

Hemlock Landscape Management

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Abstract

Hemlocks are widely used as landscape trees as they keep their foliage year round. Landscape hemlocks are easily stressed by heat and lack of soil moisture during the summer. They will not withstand air pollution and are susceptible to salt damage. Adelgids, spider mites, scales and borers are all common pests of hemlock. Hemlock woolly adelgid (HWA) is a new and devastating pest of hemlocks but can be managed using insecticidal sprays.

Key words:

Landscape, eastern hemlock, pyrethroids, Merit®.

Introduction

Hemlocks are widely used as landscape trees because they maintain foliage year round, are shade tolerant, and withstand heavy shearing. The common hemlocks found in North American landscapes include: eastern (Canadian) hemlock (*Tsuga canadensis*) - the most commonly planted species is excellent for screening, groupings, accent plantings, and foundation plantings; Carolina hemlock (*Tsuga caroliniana*) - recommended by some experts as more adaptable than eastern hemlock for use under urban conditions, and western hemlock (*Tsuga heterophylla*) – this species is adapted to areas with a moisture laden atmosphere and cool summer temperatures.

Hemlocks prefer cool, moist sites. In forest settings they are found along streams and the edges of bogs and swamps, or on steep northward facing slopes. Forest stands of eastern hemlock tend to develop protective microclimates because of their dense canopy, dense shading, deep duff layer, and subsequent retention of moisture and uniformly low temperatures. Hemlocks do not thrive under hot, dry conditions. Landscape hemlocks are easily stressed by heat and lack of soil moisture during the summer. Watering during dry spells and mulching to a depth of four inches is recommended. Hemlocks grow well in partial shade and will tolerate full shade. Hemlocks also grow well in full sun if their soil requirements are met. They will not withstand air pollution because of its root system's ability to retain macro and micronutrients while keeping forest/water bacteria counts at low levels. A tree that is a foot in diameter does as much as \$4,000 worth of water purification. Hemlock would be a choice tree for watershed managers.

Hemlocks are impacted by adelgids, spider mites, scales and borers. Hemlock woolly adelgid (HWA) is a fairly recent and devastating new pest that can be controlled, but if left undetected can kill large trees in as few as three years.

Management Options

Infestations of the HWA can be detected early by periodically examining young twigs for the presence of egg sacs. They 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. HWA can be managed using a variety of approaches. Insecticide sprays are generally effective against all stages of this insect. Recently, pyrethroids, such as bifenthrin and permethrin, have received extensive use. Soil applied Merit[®] insecticide is highly effective against hemlock woolly adelgid. Applications may be made at any time that the soil is not frozen or saturated with water. A single application will usually control adelgid for 18 months. Horticultural oil and insecticidal soap have been found to provide excellent control. Both insecticides kill only by direct contact and thorough coverage is essential for control. These products also will simultaneously control scale insects and mites. Spring is the preferred time to apply oil to diminish chances of needle glaucous bloom loss and oil injury.