk during aerial sprays for Lymantria dispar and other caterpillars have repeatedly failed to find any significant adverse risks to the health of the general public.

Btk has safely and successfully used to control *Lymantria dispar* throughout North America for many decades. It is also applied to food crops the day they are harvested; honeybees, ladybugs and other beneficial insects are not affected by Btk.

Q: ISN'T IT BETTER TO "BE SAFE THAN SORRY" AND COMPLETELY AVOID EXPOSURE TO BTK?

A: Most North Americans have already been repeatedly exposed to Btk. Because Btk naturally persists in soil and is also sprayed on many crops (including those that are organically grown), it is likely that most of us have been exposed to Btk during the course of our daily lives. If a person eats fruits and vegetables purchased at a grocery store, he or she has probably already ingested Btk, without any ill effects.



Q: HOW CAN I AVOID EXPOSURE FROM THE EFFECTS OF BTK SPRAY?

A: Despite its record as one of the safest pest control methods available, local residents may choose to minimize their exposure to the Btk spray. To do so, remain indoors at least 10 minutes after the aircrafts have finished spraying. Wait until spray or dew has dried before letting children play outside. If for some reason you come in contact with Btk spray, wash the affected area with soap and water.



Q: WILL BTK SPRAYS KILL OTHER BUTTERFLIES?

A: Yes, but they will not eliminate them. Btk only kills butterflies and moths that are in the caterpillar stage. Most of Illinois' butterflies, including Monarch butterflies, are not in the caterpillar stage until over a month after the aerial spray, when the Btk protein has degraded. The spray does not contaminate the area with Btk bacteria. Furthermore, only small parts of the forest are targeted for spray. Butterflies outside the spray area are not affected.

Q: WILL BTK SPRAYS TAKE THE PAINT OFF MY CAR?

A: No. Some people living in spray areas have reported the presence of a fine dust after the spray, but this easily washes off and does not harm the finish.

For more information please contact the Illinois Department of Agriculture, Northern Field Office, Dekalb

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