

## Least-toxic Control of Hemlock Wooley Adelgid

The hemlock wooley adelgid is an important pest of hemlock trees, which are extensively planted in urban landscapes. The pest was first reported in the eastern United States in the late 1960s – it's origin unknown.

It is a small, aphid-like insect with piercing-sucking mouthparts, which are used to suck sap from plants. For most of its life, it is covered by a white wooly substance that it secretes all over its body. They feed primarily on young branches, causing cessation of tree growth, discoloration and premature drop of needles, the dieback of branches and possible death of the tree in as little as one year.

The females are oval, blackish-grey, about 2mm in length and serve as the overwintering stage. The brownish-orange, very small, oblong eggs are laid in cottony white egg sacs (about 50 eggs per sac) on young twigs from late March to May. The presence of the egg sacs offers the most visible diagnostic evidence of infestation. The eggs hatch into reddish-brown crawlers (nymphs) from early April through early June and begin feeding on the sap of young twigs, maturing into adults in a few weeks. Some of the adults are wingless and remain on hemlock for a second generation, while the winged forms may fly to nearby hemlocks or spruces.

### Monitoring

Infestations can be detected early by periodically examining young twigs for the presence of the egg sacs and the presence of a white cottony scale on the hemlock branches. Egg sacs are readily observed in the spring before the eggs have hatched. Keep in mind that remnants of old egg sacs may remain on twigs long after the eggs have hatched and the insect has been controlled. Early detection is very important because injury to hemlock may develop quickly.

### Control

Proper timing is key for control of the hemlock wooley adelgid.

- **Horticultural oils and insecticidal soaps** have shown to be very effective when sprayed during susceptible life stages. 100% mortality was obtained by both materials when sprayed in mid-July (when all individuals were present as dormant nymphs) and in late October (after the nymphs had resumed development). Both of these materials are of relatively low toxicity, but will kill a wide variety of insects and mites, including those that are beneficial. They should only be used when the adelgid is present in damaging numbers.

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## **References**

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