University of Idaho
College of Agriculture
Cooperative Extension Service
Agricultural Experiment Station

Current Information Series No. 326
February 1976

Winter Injury or Winter Drought Of Evergreens in Idaho

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Winter injury or winter drought is one of the hazards of growing ornamental evergreens in Idaho. Since evergreens retain their needles or leaves throughout the winter, they lose moisture continuously and can easily become too dry. The actual injury occurs during mid-winter or early spring, but the damage will not show until warm weather in the spring.

Symptoms

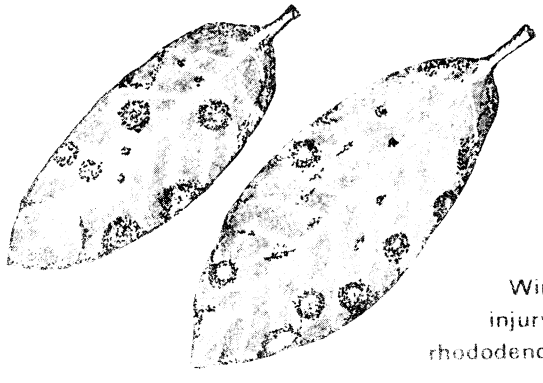
Winter injury or winter drought has several symptoms, depending upon the species of evergreen and severity of the damage. A symptom of some species is the color of needles or leaves fading from green to a light tan or from green to a reddish-brown. Other species, particularly broad-leafed evergreens, exhibit brown and dried leaf margins or needle tips. If injury is severe, the shrubs or trees may lose most of the leaves or needles on one side or over the entire plant. Severe or complete defoliation of an evergreen means not only an unsightly appearance but may cause the plant to die later in the spring or summer.

Causes

Winter injury or winter drought can be caused by several factors. Naturally, the more factors, the more severe is the damage. Also, the longer an evergreen is exposed to any of the causal factors, the more severe the damage will be.

Winter injury or winter drought has these most common factors:

1. **Lack of plant tolerance.** All species of evergreen trees and shrubs are susceptible to winter damage, but some are more tolerant than others. Deeply rooted species are more tolerant because they can extract water from the soil depths.



Winter injury on rhododendron

2. **Moisture availability.** Evergreens must have moisture in the late fall, winter, and early spring to prevent winter injury or winter drought. Although water loss is less during winter months, drying winds increase the need for water. Plants located in warm sunny sites also use much moisture. Shallow rooted species often suffer extensive damage because of low moisture in the upper soil layer.

   Late in the fall the owner should fill the soil profile with water by allowing a small stream of water to flow several hours at the base of the tree or shrub. The owner should repeat this watering early in the spring before spring growth of the plant occurs.

   You should irrigate shallow rooted species twice in the fall just to be certain that ample water is available to the plants.

3. **Improper fertilization.** Avoid an application of nitrogen-containing fertilizer late in the summer, because nitrogen stimulates top growth. Rapid growth of evergreens in the fall prevents them from "hardening-off" before winter, thus increases their susceptibility to winter injury or winter drought.

4. **Rapid change in temperature.** On warm, sunny winter days the sun's reflection from the snow into the foliage of an evergreen plant can result in a

temperature as high as 70°F. When this occurs the leaves or needles are stimulated into activity, and transpiration from them exhausts the available water in the leaves, needles, and even the twigs. Such conditions are common when the plant is located at a south or southwest exposure. Even without a snow cover, plants with such exposures are subject to intense sunlight during the day.

If the soil is frozen evergreens may suffer even more because water uptake and translocation are reduced drastically. The leaves, needles, and twigs are unable to continue their normal activity and soon die.

Providing some type of protection from the sun, such as a dark wooden fence or a burlap covering, will shade the plant and reduce moisture loss by the plant. Planting deep rooted conifers to shield other evergreens from intense winter sunlight also is of benefit.

5. **Poor location of plantings**. Plantings adjacent to white or aluminum sided structures may suffer extreme damage. The reflection of the sun's rays from the structure to the plant heats the air in the micro-climate of the foliage. This condition causes moisture loss from the foliage above the level of moisture the plant is able to provide.

6. **Drying winds**. Plantings at windy sites suffer particularly from the drying winds common to parts of Idaho.

7. **Late spring frosts.** These frosts can injure or kill the expanding leaf or needle buds. Usually this condition will not show until later in the spring when other shrubs and trees have partially leafed out.

Alleviating the Damage

Every effort should be made to prevent winter injury or winter drought by heeding the suggestions listed previously.

Severely damaged shrubs and trees may require extensive pruning or reshaping, or they may need to be removed and replaced. Less damaged plants may only require early spring irrigation and fertilization to stimulate new growth that will fill in where leaves, needles, twigs, and small branches have been killed.

Apply fertilizer during the early part of the season. You should provide an ample supply of water for the plants throughout the year.

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