

# Leaf Notes

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## THE CASE OF THE DISAPPEARING TENT CATERpillARS

You may be asking yourself: "what ever happened to those caterpillars that used to eat my crabapple and cherry trees every spring. I remember those caterpillars were everywhere and they would even get inside my house." Those caterpillars were Eastern Tent Caterpillars.



Eastern Tent Caterpillars generally attack crabapples, cherries, apples, plums, hawthorns and other small ornamental trees in the spring. They damage the trees by eating leaves, which leads to partial defoliation. Repeated seasons of partial defoliation can impact the vigor of a tree. There are two notable characteristics of this insect: 1) the large tents that are produced in the canopy of the trees, and 2) after the caterpillars are finished feeding, they leave the tree and climb all over everything. During the years from 2005 to 2010, it was very hot and dry and sure enough, every spring, we would see huge outbreaks of these insects all over the Washington, D.C. area. However, over the course of the past three-to-four seasons, we have had wet springs and thus we are seeing less and less of these caterpillars. This decline in Eastern Tent Caterpillar population could be a result of the entomopathogenic fungus *Beauveria bassiana*. This is a fungus that kills these caterpillars. When the weather is not conducive for fungal growth (hot and dry weather as back in 2005 to 2010) the fungus was not

found, or rather, it was not wide spread. But as the weather patterns became more conducive to fungal growth (cooler and wetter weather during the past three-to-four years) the fungus has increased and more tent caterpillars were killed. Over the course of the past few seasons, we haven't seen too many tent caterpillars, but if we begin to get into another period of dry and hot spring seasons, I would expect to see the tent caterpillar's populations increase. Controlling this insect can be extremely difficult due to several factors. One of the difficulties in controlling this insect is that the upcoming spring season weather is unpredictable. Even without a huge population of tent caterpillars last season, we may have an unexpected outbreak this year. Another difficulty about this insect is that our treatments are not designed to remove the large tents that lodged in the trees. The caterpillars form the tents before they begin to feed, and the treatments that are used are not designed to attack the caterpillars inside the tents. The treatment options are designed to either treat the foliage of the plant (that the caterpillars will eat) through a systemic approach, or we need to use a contact insecticide that needs to get on the body of the insect. Also, if the caterpillars are too large, some of the contact products available become ineffective. The nice thing about the treatment options is that the products that control this insect are extremely environmentally safe. The products are designed to only control lepidopteran insects, which means there is very little impact on beneficial insects.

So for now, let's enjoy the wetter weather and appreciate the impact that it is having on one of our most destructive and noticeable insect pests: the Eastern Tent Caterpillar.

## THOUSAND CANKERS DISEASE AND ITS IMPACT ON BLACK WALNUT

Black Walnut trees have been enjoyed throughout history and valued for their many offerings. The Black Walnut can reach heights of 150 feet and can live as long as 200 years. There are 15 different species that can be found worldwide. Walnut is a hardwood valued for its durability and rich color. Its wood has been used to create furniture, cabinets, flooring and even gunstocks. Black Walnut is considered one of the most expensive trees you can grow, based on the price per board foot and for the edible nut it produces each year. However, this prized tree is under attack and needs your help,

as many of these trees are found in your backyards.

Since the 1990's, the western United States has observed the mortality of their black walnut trees. In 2008, the cause of mortality was identified to be the combination of an insect and fungus. This combination has been properly named "Thousand Cankers Disease (TCD)" due to the numerous cankers found on the stems and branches. It was thought that this was an issue isolated to the western species of walnut, but in 2010 TCD was identified for the first time in the native range of black walnut trees in Tennessee. It has since been detected in several eastern states including Maryland.



## THOUSAND CANKERS DISEASE CONTINUED...

Thousand Cankers Disease is spread to walnut trees by a twig beetle native to North America. The beetles carry a fungus on their bodies that is transferred to the trees as they tunnel into the branches or trunk. Once the fungus has been introduced into the tree, it then invades and kills the phloem tissue located just beneath the bark. This creates a small canker or a dead spot in the tree. As the phloem cells are damaged, the tree begins to struggle as it is unable to uptake moisture and nutrients to supply the demands of the trees canopy. Eventually, the flow of nutrients stops and branches and whole trees begin to die. The trees are literally killed by thousands of cankers.

Walnut trees infected with TCD can live for many years before showing symptoms, but once branch dieback is noticed the tree begins to rapidly decline. The first symptom of TCD is wilting and yellowing of leaves in the upper canopy in mid summer. A thinning of the trees canopy from branch and twig dieback follows this. Eventually the tree dies as the tree is girdled by thousands of cankers.

Currently there are no management options for this pest or the fungal disease it carries. Also, future management options will be a challenge as the tree produces an edible nut, which could harbor any systemic chemical treatment. With the known limitations for treatment, it is important to help reduce the spread of the insect by

1) removing infected trees from the landscape and 2) do not move any of the wood outside state lines. If you have a walnut tree and feel it is showing signs of branch dieback or decline in overall health, please inform your Wood Acres arborist so we can inspect the tree and take proper steps in identifying the cause.



## WATER: FRIEND AND FOE

This past year we had record amounts of rain. Although trees and shrubs need water, this over abundance of water can cause problems for trees that are not correctly sited. Excessive water can exclude the air that tree roots need to survive. Even improper irrigation can make water issues worse. Excessively drained soils do not retain water, causing vegetation to experience drought quickly after water irrigation. Poorly drained soils will retain water, leading to root asphyxiation. Rapidly changing water table levels often contribute to tree decline.

There are consequences for too little and too much water. Very high soil water lev-

els can induce soil-dwelling insects to relocate into trees and houses. Plentiful moisture has allowed diseases to flourish that keep some pests at non-damaging levels. But, it has also contributed to greater populations of Japanese beetles, mosquitoes and dragonflies. High moisture at the correct time of year allows diseases to kill a high percentage of Gypsy Moth Caterpillars. A summer drought would kill eggs of Japanese beetles, which require appropriate soil moisture to hatch. When natural factors do not control populations, intervention with pesticides may be recommended.

Large amounts of moisture contribute to large numbers of mushrooms in lawns and planting beds. Fortunately, most of these mushrooms are either mycorrhizae that help trees and shrubs or are saprophytes that only breakdown non-living material. In addition to the mushrooms, less desir-

able fungi have also increased their presence giving trees and shrubs increased pressure from anthracnose, powdery mildew, rusts and leaf spot diseases. The heavy presence of these diseases can result in more frequent symptoms and infections on plant material that would normally be less susceptible.

A notable consequence this past year was the premature leaf drop of cherry trees due to leaf spot fungi. Due to the life cycle of the fungi, it is best treated with fungicide in the spring season before symptoms are apparent.

It is very important to have your certified arborist visit and identify potential or underlying problems of your trees and shrubs. Prevention is always the best path, but even if a problem unexpectedly presents itself, your arborist can share the best options that are available to you.



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