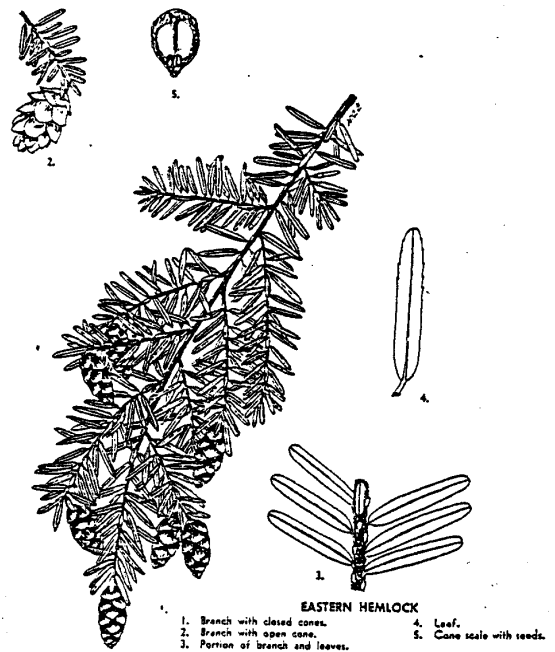


Hemlock

Hemlocks are widely used as landscape trees because they keep their attractive foliage year round, they are shade tolerant, and they withstand heavy shearing. The common hemlocks found in North American landscapes include the following:

Eastern (Canadian) Hemlock (*Tsuga canadensis*) - The most commonly planted of the hemlocks, this 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 city conditions. Appearance and uses are similar to Eastern hemlock.



Western Hemlock (*Tsuga heterophylla*) - This species is adapted to areas with a moisture laden atmosphere and cool summer temperatures.

The hemlocks generally require well drained, cool, acid soils. Uniformly moist soil conditions are important. This is best achieved with mulches in most landscape situations. Hemlocks do not thrive under hot, dry conditions. They 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 and are susceptible to salt damage.

The common pests of hemlocks include the following:

1. Hemlock Woolly Adelgid - A sucking insect that is highly damaging to most hemlocks, this species was accidentally introduced into North America in the early 1950's. Adelgids are capable of killing Canadian hemlocks within 3-5 years.

2. Mites - Several species, including the spruce spider mite and the hemlock rust mite, commonly damage hemlocks.
3. Scales - The elongate hemlock scale and hemlock scale are serious pests of hemlocks. Both scales feed on the needles by removing cell fluids through piercing and sucking mouthparts. This causes foliage to discolor and drop prematurely and branches to die. Heavy infestations often kill hemlocks within 10 years.
4. Root Rot - Many soil fungi attack stressed hemlocks, particularly on poorly drained sites. Properly applied soil drenches can reduce damage by *Phytophthora* root rot.
5. Hemlock Looper, Gypsy Moth, and other Caterpillars - These pests defoliate hemlocks and are serious pests when outbreaks occur.

Recommended Monitoring for Hemlock

Timing	Treatment
Early Spring	Sample soil for nutrient and pH levels. If plants exhibit decline, sample roots or root collar for <i>Phytophthora</i> root rot and nematodes. Apply horticultural oil for overwintering pests such as adelgids. Excavate mulch from root collars. Add additional mulch to root zone as needed. Apply fertilizers and soil treatments to adjust pH on an as-needed based on soil test results.
Mid Spring	Monitor and treat for woolly adelgids, mites caterpillars and scale.
Late Spring	Monitor and treat for woolly adelgids, mites caterpillars and scale. Inspect irrigation and soil moisture levels to reduce moisture stress and prevent root disease. Inspect mulch levels and adjust as necessary.
Early Summer	Monitor and treat for woolly adelgids, mites caterpillars and scale. Inspect irrigation and soil moisture levels to reduce moisture stress and prevent root disease. Inspect mulch levels and adjust as necessary.
Mid Summer	Monitor and treat for woolly adelgids, mites caterpillars and scale. Inspect irrigation and soil moisture levels to reduce moisture stress and prevent root disease. Inspect mulch levels and adjust as necessary.
Late Summer	Monitor and treat for woolly adelgids, mites caterpillars and scale. Inspect irrigation and soil moisture levels to reduce moisture stress and prevent root disease. Inspect mulch levels and adjust as necessary.
Fall	Monitor and treat for woolly adelgids, mites, caterpillars and scale. Ensure adequate soil moisture levels prior to onset of winter to minimize injury. Remove any mulch from stems to reduce risk of disease and rodent injury. Inspect plant for evidence of deer browse. Make soil applied insecticide treatment to reduce next year's problems with sucking insects. Prune out injured or cankered branches.