

Christmas Tree Growers & The Gypsy Moth

by

Cora Gorsuch, District Extension Leader, Gypsy Moth Education Program; Russell Kidd, District Extension Leader, Forestry and Deborah G. McCullough, Assistant Professor, Depts. of Entomology and Forestry

Why should Christmas tree growers worry about gypsy moth?

Xmas tree growers in Michigan have a special reason to be concerned about the gypsy moth. Although gypsy moth caterpillars will feed on most pine and spruce species, defoliation is usually **not** the main problem. Gypsy moth **egg masses** pose a more serious problem for growers who plan to ship their trees out of Michigan.

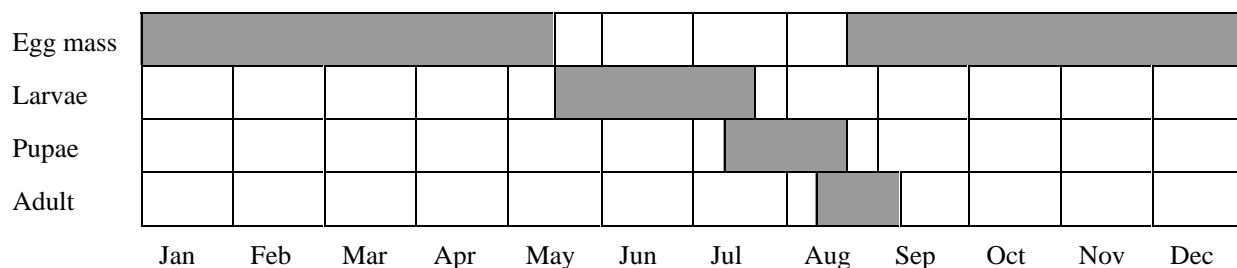
Most of the long-distance dispersal of gypsy moth has occurred when egg masses are unknowingly transported into uninfested areas. Because of this, states that are not currently infested with gypsy moth do not allow nursery stock, plants, trees, logs or other materials that carry egg masses to be brought in. The presence of one or two egg masses has been enough to cause whole loads of Christmas trees to be rejected at state (or Canadian) borders.

Gypsy moth larvae (caterpillars) prefer to feed on oaks, aspens, willow and basswood. Young larvae generally cannot survive on the foliage of conifer trees. However, once the larvae are about half-grown, they are able to tolerate a much wider variety of host trees. Older larvae will readily feed on many Christmas tree species, including Colorado blue spruce, Scotch pine, eastern white pine, and many others.

What should growers do about gypsy moth?

1. **Learn** about the biology of gypsy moth and know what to look for. Be able to recognize all gypsy moth life stages and know what time of year they occur. A variety of publications (many with color photographs) are available and are listed below.
2. **Monitor** Christmas tree fields, especially fields that are near woodlots with oak, aspen or other preferred host trees. Young larvae may blow into Christmas tree fields and older larvae may get into fields as they move about during daily migrations up and down trees. Always keep an eye out for gypsy moth life stages during shearing, harvesting and other management activities. Never miss an opportunity to 1) scout for egg masses and 2) to scrape egg masses off of trees and destroy them.
3. **Become familiar** with regulations and certification procedures required by the Michigan Dept. of Agriculture. Growers should contact their local MDA office to acquire specific information for their area.

Figure 1. Gypsy Moth Life Cycle



Egg masses are often laid on the stems, large branches, and under branch whorls. They are present from mid-August through early May of the following year. Egg masses that are scraped off of trees should be destroyed by burying or soaking in soapy water.

Larvae hatch and begin to feed about mid-May. Young larvae generally cause little damage to Christmas trees. Large caterpillars will be present by mid- to late June, and may cause some feeding damage to conifer trees. More importantly, however, these caterpillars are nearly ready to pupate.

Pupation usually occurs between mid-July and mid-August, depending on weather. If pupation occurs on a Christmas tree, the *adult female* will probably lay her eggs on that same tree. This is because adult female moths cannot fly. Egg masses are often found right next to the large, reddish-brown cocoon where the caterpillar pupated. If you notice male gypsy moth adults flying around Christmas trees during the daytime, there is a good chance that female adults are also present, laying eggs. The non-flying females attract males with a sex pheromone.

How can gypsy moth be controlled?

Gypsy moth caterpillars may be controlled through the regular pest management regimen practiced by many growers. This is especially true for Scotch pine, since insecticides applied to control other insect pests will also kill gypsy moth. Other species, such as Colorado blue spruce, are attacked by fewer insect pests and normally require few insecticide applications. Be especially vigilant about monitoring for gypsy moth in these fields, since there may be less chance to kill gypsy moth caterpillars during the regular management regimen.

Growers should focus control efforts on large caterpillars and on trees ready for harvest. Several different insecticides are registered for use on gypsy moth. Specific recommendations can be obtained from MSU-Extension county offices or Michigan Dept. of Agriculture offices. It is important to note that *Bacillus thuringiensis* (Bt), the material used in most large aerial spray programs, will not be effective on large caterpillars. Bt is effective only when applied to very young caterpillars.

Don't let the GYPSY MOTH interfere with your Christmas tree business! Learn about gypsy moth biology, monitor and scout fields regularly, and know what the regulations are. Knowledge and good management will allow growers to protect their trees and avoid unnecessary insecticide applications.

Reference Material Available

MSU-E Bulletin E-1983 "The Gypsy moth in Michigan: A Guide for Homeowners and Small Woodlot Owners"

MSU-E Bulletin E-2302 "Gypsy moth in Michigan: Homeowner's Guide"

MSU-E Bulletin E-2299 "A Comparison of the Gypsy Moth, Eastern Tent and Forest Tent Caterpillars"

MSU-E Bulletin E-2421 "Using Bt to Control Gypsy Moth"

MSU-E Video VT-33 "Living with the Gypsy Moth in Michigan"

USDA Forest Service Northeastern Area Forest Experiment Station Bulletin NA-FB/P-32, April 1988 "Identifying Gypsy Moth Early Larval Instars"