PESTS AND DISEASES OF THE EASTERN WHITE CEDAR

(Thuja occidentalis)

One of the most popular ornamentals used in landscaping is the eastern white cedar, *Thuja occidentalis* a hardy native species of North America. Cedars are used in hedges, foundation plantings and as accent plants. Cedars are usually dense, pyramidal, small to medium size evergreens, but many cultivars of different form, size, and with varied foliage colour are available. Cedars grow best in neutral to alkaline, fertile, moist, well-drained soils, but will also tolerate wet or dry sites. The species has a slow to medium growth rate, and is shallow rooted. The eastern white cedar, if balled and burlapped, can easily be transplanted at almost any time of year. Cedars grow best in full sun but will tolerate some shade. In heavily shaded areas their foliage will become loose and open.

The following is a brief description of the more common disease and pest problems encountered on eastern white cedars:

**Spider mites** - The most common mite that attacks cedar, is the spruce spider mite, *Oligonychus ununguis*. Mites suck sap from cedar foliage, and initially cause a slight yellowing of inner foliage. Severely affected foliage develops a bronze sheen. Damage often goes unnoticed until mite populations are high. Mites spin a fine, silk webbing over the foliage, which tends to trap dust and debris. Mites overwinter as eggs on the foliage. Depending on the season, mites may have 5-8 generations per year. The development of mite infestations is favoured by hot, dry conditions. Periodic hosing down of cedars with a strong spray of water from the garden hose will greatly reduce the mite population. Chemical controls are outlined in OMAF Publication 64 “The Gardener’s Handbook”. White cedar can be sprayed in late April, before bud break, with dormant oil to control overwintering mites. Dormant oil should be applied in the morning of a mild day so that spray dries before evening. During the growing season, a treatment with a pesticide such as insecticidal soap will control mites. A second application, 7 days later, could be necessary for adequate control. **As with all pesticides, check the label before application for precise information on pesticide use.**

**Cedar leafminers** - Cedar leafminers are tiny moths native to Canada. Damage is caused by the small larvae feeding within the scale-like leaves of cedar. An infestation is usually first noticed in the spring when the tips of some branches begin to bleach and brown. Heavy infestations can cause severe thinning of the foliage. The presence of small pink or green larvae, exit holes, hollowed out leaflets, or particles of excrement within the hollowed out areas, are confirmation of damage by the leafminer. The larvae overwinter within the scale-like cedar foliage, and resume feeding in the spring. Pupation occurs in late May and June, with adult emergence occurring throughout June and early July. The moths mate and lay their eggs under leaf scales of new foliage. There is only one generation per year. Cedars can withstand considerable injury from leafminers before significant damage occurs. In most years, control will not be necessary. If need be, efficient control of the leafminer on small ornamentals may be accomplished simply by pruning out and destroying infested branches before the moths emerge. If damage is severe, systemic or contact insecticides can be used.

**Northern cedar bark beetle** - The northern cedar bark beetle, *Phloeosinus canadensis*, attacks weakened, recently transplanted, or dying cedars. Often the first symptom of attack is the thinning and drying back of the foliage. Closer inspection, however, would reveal minute holes approximately 2mm in
diameter in the bark of the trunk and the branches. Branches, as small as a diameter of 1 cm, can be attacked. Eggs are laid closely spaced in deep niches in the wood. Both larvae and adults can damage cedars. Larvae feed within the cambium layer and can girdle the branches and the trunk. Adult beetles feed on bark. The presence of bark beetles often goes undetected until populations are high and irreparable damage has been done. There are no chemical controls for bark beetles. Healthy cedar trees and shrubs are usually not attacked. Hence, maintaining cedars in good condition will greatly reduce the chances of an infestation developing. Infested shrubs should be removed, as these are sources for further bark beetle spread.

**Shoot blight** - Cedars are susceptible to a shoot blight caused by the fungus *Pestalotiopsis funerea*. This fungus has been associated with tip blight, twig dieback, and stem cankers, on a variety of hosts. Infections on cedars usually start at the tips of the foliage and progress toward the trunk. *Pestalotiopsis funerea* is common on foliage damaged by freezing, sunscald, and other environmental factors. As it is usually a secondary invader, maintaining cedars in a healthy condition will prevent or minimize shoot blight development.

**Autumn browning** - Cedars bear tiny, scale-like leaves on branchlets. Many of the oldest branchlets, those toward the inside of the tree, become a light tan-brown in the fall, and are shed. This is a natural process. Some of the outside foliage may also be shed. Cedars stressed by diseases, pests such as spider mites and northern cedar bark beetle, and environmental factors will show a more severe discolouration than healthy trees. Some selected cultivars maintain a good dark green foliage colour in all seasons.

**Winter drying** - Cedars are susceptible to winter desiccation when water loss through foliage transpiration cannot be replaced by roots in frozen soil. The symptoms are often not evident until spring when the yellow to dark brown desiccated foliage presents a sharp contrast to the new emerging growth. Winter burn, as it is also called, is more pronounced on exposed trees and on the sides of shrubs facing highly reflective surfaces (eg. white siding). The desiccated, straw-coloured tips of affected foliage do not produce new growth in the spring.

**De-icing salt** - When deposited on cedar foliage, wind driven salt sprays retard growth, cause foliar browning, tip burn, bud death, twig dieback or the death of an entire tree or shrub. This is a problem on cedars planted near busy roads with high-speed traffic. Symptoms of salt injury appear in late winter and intensify in early spring, their development being delayed by the cold weather. Also in spring, salty melt water can burn the roots. With successive years of injury, branches lose foliage and die. Damage is more pronounced on the sides of cedars exposed to the road.

**Animal injury** - Cedar foliage can develop a dark brown or black, burned appearance when exposed to animal urine. A strong odour is often associated with the damaged foliage. Plants located at the ends of hedges, or corners of houses, or which stand alone, are more likely to be affected.

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