Gypsy moth is a non-native insect pest that defoliates forest, ornamental, and orchard trees. Its preferred hosts are oak, basswood, willow, Manitoba maple, grey birch, white birch, poplar, apple, tamarack, mountain ash, alder, and hawthorn. Larvae can also attack other tree species, including beech, eastern white pine, white spruce, and eastern hemlock. High populations of larvae affect the aesthetic and recreational value of an infested area. Most healthy trees can withstand a single year of moderate-to-severe defoliation, but two to three years of heavy defoliation can result in branch or whole tree mortality.

**Life Cycle**

Gypsy moths have one generation per year and overwinter as partially developed larvae in eggs. The eggs hatch in the spring and the young larvae, 3-5 mm in length, begin feeding on foliage. As the larvae develop, they feed on the edge of leaves throughout the spring and summer. Male larvae typically go through five instars (growth stages) while the female larvae have six instars. Full-grown larvae are hairy and range in length from 35-90 mm. They have pairs of five blue and six red spots along their backs. Feeding is normally completed by early to mid-July. Sixth instar female larvae are the most ravenous feeders and are often twice the size of full-grown male larvae.

Pupation occurs early to mid-summer in a cocoon in many places including trees, rocks, houses, boats, fences, and firewood. In 13 to 17 days, the moths emerge and mating occurs. Both sexes have wings, but only the males can fly as the female is too heavy-bodied. The male moth is dark brown to beige and the female moth is mostly white. The female lays eggs that are covered with fine brown hairs from her abdomen in masses of 100 to 1000 eggs on tree trunks, branches, houses, fences, and under rocks and forest debris. The adult moths die shortly after mating and egg laying.
TreeAzin® Efficacy
BioForest performed an efficacy trial against gypsy moth in Wisconsin in May 2004 using a TreeAzin dose rate of 3 mL/cm DBH. A post-treatment defoliation assessment was done in July 2004 and showed the non-treated trees had on average 22.0% defoliation, while the trees treated with TreeAzin had on average only 6.8% defoliation. TreeAzin controls gypsy moth populations by inhibiting larval development, therefore, decreasing the amount of foliage consumed. Today, TreeAzin is used by Canadian municipalities such as the City of Toronto and the City of Mississauga for their gypsy moth control programs.

Treatment Timing
BioForest recommends monitoring gypsy moth populations annually and applying TreeAzin once per season at a dose rate of 3 mL/cm DBH, as needed. Treatments target first and second instar larvae and occur post bloom, during or just after egg hatch to inhibit early instar larval development and limit the amount of damage to the tree. Refer to BioForest’s BioSIM maps at www.BioForest.ca as a guide for starting treatments.

About BioForest
Established in 1996, BioForest specializes in innovative product development, and consulting strategies for urban and commercial forest protection. In 2015, BioForest became a subsidiary of Lallemand Plant Care to oversee and develop its Forestry division. BioForest is a Canadian company based in Sault Ste. Marie, Ontario, Canada with a presence in Southern Ontario; Michigan; Missouri; Massachusetts; and Finland. BioForest’s experienced and knowledgeable staff work with clients to create and implement effective pest management and forest health strategies for urban forests, commercial forests, woodlots, cottage properties, municipalities and more.

BioForest is the registrant of TreeAzin®, a systemic insecticide that provides protection against emerald ash borer and other insect pests in Canada and the United States. TreeAzin was developed for treating threatened trees in urban forests and environmentally sensitive areas. BioForest also developed an industry leading microinjection system, the EcoJect® System, used to apply TreeAzin into high value trees. BioForest is the exclusive Canadian distributor of Arbotect® 20-S, a preventive fungicide Macro-Injection treatment against Dutch elm disease, and is the exclusive North American distributor of Rotstop® C, a biological fungicide used to prevent the introduction and spread of Heterobasidion Root Disease (root rot) in pine trees.

BioForest’s purpose is to save trees from invasive pests and disease while having minimal impact on the surrounding environment. Using a science based approach, BioForest is committed to implementing effective pest management and forest health strategies.