

# Canadian Hemlock

## *Tsuga canadensis*

Alex X. Niemiera, Associate Professor, Department of Horticulture

### Summary:

Foliage: About one-half inch long needles; evergreen

Height: About 60 feet

Spread: About 30 feet

Shape: Conical with nodding apex and branch tips

Main features: Canadian hemlock is a large very beautiful and graceful conifer native to moist forests and stream banks of the Appalachian Mountains. Unlike most other conifers, it is shade tolerant but will tolerate full sun. Given appropriate conditions (well-drained moist soil and only minimal exposure to drought), this species makes a superb large landscape tree with only one exception. That exception is the hemlock wooly adelgid, an exotic insect pest, that is killing and weakening trees in native habitats as well as in landscapes. This adelgid has infested trees in over half of the hemlock's native range, the Appalachian Mountains and adjacent areas (Hemlock Wooly Adelgid Infestations 2008); its spread is unimpeded and all our hemlocks are in peril. This pest can kill a tree within 4 to 10 years; it can also weaken a tree to the point that it becomes vulnerable to other insects and diseases. There are two control strategies for landscape Canadian hemlocks: 1) spray with a horticultural oil (at prescribed times). This is the least expensive and quite effective. 2) Inject the soil or tree with a systemic insecticide; this method is also quite effective, lasts for one to two years, but is relatively expensive. Consult the Virginia Pest Management Guide – Home Ornamentals: Insects of Trees and Shrubs for recommendations (see References section). In the case of large trees, one will have to contact a certified arborist with the necessary equipment to effectively reach all parts of the tree. Before planting Canadian hemlock, one must factor in the price of regular tree spraying as part of the required inputs for this species.

### Plant Needs:

Zone: 3 to 7

Light: Full sun to full shade

Moisture: Moist to average (avoid drought)

Soil type: Well-drained with ample organic matter

pH range: Acid to alkaline

### Function:

Canadian hemlock is suitable as a specimen plant, in mass, in borders, and can be pruned as a hedge.

### Care:

If planted in the appropriate site (moist, well-drained soil) with sufficient space, then no care is needed with the exception that one must scout for hemlock wooly adelgids. If adelgids are detected, then control measures must be enacted (see Main features section). Before planting, one must factor in the price of regular spraying as part of the required inputs for this species.

**Additional Information:**

There are numerous cultivars of Canadian hemlock. One can find all sizes, forms (pendulous, mound, conical, prostrate), and variegated clones; dwarf forms range from miniature (grows less than one inch per year) to large (grows less than one foot per year). Consult conifer texts or web sites for descriptions and photos. Carolina hemlock (*Tsuga caroliniana*), a handsome species but less available in the nursery trade, is also susceptible to the hemlock wooly adelgid. Apparently, some Asian species of hemlock such as the northern Japanese hemlock (*T. diversifolia*) and the southern Japanese Hemlock (*T. sieboldii*) are resistant to the damaging effects of the adelgid (but adelgid can be found on them).

**References:**

Hemlock Wooly Adelgid Infestations 2008

[http://dnr.wi.gov/forestry/fh/exotics/wooly\\_adelgid.pdf](http://dnr.wi.gov/forestry/fh/exotics/wooly_adelgid.pdf)

The Virginia Pest Management Guide – Home Ornamentals: Insects of Trees and Shrubs

[http://pubs.ext.vt.edu/456/456-018/Section\\_4\\_Home\\_Ornamentals-4.pdf](http://pubs.ext.vt.edu/456/456-018/Section_4_Home_Ornamentals-4.pdf) page 9