

8 WAYS TO INCREASE THE SURVIVAL OF YOUR PLANTED TREES

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A little care and planning up front can increase your tree planting success.

1. SITE PREPARATION

The year before planting, it may be wise to do some planning and take some precautions, which will later increase survival. For some hints, see #8 **PROBLEMS**. Where frost heaving may be expected, on low sites, imperfectly drained sites, or heavier soils that dry out and crack in the summer, the Ministry has done mounding to create an elevated microsite on which to place the trees. Where grass is a problem, some cultivation or herbicide treatment may be in order. If you plan to cultivate after planting, you may want to mark the rows to make them straight enough to allow cultivation after planting and not damage the trees in doing so.

Open fields that have been previously tilled and have no sod cover, and where subsequent cultivation will not be done, may have to be planted with a grass cover such as tall or creeping fescue, to ensure that the area does not become weed infested once the trees are planted. The area immediately around the trees can then be treated with a herbicide or mulch to kill this grass, after the trees are planted. Deep rooted plants such as alfalfa, trefoil or vetch should not be used for ground covers as they will compete with the trees and are hard to control with herbicides such as simazine.

2. TRANSPORTATION

When you pick up trees from the nursery, keep the trees cool in transport. Do not leave them in a vehicle in the sun for any length of time. Trees transported in an open truck should be covered by a tarp. If it can be arranged, transport on a cool day, or in the cool part of the day. Trees are living organisms: **DO NOT DROP OR ROUGHLY HANDLE THE BAGS OF TREES** as this will reduce tree survival and growth.

3. STORAGE

Trees will have been fresh lifted, or stored at the

nursery for several days in a cooler. Storage should continue in closed bags, in a cool location, for up to four days. For longer storage, it may be advisable to heel the trees in, covering the roots in a trench in the garden and watering to keep the roots moist. When healing in, use a shaded location with light, sandy soils. Removing trees from heavy soils after healing in may be difficult, resulting in stripping or damage to roots when removing the trees from the soil.

4. BEWARE OF GROWTH

If you open the bags, and considerable moisture appears to be condensed on the inside of the bags, this may signal a potential problem. Trees should be lifted and shipped in a dormant condition. Once the trees begin to break dormancy; that is, begin to grow, trees start the process of respiration. This process takes stored food reserves and breaks them down into carbon dioxide, water, and heat energy. A sweet odour like apples also indicates trees that are coming out of dormancy. Therefore, if trees are becoming active, producing water in large quantities, they may also heat and become damaged by temperature and moulds through their own activity. Look for mould on the trees, particularly where the bundles are tied together. Check the trees themselves. If there are white root tips longer than 1/4 inch, and the buds are starting to expand, the trees are breaking dormancy and should be healed in, or planted as quickly as possible.

5. HANDLING

Trees are living organisms and should be handled as such. Tree handling at the planting site can create lethal conditions. Do not store bags or trees in the sunlight, or on the back of a half ton, or in a car trunk, or in a covered half ton. Store bags of trees in the shade, or under a suspended tarp. Open the bags only as you need the trees. Remove the bundle of trees from the bag, 1) do not shake the dirt off the roots, 2) remove the elastic or string from the bundle by cutting, not tearing it off, 3) dip them in a pail of water and stand them upright in a second pail in which one or two inches of water has been placed. This is your **planting pail** and will keep humidity

around the roots as they are waiting to be planted. Once the **planting pail** is full of trees, reclose the bag and place it back in the shade.

