



Winter Injury to Evergreens



Juniper with winter dieback

Discoloration of evergreen foliage during winter may be caused by:

- Winter sun and wind cause excessive foliage water loss while the roots are in frozen soil and unable to replace lost water. This results in desiccation (drying out) and browning of the plant tissue.
- Bright sunny days during the winter warms plant tissue, which in turn initiates cellular activity. Then, when the sun sets or goes behind clouds, foliage temperature can drop, injuring or killing the foliage.
- Bright, cold winter days destroy chlorophyll in the foliage. The chlorophyll does not re-synthesize when temperatures are below 28 degrees. This results in a bleaching of the foliage.
- Cold temperatures occurring early in the fall before plants have hardened off completely or in late spring after new growth has occurred can result in injury or death of this non-acclimated tissue.

Leaf damage normally occurs on the south, southwest, and windward sides of the plant, but in severe cases it may affect the whole plant.

Yew, arborvitae, and hemlock are most susceptible, but winter browning can affect all evergreens. New transplants or plants with succulent, late season growth are particularly sensitive.

How to reduce evergreen winter injury

- Plant evergreens such as yew, hemlock, and arborvitae on north and northeast sides of buildings or in areas protected from wind and winter sun.
- Prop pine boughs or Christmas tree greens against or over evergreens to protect them from winter wind and sun, and to catch more snow for natural protection.
- Construct a barrier of burlap or similar material on the south, southwest, and windward sides of evergreens. If a plant has exhibited injury on all sides, surround it with a barrier, but leave the top open to allow for some air and light penetration.

- Keep evergreens properly watered throughout the growing season and into the fall.
 - Never stress plants by under- or overwatering.
 - Decrease watering slightly in September to encourage hardening off, then water thoroughly in October until freeze-up.
 - Watering only in late fall does not help reduce injury.
- Do not prune after August as pruning can induce the growth of new foliage.
- Anti-desiccant sprays are often not effective enough when used alone for protecting evergreen foliage.

When evergreen winter injury has occurred

Brown foliage is most likely dead and will not green up. But the buds, which are more cold hardy than leaves, will often grow and fill in areas.

- Wait until mid-spring before pruning out injured foliage.
- If the buds have not survived, prune dead branches back to living tissue.
- Fertilize injured plants in the late spring and water them well throughout the season.
 - Use a quick release water soluble fertilizer like Jack's Classic Acid Special in late spring once temperatures have warmed enough for plant growth and nutrient uptake. Never fertilize evergreens late in the season as they require time for new growth to harden off prior to winter.
- Provide appropriate protection the following winter.