

Q&A's About Mating Disruption to Control *Lymantria dispar* (formally known as gypsy moth)



What is mating disruption?

Mating disruption is a control strategy used to manage low level *Lymantria dispar* populations by preventing male moths from finding mates. This is accomplished by broadcast applying female *Lymantria dispar* pheromone, the powerful scent produced by flightless female *Lymantria dispar* to attract mates, in infested areas. Males become overwhelmed by the abundance of scent, and being unable to find a female moth, die without producing offspring. *Lymantria dispar* pheromone is produced commercially for use in detection and control programs.



What is the *Lymantria dispar*, and why is it a problem?

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 through 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 different kinds of plants, this pest threatens Illinois forests and suburban landscapes. *Lymantria dispar* caterpillars are also public nuisance in recreational and residential areas where oak trees are prevalent. The rain of caterpillars and their excrement

from treetops can discourage even the heartiest hikers from taking a walk in the park. Some people who come in contact with caterpillar hairs develop skin rashes or allergies.



Where did the *Lymantria dispar* come from?

The *Lymantria dispar* was accidentally introduced to North America from Europe in 1869. Since that time, *Lymantria dispar* has been spreading slowly to the west and south.

Because adult females cannot fly, most of the *Lymantria dispar* spread occurs when young caterpillars crawl to treetops and are blown by the wind to new sites. *Lymantria dispar* can be moved long distances when people unknowingly carry them from infested areas as egg masses or cocoons attached to firewood, campers, nursery stock, or other outdoor items. Most of the isolated pockets of infestation that have been located in Illinois are a result of this kind of long-distance movement.



How is the pheromone used to slow the progress of the *Lymantria dispar*?

Traps baited with pheromones have been used in Illinois to detect and eliminate pockets of these hitchhiking *Lymantria dispar* since 1973. They are also used to monitor the natural spread of this insect as it moves through Illinois. Currently, a few counties in the northern part of the state are considered infested, although small numbers of *Lymantria dispar* periodically appear throughout Illinois. When male moths are found in traps outside of infested areas, IDoA personnel increase trapping intensity to locate the source of the moths and inspect the area for egg masses. Once the moths are detected, decisions are made about how to eliminate *Lymantria dispar* from these isolated areas. Since the beginning of the trapping program, many pockets of *Lymantria dispar* populations have been detected, treated, and eliminated in Illinois.



How is *Lymantria dispar* pheromone used to control *Lymantria dispar*?

Lymantria dispar populations can be suppressed or eliminated when an infested area treated with enough pheromone to make it difficult for male moths to find females. This is called "mating disruption", and male *Lymantria dispar* unable to mate simply die of old age without producing any offspring.

Lymantria dispar pheromones for mating disruption is applied through waxy droplets in a product called SPLAT GM in late June, just before adult moths would normally emerge and mate.

What is SPLAT GM?

SPLAT GM is simply an alternative delivery system for *Lymantria dispar*

pheromones. It involves aerial application of small, waxy droplets infused with the pheromone into the tree canopy. About 7 ounces of the product are used per acre. SPLAT GM has less pheromone wastage due to its improved controlled-release profile

Will the pheromone products be noticeable in the treatment area?

A few tiny droplets may be noticed but can be washed off with warm soapy water. SPLAT droplets will not damage the finish of your car or vinyl siding.

Are mating disruption treatments dangerous to people or wildlife?

No. They are non-toxic to humans and animals. The pheromone application will only affect *Lymantria dispar*. Caterpillars of other moths and butterflies will not be harmed.

Since *Lymantria dispar* pheromone is safe and effective, why isn't mating disruption the only method used to control *Lymantria dispar*?

Mating disruption is not effective in areas with heavy *Lymantria dispar* populations. In such areas, there is enough male and female density for them to find each other randomly. In contrast, when populations of moths are very low, mating disruption with *Lymantria dispar* pheromone works well, and is cost competitive with other treatment methods, such as Btk (*Bacillus thuringiensis* var. *kurstaki*), a bacterial insecticide often sprayed from planes to control *Lymantria dispar*.

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