



Chinese Hemlock in the Urban Landscape— An Alternative to Eastern Hemlock

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Background

Eastern hemlock (*Tsuga canadensis*) is an important native forest species that provides many ecosystem services including shelter for wildlife, protection against erosion and shade for forest streams. Additionally, thanks to its shade tolerance, threshold for shearing and attractive form and texture, eastern hemlock has also been used as a popular landscape tree and hedge planting. Unfortunately, an invasive insect pest known as the hemlock woolly adelgid (HWA) (*Adelges tsugae*) appeared in the northeastern US in the mid-1980s causing widespread decline and death of local populations of eastern hemlock.

Resistance to Hemlock Woolly Adelgid

In September of 2003 seven species of hemlocks from the US and Asia were established at Lasdon Park & Arboretum in Katonah, NY. This study was initiated in an effort to identify a hemlock species that would both tolerate the growing conditions of the Northeast and demonstrate host-resistance to HWA. Based on this research, Chinese hemlock (*Tsuga chinensis*) demonstrated both excellent survivability – 94% or 17 out of 18 of the initial specimens are still alive and growing well – and 100% host-resistance to HWA as of May 2012. Chinese hemlock was also noted to share some aesthetic similarities to eastern hemlock including attractive, dark green foliage and a prominent weeping leader. These traits along with its tolerance to shade make it especially promising as a substitute for eastern hemlock in the urban landscape.

Other Pests of Chinese Hemlock

The interaction of other arthropod pests of importance (e.g. spruce spider mite, hemlock looper, scale insects) with Chinese hemlock has yet to be formally researched. According to one source, it may be a less suitable host for spider mite populations. It has been reported to be susceptible to another invasive insect pest found to infest eastern hemlock: elongate hemlock scale (*Fiorinia externa*) (EHS), as is eastern hemlock. EHS, however, does not appear to be as widespread or as damaging to eastern hemlock as HWA.

As with any ornamental plant, regular monitoring/scouting is essential in evaluating plant health and determining if pest populations are present. Should an insect pest like EHS occur on a Chinese hemlock in the landscape, local research has also demonstrated autumn applications of 1% or 2% horticultural oil (a commonly-used, reduced-risk insecticide) to be compatible with this tree.

Caring for Chinese Hemlock

Although there is little information available regarding the proper watering and fertilizing of Chinese hemlock, informal observations of this tree throughout the research trial at Lasdon Arboretum indicate that it is a low maintenance plant. Expectations are that it only requires supplemental fertilization on extremely nutrient deficient sites or additional water only in extreme drought.

What does Chinese Hemlock look like?



Figure 1. Chinese Hemlock form.



Figure 2. Chinese Hemlock foliage.



Figure 3. Eastern Hemlock form.



Figure 4. Eastern Hemlock foliage.

Finding Chinese Hemlock

Cooperative Extension Horticulture Staff have reached out to local nurseries in Westchester County, NY about their research findings pertaining to Chinese hemlock. With increasing consumer demand, nurseries may choose to make more of these trees available. The specimens established at Lasdon Park & Arboretum were obtained from a nursery in the Pacific Northwest.

Sources:

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