



Q&A's About Mating Disruption to Control Gypsy Moth

What is mating disruption?

Mating disruption is a control strategy used to manage low level gypsy moth populations by preventing male moths from finding mates. This is accomplished by broadcast applying female gypsy moth pheromone, the powerful scent produced by flightless female gypsy moths 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. Gypsy moth pheromone is produced commercially for use in detection and control programs.



What is the gypsy moth, and why is it a problem?

The gypsy moth 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. Gypsy moth 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 gypsy moth come from?

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

Because adult females cannot fly, most of the gypsy moth spread occurs when young caterpillars crawl to treetops and are blown by the wind to new sites. Gypsy moths 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 gypsy moth?

Traps baited with pheromones have been used in Illinois to detect and eliminate pockets of these hitchhiking gypsy moths 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 gypsy moths 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 gypsy moth from these isolated areas. Since the beginning of the trapping program, many pockets of gypsy moth populations have been detected, treated, and eliminated in Illinois.



How is gypsy moth pheromone used to control gypsy moths?

Gypsy moth 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 gypsy moths unable to mate simply die of old age without producing any offspring. Gypsy moth pheromones for mating disruption can be applied two ways; through pheromone flakes in a product called Disrupt® II, or through waxy droplets in a product called SPLAT GM.

What is Disrupt® II?

Disrupt® II pheromone flakes are tiny bits of plastic that have been treated with pheromone. About one cup of flakes is spread by airplane over each acre of an infested area during late

June, just before adult moths would normally emerge and mate.

What is SPLAT GM?

SPLAT GM is simply an alternative delivery system for gypsy moth 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?

No. So few of the flakes or SPLAT droplets are applied per acre that they will be hard to find. Pheromone flakes and 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 gypsy moths. Caterpillars of other moths and butterflies will not be harmed.

Since gypsy moth pheromone is safe and effective, why isn't mating disruption the only method used to control gypsy moths?

Mating disruption is not effective in areas with heavy gypsy moth 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 gypsy moth 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 gypsy moth.

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