



Slow · the · Spread

National Slow the Spread of the Gypsy Moth Project

“... Using Tomorrow's Technology for Gypsy Moth Management Today”

STS Bulletin No. 2 - April 2004 (New)

Fact Sheet

Gypsy Moth Mating Disruption

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Pheromones are semiochemicals produced by insects to communicate with one another. In gypsy moths, the females release a sex pheromone when they are ready to mate. This pheromone, called disparlure (chemical name: cis-7, 8-epoxy-2-methyloctadecane), is a potent attractant for the male moths and they respond by following it to the source – the female.



Figure 1. Disrupt® II flakes on oak leaf surface.

In the past decade, technology has been developed to use the pheromone to control recently established gypsy moth infestations. Disparlure is commercially synthesized and loaded into controlled-release dispensers that are applied to the forest canopy using aircraft. The male moths become disoriented because the air is filled with pheromone. The males cannot find the females, which prevents mating and reduces or eliminates the subsequent year's population. This control method, called mating disruption, is effective in controlling low-density gypsy moth infestations that are typically found in the Slow the Spread project area.

There are currently two controlled-release products registered with the U.S. Environmental Protection Agency (EPA) that can be used to disrupt mating between gypsy moths.

- Disrupt® II is manufactured by Hercon Environmental (Emigsville, PA, EPA Reg. No. 8730-55). The pheromone is injected between thin sheets of plastic, and then chopped into small pieces (1/32 x 3/32 inches, see photograph above). Prior to application, the flakes are mixed with a sticker called Gelva (Surface Specialties UCB, Smyrna, GA) to ensure they will stick at all levels in the forest canopy where gypsy moths are found. The plastic flakes slowly release the pheromone into the environment over a 2-3 month period.
- 3M™ MEC (Microencapsulated) Sprayable Pheromone for Gypsy Moth is manufactured by 3M Canada (London, Ontario, EPA Reg. No. 10350-62). The pheromone is encapsulated in small polymer capsules (5-100 μ in diameter) that are suspended in a thick liquid that preserves the formulation. The pheromone starts releasing through the capsule walls soon after the product is applied and continues to release for a period of 6 weeks.

The recommended doses for disparlure are 15 and 6 grams of active ingredient (disparlure) per acre.

- When using Hercon's Disrupt® II the 15 gram dose is equivalent to 85 grams of flakes per acre, which is about ½ cup of flakes. Two fluid ounces of sticker is mixed with the ½ cup flakes and yields approximately 1 or 2 sticky flakes per square foot of canopy area.
- When using 3M's MEC product, the 15 gram dose is equivalent to 2.6 fluid ounces of product mixed with water and applied at a rate of 1 quart per acre

The products used in mating disruption (3M MEC, Disrupt® II and Gelva) do not pose a risk to humans, other animals or the environment.

For more information please contact:

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