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NF92-82 Gypsy Moth

Mark Harrell
University of Nebraska--Lincoln, mharrell2@unl.edu

Frederick Baxendale
University of Nebraska--Lincoln, fbaxendale1@unl.edu

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Gypsy Moth

Mark Harrell, Forest Pest Specialist
Fred Baxendale, Extension Entomologist

The gypsy moth, Lymantria dispar, is a serious pest of forests, shade and fruit trees, and ornamentals in the northeastern United States. It was brought to the U.S. from Europe in the 1860s to cross it with the silkworm to improve silk production. Some of the insects escaped captivity and became established in the surrounding forest.

Despite efforts to control the insects, the infestation persisted and eventually spread to many northeastern states. Isolated infestations of gypsy moths have also appeared in states outside the northeastern region. These have occurred when egg masses laid on vehicles, outdoor furniture, nursery stock, etc. were carried into new areas.

Although the gypsy moth can cause substantial defoliation that may lead to tree mortality, the greatest public concern often results from the nuisance problems these insects cause. Not only can the caterpillars completely strip trees and shrubs of their leaves, they also become bothersome as they crawl on structures, sidewalks and patios, and the continuous rain of droppings under infested trees can be very messy.

In the early 1980s an infestation of gypsy moths occurred in Lincoln, Nebraska. The insects were found shortly after their introduction, and control efforts are believed to have eradicated the insects from the area. In 1991, gypsy moths were brought into the Omaha area on infested nursery stock. Most of the infested trees have been located and treated or destroyed. Currently, an effort is underway to locate and eliminate any pockets of infestation that may have resulted from this introduction.

Life Stages

The gypsy moth has four stages in its development: egg, caterpillar, pupa, and moth. It has one generation each year. Buff-colored egg masses covered with hairs are laid on virtually any object from tree trunks to rocks to automobile fenders. Egg laying begins around mid-July and lasts about one month. The eggs overwinter and begin hatching in April and May the following year.

Newly hatched caterpillars are about 1/4-inch long and reach a length of 2 inches at maturity. Older

caterpillars are distinctive with a dark body and four pairs of raised blue spots and six pairs of raised red spots along the top of the body. Tufts of brown hair project from the sides.

Caterpillars feed from May through late June or early July, then seek sheltered places to pupate. Cocoons with pupae are typically found under flaps of bark, in crevices, under branches, and in other protected places; but when insect numbers are high, the caterpillars will spin cocoons in almost any location.

Adult moths begin emerging in July. Males are smaller than the heavier-bodied females. They have dark-colored wings with several darker-colored wavy lines and a wingspan of about 1 1/2 inches. They are strong fliers. Females have white wings with dark wavy lines and a wingspan of about 2 inches. Females do not fly, but remain near their pupation sites where they release a scent (pheromone) to attract the males. After mating, each female produces a single egg mass containing up to 1,000 eggs and then dies.

Hosts and Damage

The gypsy moth has a broad host range and feeds on over 300 species of trees and shrubs. Preferred hosts include oak, apple, willow, basswood (linden), birch, poplar, mountain-ash, sumac, blue spruce, and some pines. When population densities are high, caterpillars will feed on almost any vegetation, although they usually continue to avoid ash, sycamore, black walnut, catalpa, mulberry, redcedar, and arborvitae.

Newly hatched caterpillars chew small holes in the surface of the leaves. As they mature, they begin to devour leaves from the edges and may completely defoliate the tree or shrub. As food becomes scarce, caterpillars frequently move from one host to another.

The effects of gypsy moth defoliation depend on the amount of foliage removed, the condition of the tree at the time of defoliation, the number of consecutive defoliations, environmental conditions, and the host species. Healthy broadleaf trees can usually withstand one or two consecutive defoliations without serious problems, but pines, spruces and trees weakened by drought or other stresses may be killed by a single defoliation.

Dispersal

Since the female does not fly, the gypsy moth is spread through the movement of egg masses, caterpillars and sometimes cocoons. Localized spread is accomplished mostly by young caterpillars being blown by wind or older caterpillars crawling to neighboring plants. Long-distance spread usually occurs when egg masses laid on automobiles, campers, trailers, and outdoor furniture are transported by families vacationing in or moving from infested areas.

Gypsy moths also spread through the introduction on infested plant material. Although quarantines and plant inspections are intended to prevent the movement of gypsy moths and other nursery stock pests, small numbers on trees and shrubs can sometimes be overlooked and shipped into new areas.

Control

Gypsy moths can be controlled on individual trees or shrubs with applications of the bacterial insecticide *Bacillus thuringiensis* (B.t.) or carbaryl (Sevin). However, since the insect is still uncommon in Nebraska, and state and federal officials are conducting a program to locate and eliminate any

infestations that may be present, homeowners are asked not to attempt to control gypsy moth infestations themselves. Instead, if you believe you have seen gypsy moth caterpillars in Nebraska, please contact the office of the State Entomologist, Nebraska Department of Agriculture, in Lincoln at (402) 471-2394 or bring or send a specimen to the Douglas County Cooperative Extension Office, 8015 W. Center Rd., Omaha, NE 68124.

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