

Identifying Hemlock trees and their enemy, the

Hemlock Woolly Adelgid

HEMLOCK ID:

Before looking for the hemlock woolly adelgid (HWA), you will need to make sure your tree is a hemlock and not another pine tree or conifer species. Hemlocks can be distinguished by their short, flat needles. These needles are only about a half-inch long, and when flipped over, they have two pale white stripes that run from the base to the tip of the needle. You can roll most pine needles between your fingers, but not the flat hemlock needles. If you're still having trouble identifying your tree, you can also look to the cones. Hemlocks have very small cones, about the size of a quarter. All other conifers have substantially larger cones.



It is very important that you correctly identify your hemlock tree because the Hemlock Woolly Adelgid is ONLY found on hemlocks.

HOW ID:

The easiest way to identify HWA is to look at the hemlock shoots, or the newest growth, for white "woolly" masses that look like tiny cotton balls. The adelgid produces this waxy secretion while feeding and will eventually coat its entire body to protect itself from the elements. The females will also coat their egg sacs with this wool to protect her offspring during the winter months. The adelgids feed at the base of the needles, where the needles attach to the woody portion of the shoot. It is often easier to see HWA on the undersides of branches, so you will need to flip the branch over to find HWA.



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Hemlock Treatment Guide

The landowner's HOW-TO:

Save your trees from the

Hemlock Woolly Adelgid



The History of the THREAT

The eastern hemlock is an integral species within the habitat in which it's found. These trees play an important role in forest health by creating cool micro-climates that are critical to the survival of many native species. Therefore, if hemlocks cease to exist in the environment, these species will ultimately perish. Unfortunately, this is the reality we are facing today. Our precious hemlocks are under attack from the **Hemlock Woolly Adelgid (HWA)**.

HWA is a very small insect, similar to an aphid, that sucks the nutrient rich sap from the needles of hemlock trees. This causes the needles to drop, and once a hemlock has lost its needles, the tree will eventually die. *Once a tree is infested with HWA, it will die within 4-10 years!* This pest is an exotic, invasive species that was first detected in Virginia during the 1950s. HWA has now spread throughout the eastern United States and has become a severe threat to the health of many forests.

It wasn't until 2006 when this insect invader was first discovered in Kentucky. Approximately 98% of Kentucky's hemlocks are found in the eastern one-third of the state. In this region, infestations currently occur in 31 counties resulting in decline and mortality.

Hemlock Woolly Adelgid Infestation



Steps to Follow for Treatment

1. Decide if Treatment is Warranted

Hemlock treatment is recommended for landowners who live in, or nearby, counties that are currently infested. The map on the left shows the current known distribution of HWA. If a tree is unhealthy and showing more than 50% decline in the canopy, then treatment is not recommended. *Also, please keep in mind that trees will have to be retreated every four years for protection from HWA to remain effective.* However, chemical treatment is much cheaper than paying to have a tree removed!

2. When to Treat Trees

Trees should be treated during the fall and spring. *In Kentucky, it is most effective to treat HWA from September through the end of May.* Researchers have found that this is the best time of year for hemlocks to absorb the pesticide from the roots.

3. Purchasing Insecticide

Landowners should purchase products that are labeled as tree/shrub insecticides with IMIDACLOPRID listed as the active ingredient. These products can be found at your local agricultural or hardware store or online.

4. Treatment Process

Most products available to landowners are applied as a SOIL DRENCH. Make sure to read and follow the label of the specific pesticide product being used. *The label is the law!*

General treatment guidelines include:

- ◆ Measure the diameter of the tree approximately 4 foot off the ground and follow label directions to acquire the chemical application rate.
- ◆ Mix the insecticide with the recommended amount of water.
- ◆ Clear away leaf litter before application and pour the mixture directly on the soil around the base of the tree.
- ◆ Applications should be done when the soil is moist, but not saturated. Also, do not treat during droughts or when the ground is frozen.

Supplies You Will Need

Remember, SAFETY comes 1st!

You will need the proper PPE or personal protective equipment during treatment application.

You must wear:

Long-sleeves, long pants, shoes + socks, and chemical resistant gloves



Other Necessary Items

1. Chemical Insecticide



There are various brand names on the market in both liquid and granular formulations. Choose the best option for your use and remember to follow the label.

2. Mixing Container



The KDF treatment crew uses 2.5 gallon jugs to mix their chemical, but you can use whatever you have at home, such as a 5 gallon jug.

3. Measuring Container



The crew also uses bottles with clearly marked ounce units to measure the amount of chemical for each tree, but you can use any liquid measuring cup.

4. Measuring Tape or Stick or Logger's Tape

