Winter Injury of Evergreens

Browning of evergreens in the spring is often a sign of winter injury. Since evergreens keep their needles all year, they lose moisture continuously and can easily become too dry.

Symptoms

Symptoms of winter injury will vary depending on the type of evergreen and the severity of the damage. Damage is usually more severe on plants in exposed locations and on branches above the snow line.

The most common symptom is the needles turning a light tan or reddish brown color. On pine and spruce, the discoloration occurs at the tips and moves down the needle. Branch tips of junipers and cedars (arborvitae) may be killed. The scalelike leaves of the cedars look pale and bleached when damaged.

If the injury is severe, the plant may lose most of the needles on one side or over the entire plant.

Cause

Winter browning is most often caused by rapid temperature changes, above average temperatures and warm dry winds. During the winter months, needles continue to lose moisture. The evergreen is not able to replace this moisture because the ground is frozen. Plants on the south side of buildings or in exposed areas are more prone to injury.

Cold temperatures alone generally do not injure plants. Damage usually occurs when temperatures fluctuate excessively or rapidly. Above average temperatures may also cause damage by breaking the dormancy of plants. The warm dry

winds experienced during the winter months increase the amount of water lost from the needles. Winter injury is common in areas affected by Chinooks.

Control Since the weather can t be controlled, total prevention of winter browning is difficult. But proper maintenance of trees and shrubs and planting species hardy for the area will do a lot to minimize the damage.

- Plants should be adequately watered throughout the growing season. Trees and shrubs require a minimum of 50 millimeters (2 inches) of precipitation per month during the growing season.
- Reduce the amount of watering in late summer (mid August until late September), so that proper hardening off can occur. Then, give plants a good watering just before freeze-up.
- Mulching will increase moisture retention and prevent alternate freezing and thawing of the soil. Mulches should be pulled away from tree trunks in the fall to allow the plants to harden properly.
- Do not apply excessive amounts of nitrogen fertilizer in late summer and fall. This will promote succulent growth that may not mature before winter.
- Avoid poor planting locations. Planting cedar (arborvitae) on the south or west facing sides of buildings and fences is not recommended.
- Plant species adapt to our conditions. The Alberta Horticultural Guide, produced by Alberta Agriculture, Food and Rural Development, lists hardy woody ornamentals.

Evergreens showing signs of winter injury should be well watered as soon as the ground thaws. A light fertilization will help to stimulate the plant but should be applied only after there are signs of new growth. Injured trees are slow to begin growth, therefore pruning should wait until you are sure which branches are dead.