



## Prince Edward County Master Gardeners

### Browning of Evergreens

My article on the response of plants and trees to last winter's ice storms and cold did not address the increase in browning or reddening (rusting) of foliage on evergreen trees. Recent questions have brought that issue to the fore.

Evergreens are always vulnerable to a certain amount of browning during the winter that generally, but not always, improves during the spring and summer. Generally the concern is around the unsightliness, particularly when the browning seriously affects the symmetry of the tree. The two causes that are always prevalent are labeled 'winter drying' and 'winter burn' in a University of Nebraska online publication. Previous drought can increase the severity of both causes of damage.

Winter drying is more damaging to evergreens than deciduous trees because they do not shed their foliage before the onset of winter. According to Nebraska U, winter drying is caused by the warm dry winds that blow in late winter. The still frozen soil prevents the tree from accessing moisture stored in the tree itself and in the surrounding soil. While the browning process starts then, the actual browning is not visible until spring. Minor damage causes browning of some foliage while major damage consists of the death of branch tips and can go so far as to kill whole branches and even trees. The side exposed to prevailing winds is the most damaged by this type of drying.

Winter burn, again more damaging to evergreens than deciduous tree, is described as freeze damage that occurs on days with rapidly changing temperatures, rising during the day and falling sharply at night. Winter burn is more common on the south side of the tree where there is more exposure to sun particularly in the winter. Trees usually recover in the spring as healthy growth covers the damaged parts of the tree. Severe cases can cause similar damage to winter drying.

'Sunscald' that is also called 'sun burn' can also be a cause of browning of evergreens. It has similarities with winter burn in terms of causes and effects but also some differences. It also, from my perspective, provides the best explanation for the browning of many evergreens that became evident this spring. Sunscald is described as occurring on all sides of a tree with the exception of the north side. Cedars are said to be the most susceptible, but most genuine cedars are found in County gardens rather than in the woods as we lost most of our white cedars to early settlers who needed the cedars for a number of uses including rail fences.

The significant differences between the causes listed for winter burn and the causes listed for sunscald is the presence of snow and the reflections off the snow that results in the browning. Rather than the south side being the most affected, the only side unaffected is the north side where no sun shines. Further the browning will be found largely above the snowline. Snowdrifts that lasted for most of the winter were common this year and many local trees and shrubs show evidence of browning above the snow level and browning on more than just the south side.

While labelling and descriptions of causes can be helpful it is remediation and prevention that is most useful to the gardener. Fortunately the solutions to all of the problems are similar.

In tackling the problem this year now is the best time to be pruning back the browned tips. The time

elapsed since the problem was spotted has allowed time for rejuvenation of those parts of the tree that were still alive under the brown. In cases where pruning off the brown parts would leave the tree badly misshapen or with bald spots it is better to leave it there to see what further parts might rejuvenate or begin to be replaced later.

On yews and junipers prune the branches as needed. With white cedars remove the 'leaves' and leave the branches in place. You can apply bone meal and compost around the base of the tree once or twice during the summer to support the new growth.

Water these trees unless there is an adequate rain fall (10mm) once a week. If you think in terms of this amount of rain, multiplied by the area covered by the branches of the tree, you are thinking in terms of buckets and not a quick spray of water for larger shrubs and trees. Watering these trees heavily in the late fall before the soil freezes is particularly important in protecting them from future damage, but keeping the tree watered adequately during the growing season is a necessary step as well.

During a winter with significant snow, low shrubs can be gently covered with snow. Taller shrubs and trees can be protected by burlap either by wrapping or through construction of a burlap fence on the vulnerable side or sides.

When planting new evergreens choose species that are hardy in the area. Plant trees in a spot that is protected from winter sun and wind. Where possible choose areas with deep, well drained soils.

While evergreens can develop browning as a result of winter exposure, there are other causes of browning of evergreens that cannot be addressed now but they are unlikely to have turned up this spring for the first time. Rather the browning is part of an ongoing process.

Winter sunscald can also affect deciduous trees but in these cases it is the bark that is affected. It may darken and become sunken and can split leaving the tree open to insects and diseases. Apple trees and maples are among the vulnerable trees. The splits occur on the south and west sides of the trees. Loose bark along the ages can be removed with a sharp knife. The trunk can be wrapped in tree paper in the fall to protect the trunk. If the split is particularly large a tree arborist should be consulted.

Unfortunately the damage from last winter continues to manifest itself in different ways. Fall preparations of gardens before winter commences will require new tasks this year.

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