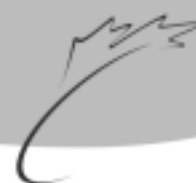




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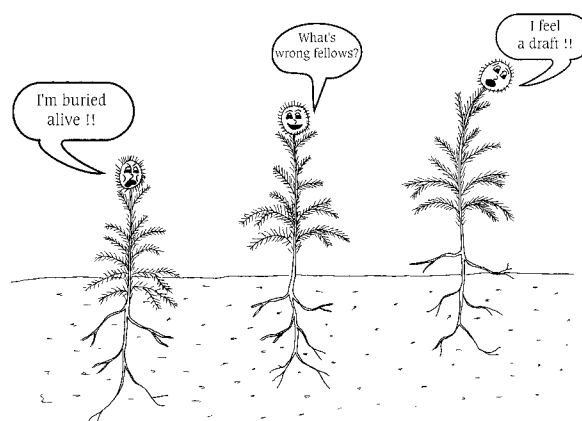
PLANTING AND CARE OF EVERGREENS

Plant evergreen seedlings in early spring, when soil moisture is plentiful. Spring-planted seedlings can reestablish their root systems prior to fall, which improves winter survival and promotes bud development for growth the following spring. Tree deliveries from the Agriculture And Agri-Food Canada-PFRA Shelterbelt Centre usually take place from late April to mid May, depending on weather. If possible, plant on cool, cloudy days rather than hot, windy days.

Always plant on a cultivated, weed-free site. If the planting site is dry and exposed, consider starting evergreens in a sheltered spot in the garden where they can be more easily watered and maintained. The evergreen seedlings can be grown in a nursery bed for two to four years, and then transplanted to their permanent location.

Planting

- Evergreen growth and survival is better if the roots are soaked 3-4 hours prior to planting. Do not soak the roots for more than 8 hours, as this may cause root damage.
- Do not expose the tree roots to sun or drying winds while planting. Keep the roots covered in the bundle with moistened peat moss.
- Plant the evergreens to the bottom of the lower branches.
- Do not put water in the hole before planting the seedlings. Place soil around the roots and pack firmly by tramping to remove air pockets. Leave a shallow, saucer-shaped depression around the tree to hold water. Water immediately after planting.
- Newly planted evergreens should be watered regularly until they become established. **For best results, the seedlings should be watered once a week for the first season. In following years, a good watering every two weeks is recommended.** When watering, soak the ground heavily, as shallow watering encourages shallow rooting. Shallow-rooted trees will not tolerate drought conditions.



Always plant seedlings to the proper depth.

Transplanting

Evergreens should be transplanted when they are small, approximately 1.2 m (4 ft) or less in height. They can be moved in early spring or from the second week of August to mid September. Retain as much of the roots and undisturbed soil around the roots as possible during the move. Water heavily after transplanting. Follow the same water schedule as outlined for newly planted evergreens.

Fertilizing

Fertilizing of newly planted evergreens is not recommended. If the evergreens have been planted in a good site, adding fertilizer is not necessary for seedlings to establish and grow. Evergreens have low fertility requirements and excessive amounts of nitrogen fertilizer may cause damage. Also, fertilizer does not move much in the soil, so root growth near the soil surface is promoted with fertilizer application. This leads to trees with a shallow root system which is more likely to suffer from drought. The best form of nutrient is leaf litter or well-rotted manure.

Pruning

Pruning of shelterbelt trees is required only to remove dead, diseased or broken branches. Any evergreen branches that are removed will not regrow, and as a result, the shelterbelt will have gaps. Gaps reduce the protection that your shelterbelt provides against wind and blowing snow.

Weed Control

Weed control is essential during the establishment years to reduce competition for moisture and nutrients. Tillage around the trees should be shallow, approximately 5-7.5 cm (2-3 in) to prevent root injury. Till as soon as weeds appear. To minimize competition, do not allow weeds to grow more than 5 cm (2 in). When applying herbicides to control weeds, do not allow spray drift to reach the needles. For more information on weed control, please refer to our brochures, *Herbicides for Shelterbelt Weed Control* and *Non Chemical Weed Control Methods for Tree Planting*.

Winter Browning

Evergreens showing signs of discoloration in the spring indicate that winter browning or desiccation has likely occurred. Needles can appear slightly or distinctly yellow, brown, or red-brown, depending on the severity of the damage. The damage is caused by evaporation of moisture from the needles during warm or windy periods in winter. This moisture loss cannot be replaced, since the soil is frozen and the roots are inactive.

South and west-facing branches are prime targets for injury. Newly established evergreens on exposed sites are also subject to winter desiccation and browning, which is common in pine, junipers and ornamental cedars. While unsightly, winter damage is not always fatal. Severe needle loss may occur, but if the buds are not damaged, new needle growth will occur in the spring. Watering the trees well as soon as the ground thaws will help them recover.

Prevention of Winter Browning

Prevention of winter browning is difficult, but precautions can be taken. Reducing moisture stress during the growing season will reduce the risk of winter injury. Water trees well during the dry summer periods. Discontinue watering all trees (including evergreens) until September 1, but water once again before freeze-up, and after the second hard frost. This watering schedule will give the trees a chance to harden off before winter.

In shelterbelts, evergreens should be planted as inside rows. As an inside row, spruce trees are protected from the wind and they also benefit from the snow trapped by the outer rows. A snow fence or bales placed near the evergreens will also help to trap moisture and provide a protective cover.

For new shelterbelts, if the site is dry and exposed, consider starting the evergreens in a sheltered spot in the garden where they can be more easily watered and maintained. The young evergreens can be grown for two to four years and then transplanted to their permanent location.

Diagnosing Winter Browning

Needle browning can occur at other times of the year and for other reasons. During the summer, following a period of hot, dry windy weather, evergreens can exhibit browning and dieback due to desiccation. Winter browning, or summer drought damage, should not be confused with the normal shedding of needles during autumn. Depending on the species, needles brown and are shed after two or three years. This will occur naturally toward the centre of the tree, while new growth and previous year's growth remain normal at the outer edges.

Dog damage, herbicide damage and iron deficiency are other possible causes for browning. However, these problems are less common than winter browning.

Insects

For information on the common insects that affect evergreens, please refer to the fact sheets *Aphids*; *Cooley Spruce Gall Adelgid*; *Spruce Budworm*; *Spruce Spider Mite*; *Yellow-headed Spruce Sawfly*; and *Pine Needle Scale*.

For more information, contact:

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