



Hemlock Woolly Adelgid

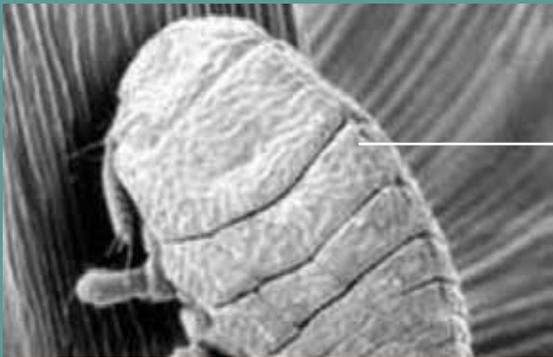
Eastern and Carolina Hemlock Trees



What is Hemlock Woolly Adelgid?

The hemlock woolly adelgid (HWA), *Adelges tsugae Annand*, is a pest that is deadly to forest and ornamental hemlock trees in the eastern United States. Its presence now encompasses most of the eastern states from Georgia to Maine and as far west as Kentucky.

Photo, top left: HWA is less than 1/16th of an inch in size and can vary in color from reddish-brown to purplish-black. **Right:** The damage from HWA can quickly spread, decimating entire wood lots in a decade. **Below, top:** Microscopic nymph shot. **Below, bottom:** HWA is so small you will never see it, but the only thing you can see is the woolly substance covering egg masses.



Biology

All HWA are female and have six stages of development. There are two generations a year, but HWA enters a period of dormancy during the summer months. During cooler periods (October) HWA starts feeding again and continues throughout the winter months as it turns into an adult, laying up to 300 eggs from December to March. Reddish-brown crawlers hatch and attach their piercing sucking mouth parts to new growth at the base of the needles and begin feeding on stored starch in the tree. Eventually, the crawlers begin secreting white fluffy wool which can be seen on the underside of the outermost branch tips of hemlock trees.



Susceptible Trees

HWA develops and reproduces on all hemlock, but only causes damage to eastern hemlock and Carolina hemlock.

Signs and Symptoms

- Woolly adelgid feed on the sap in the needles of hemlock trees, turning them grayish green.
- They can also feed on the sap of newly forming buds, killing them. This prevents the tree from developing new growth.
- The insect is so small that you'll never see it, but what you will see is the white woolly substance covering the egg masses that give hemlock woolly adelgid its name.
- Infested trees will show dieback and eventually die.

Hemlock Woolly Adelgid (HWA) Treatment Strategies



Photo, above: Xytect™ or Transtect™ is applied as a soil drench around the base of your tree.

The treatment strategy for HWA is determined in part by the severity of the infestation.

Newly infested or Preventative Treatment of Hemlocks

The goal of treatment for hemlock woolly adelgid is to stop feeding activity before the insect populations reach a point where significant damage is sustained. Applications of **Xytect™** to the soil will provide up to two years of control of HWA. Treatment can be done at any time of the year as long as the soil is not frozen or saturated.

Therapeutic Treatment of Hemlocks With Heavy Infestations

Hemlocks that are showing dieback of more than 1/3rd of the tree are NOT good candidates for treatment. However trees with less than 1/3rd dieback of their canopy can often be saved. The dead branches will not grow back and can either be pruned or will eventually fall out. Hemlocks with a large population of adelgids are best treated with a combination of two products. Begin by applying a fast moving highly mobile insecticide, like **Transtect™**, to provide a quick kill of the insects*. Follow up by applying a long lasting product like Xytect™ that will protect the tree from reinfestation. Xytect™ moves rather slowly into the tree, often taking up to 90 days, so it is best supplemented with a fast acting product like Transtect™. Transtect™ is only needed one time as the initial treatment. Xytect™ should be applied every 2 years to prevent reinfestation.

**Transtect™ will also control any armored scale pest of hemlocks often found in association with adelgids called the hemlock elongate scale. Xytect™ does not impact this scale.*



DIY Shopping List

Option 1:

**Application Type – Soil drench,
Soil injection**

DIY Product/Equipment Needed

- Transtect™ or Xytect™**
- Measuring or diameter tape
- Gloves
- Soil Drench:* Bucket or watering can
- Soil Injection:* HTI Soil Injection Kit

