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Gypsy Moths

The gypsy moth looms as a serious threat to our landscapes. Unfortunately, the gypsy moth is here to stay and we will never eliminate this pest from North America. We must all learn the facts about this insect. Management of the gypsy moth can be broken down into several categories. Each category has advantages and disadvantages, so a combination of treatments will result in a program with maximum effectiveness.

Biological Methods

Predators and Parasites: Many bird species will consume gypsy moth caterpillars. Encourage birds to visit and nest on your property by planting shrubs for food and nesting cover. Mice, shrews, voles, chipmunks, and squirrels will consume caterpillars. Spiders, ground beetles, and ants also will play a role. Insect parasites exist that attack the eggs, larvae, and pupae. Unfortunately, predators and parasites will not effectively control gypsy moth populations during outbreak situations.

Diseases: Fungal and viral pathogens can be important in regulating gypsy moth populations, but above average rainfall is required during May and June. Populations may not be reduced by disease until after the caterpillars have reached mature size and most of the defoliation has already occurred.

Cultural Methods

Resistance: Avoid planting trees and shrubs favored by the gypsy moth. Caterpillars prefer to feed on oak, alder, willow, and poplar. They will avoid ash, tulip tree, honey locust, and holly. Mix up your plantings; don't plant large groups of a single tree species.

Vitality: Provide your trees with the best growing conditions possible. Mulch the root zones under the tree canopies. Make sure your trees have adequate water and fertilizer to meet their needs. Lightly fertilizing your trees will help them maximize their chances for recovery. It will enable your trees to better tolerate gypsy moth injury and to replace lost foliage with less drain upon their energy reserves.

Reduce Stress: Avoid disturbing the soil through compaction or construction activities. Prune to remove deadwood and to promote new growth.

Mechanical Methods

Vital, healthy trees are still susceptible to attack, but have increased stored energy reserves with which to form new leaves to replace those lost by defoliation.

Traps: Physical removal of gypsy moth adults and caterpillars will be most effective where populations are low. Traps are available to attract and catch adult gypsy moths. These only work against the males and can actually



Left: Defoliation caused by gypsy moth caterpillars; Center: a mature gypsy moth caterpillar; Right: a closeup of an egg mass laid by gypsy moths.

attract more insects onto your property than would have existed otherwise. Their primary benefit is to determine if gypsy moths are present in your area and to estimate their abundance.

Banding: Burlap bands or sticky tape can be placed around trees to capture the caterpillars as they move up and down the tree trunks. The bands should be kept in place from April through mid July. To be effective, any caterpillars or adults caught should be removed and discarded daily. Avoid using petroleum products such as grease or tar. These materials can injure the bark of trees.

Egg masses: Eggs are laid in a tan colored egg mass containing 75 to 1,000 individual eggs. Masses are covered with hairs from the female's body. The covering protects the eggs from drying out and from winter temperatures as low as -20°F. They can be found on almost any object from tree trunks to automobile fenders. Egg laying begins about mid-July and ends about mid-August. The eggs overwinter and hatch during May of the following year. Masses within reach can be scraped from trunks, shrubs, buildings and other objects and destroyed. Remove vines attached to tree trunks because they are a favored spot for egg laying.

As with biological control methods, mechanical techniques will be most effective where gypsy moth populations are low.

Chemical Methods

Chemical methods remain the most effective means for managing severe gypsy moth populations. The amount of pesticide required and the impact on the environment can be minimized with a little forethought and planning. By understanding gypsy moth biology, we can employ the safest materials possible for a given situation.

Bacillus thuringiensis (Bt): New formulations of Bt, a bacterium that kills caterpillars that consume treated foliage, are becoming available and demonstrate increased effectiveness over older formulations. Unfortunately, they become less effective as the caterpillars grow larger. Small caterpillars are more easily killed than larger ones. By treating during the early stages of an outbreak, populations can be reduced to tolerable levels before serious defoliation occurs. Aerial treatments often utilize this material.

Traditional insecticides: New insecticides, are available that greatly reduce the amount of actual chemical required to kill the caterpillars. They can therefore be used at very low concentrations, helping to minimize any environmental effects. Protect beneficial insects by minimizing pesticide applications to only those absolutely necessary. The same chemicals that kill gypsy moth caterpillars can kill the "good" insects that utilize the different life stages of the gypsy moth as their own food source.

The Care of Trees employs either hydraulic sprayers or trunk injection techniques to apply most of our chemical treatments. Aerial applications by government or private agencies, may be possible in some areas. Hydraulic and trunk applications target specific trees for treatment instead of spraying entire communities as do aerial applications. Unfortunately, hydraulic applications do have limitations. The crowns of trees over 80 feet tall are often out of the reach of hydraulic sprayers depending on the weather conditions. Damage may be more severe on the very tops of tall trees because of the inability to reach the foliage with the treatment material. Trunk injections provide another option in some situations. Every technique has advantages and disadvantages. If you have any additional questions or concerns, please do not hesitate to contact your local office for further details.



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