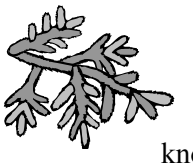
Unique Garden Centre

EVERGREEN BROWNING

Evergreens turn brown for a number of different reasons and not all of them mean trouble. Natural needle browning and loss occurs every year in the fall and is not a cause for alarm. (see info sheet Evergreen Needle Loss) How your evergreen browns will usually tell you what problem you are experiencing.

Winter Color

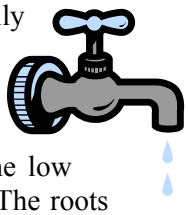


Many evergreens turn a different color in winter. This is a temporary condition response to winter temperatures. In the spring, normal green will return to the leaves (needles). Several types of spreading junipers turn shades of purple in the fall adding winter interest to the landscape. Some pines have been known to turn a lighter shade of green almost yellow.

Winter Browning

Prairie winters can be very difficult for evergreens to survive without damage from desiccation (drying), sunscald and/or cold temperature damage. The plant variety, soil drainage and quality, site location and most important, environmental conditions of the previous summer and fall are the main factors contributing to evergreen winter damage.

Symptoms: The needles yellow then turn brown and the tree appears scorched and is usually first noticed in spring. Young trees, plants in a more exposed location and plants facing south and west which are subject to sun flare from snow in February and March, are more susceptible to winter browning.



Causes: (a) Winter drying of needles will occur in abnormally warm winters because the low humidity and the strong drying winds draw moisture from the leaf which is not replaced. The roots and stems have some reserve moisture but once exhausted, cannot be replaced since the roots are dormant. On warm, sunny winter days, radiation from the sun or reflection from snow (and light-colored buildings) can increase leaf temperatures significantly over air temperatures. The moisture in the stems and branches becomes exhausted because of the increased loss triggered by the warmer temperatures. (b) Plants showing only moderate spring damage, but later in spring or summer suddenly turn completely brown and die is a result of roots damaged by dry conditions and cold.

Care: Maintaining evergreens in good health is the best defense. This reduces the opportunity for damage to occur. Avoid watering between August 15th and leaf drop of deciduous trees, so that proper hardening up can occur. Then give evergreens a slow, thorough watering to fully hydrate the plant system in preparation for winter. This protects roots from freeze drying. Dry soils are more likely to predispose roots to damage than soils that contain a good moisture supply and may be worse during winters with little snowfall. Spray evergreens with an anti-transpirant such as Wilt-Pruf to reduce the degree of moisture loss through the foliage. Stake around small or young trees and then wrap around the stakes with burlap, to protect from the winds and reflective sun. Fertilize in spring – never in fall as it can impede the evergreens ability to prepare for dormancy.

Spring Frost

New evergreen growth is soft and is easily damaged by a late spring frost. When this happens, the new growth with droop, turn brown and die. Previous years growth is generally not affected and will set up with new buds for next year. As a result of the damage the plant may become misshapen. Reshaping can usually be done with pruning.

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Salt Damage

Winter browning due to drought is often confused with or influenced by salt damage. There are two general types of salt injury.

- Caused by direct contact from road salt.
- From excessive salt in the soil.

Road salt is a major problem in the urban setting where there are a lot of roadways and salt is routinely used. The salt water spray from the roads will cause the needles to brown from the tips downward. Sprayed needles shed and if sprayed repeatedly or with copious amounts of salt, the branches become barren and die. Damage is restricted to contacted areas and is therefore more severe on the side closest to the road and above snow level. Run off from road salt in the spring can be damaging to the soil as well.

Salt damage can be prevented by planting evergreens at least 10 m from salted roadways or by placing barriers around trees planted closer. Washing salt off trees in the spring may be somewhat effective in reducing the extent of injury to a sprayed branch

Salt in the soil retards growth and if excessive the soil becomes toxic to evergreens (and many other plants). Some soils have naturally high salt levels but others have artificially raised levels. Our Saskatchewan prairie soils often have a high saline content naturally so even low amounts of added salt from roads etc can be devastating to plants. Evergreens along sidewalks where salt is used to melt snow, around feedlots and septic fields are often damaged by higher saline levels in the soil. Even plants near the foundation of buildings on the prairies are at higher risk

Pruning Damage

Pruning evergreens is common to improve shape or control size and density. This is done by pruning off the tips of the new growth or candles. Visible damage is common when the new growth tips are pruned with pruners, damaging the new needles at the cut site causing them to brown. This result can be prevented by pinching the stem off at the base of the needles. See diagram.

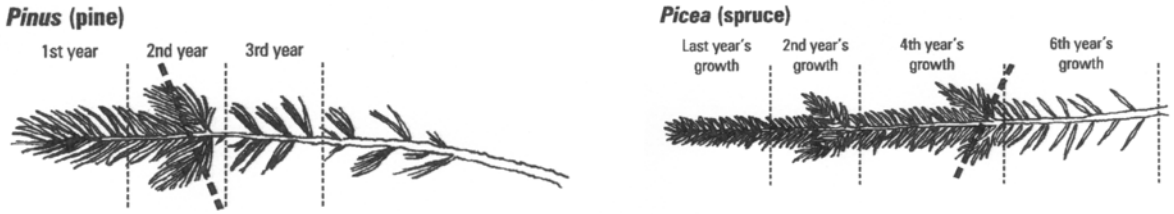

Figure 1. Pruning new growth on spruce and pine.

Animal Damage

Dog urine will turn the foliage of lower branches yellow, then dark brown or black. Juniper and cedars are especially susceptible to this type of damage. Rabbits, mice, deer and porcupines will debark trees and branches. Deer also eat the foliage of coniferous trees, especially cedars, and disfigure them. The partial removal bark can cause foliage to die on one side of a specimen. Complete girdling of the bark will kill trees. The foliage of trees debarked in summer suddenly turns brown. If rodents have fed on bark during the winter, foliage will turn yellow and brown the following spring. Sap sucking birds peck holes in horizontal rows on the trunk and larger branches of trees. These holes will cause stress to the tree. Wounds from these sap sucking birds also provide entry points for disease.

Herbicide Damage

Evergreens may be damaged by the improper or careless application of herbicides. Symptoms range from the minor distortion of needles and twigs to complete defoliation and rapid death. The degree of damage is influenced by the type of chemical used, application rate, temperature and wind. Evergreens are the most sensitive in spring when new shoots are growing rapidly. The plants become fairly resistant to growth regulator herbicides (2,4-D) once the annual growth has hardened off.

Pre-emergent herbicides and soil sterilants or any chemical that works in the soil can be absorbed by large tree roots up to 30 meters away.