6. PLANTING

A standard round-mouth shovel is often the best planting tool. This can create a large enough hole to accommodate even the largest stock. A two-cut "L" method is also the most versatile. The first cut is made to break the sod, and should be made vertically in a "North - South" direction. The second cut can be made at right angles to the first, at the south end of the first, in an "East - West" direction. This cut does not necessarily have to be vertical. The "L" shaped piece of sod is then pried out. **ONCE THE HOLE IS MADE, THE TREE IS THEN, AND ONLY THEN, REMOVED FROM THE PLANTING PAIL. NEVER CARRY TREES IN YOUR HAND AS YOU CONTINUE TO PLANT.** Do not prune, trim, tear, or wrap up the roots of the tree, as considerable effort has been made to grow trees with adequate roots. The tree is placed with the stem at the "North" end of the first cut, on the vertical cut face which makes the tree stand upright, and the roots are fanned outward and downward toward the "East-West" cut, where the shovel now is, and should be placed into the hole underneath the blade of the shovel as it holds up the wedge of soil. **DO NOT PLANT THE TREE DEEPER OR SHALLOWER THAN IT HAS BEEN GROWN IN THE NURSERY.** The shovel is withdrawn, and the soil replaced and tamped in with the foot. **Placing the tree at the apex of the "L" is incorrect and does not allow sufficient room for root placement.**

7. CARE AFTER PLANTING

Competition from grass and weeds will often result in failure of a planting. In addition, hardwood trees will suffer from browsing and girdling from meadow voles (field mice whose population cycles every four years) which live in the sod, rabbits, ground hogs and deer. Competition control, particularly on fertile sites, may be necessary to increase survival, and is absolutely necessary with hardwoods such as walnut, ash, oak, maple and poplar. The common methods of vegetation control, in order of effectiveness and benefit to the trees are: 1 - herbicides, 2 - cultivation, and 3 - mowing, which is relatively ineffective. For

conifers, a three foot diameter weed free zone must be maintained around each tree, or a three foot wide weed free band must be maintained on the row, for at least the first two years after planting and longer in heavy competition. For hardwoods, the weed free zone must be five feet and should be maintained for three to five years.

Herbicides

The ministry often uses simazine (Princep, Simadex) as a pre-emergent soil sterilant to combat grass completion. This is a **non-selective herbicide** that must be used before the grass is higher than 4 inches, and at the right dosage to kill the grass and leave the trees unharmed. It can be sprayed on the tree foliage without harming the tree, as it is only taken up through the roots. Again, **correct dosage is important or trees may be harmed.** This herbicide is not as effective on deep rooted plants such as alfalfa, and ragweed is resistant. Used as a site preparation tool, before planting, this material must not be incorporated into the rooting zone. **ALWAYS FOLLOW THE INSTRUCTIONS ON THE LABEL.**

If grass is too high (higher than four inches) for simazine, glyphosate (Roundup, Vision), or amitrol-T (Cytrol) may be used to knock the grass down. **Trees must be protected from the spray.** Often a five gallon pail or stove pipe may be made into a shield and carried by the sprayer to set over the tree as the surrounding grass is sprayed. **Do not let the material drift onto neighbouring trees. ALWAYS FOLLOW THE INSTRUCTIONS ON THE LABEL.**

Licensing may be required to use these materials.

Mulches

Wood chips, straw, or commercial mulch materials can be used as alternatives to herbicides. Caution must be used to ensure that the mulch does not become a home for rodents. Some mulches, if they prevent aeration or are used excessively, may reduce nitrogen available to the tree.

8. PROBLEMS

Besides **frost heaving, browsing and girdling,**

White needles can indicate **herbicide damage** from residual herbicides in the soil, or from herbicides applied to control grass and weeds. Herbicides will perform differently on various soils and with varying environmental conditions.

White Pine: **White pine blister rust**, a canker disease which kills branches and sometimes the main stem. Look for resin flow year round, and orange powdery spores on the bark, in May.

White Pine: **White pine weevil**, kills the uppermost shoot (leader) of the tree.

White Pine: **Aphids** produce a nectar which causes a black sooty fungal growth to appear on needles.

Red Pine: **European pine shoot moth** which deforms the elongating shoots of the branches.

WHITE AND RED PINE DO NOT LIKE BEING PLANTED ON ERODED, LANDSCAPED, OR DISTURBED SOILS WITH HIGH pH. It may take 20 years, but they eventually turn yellow and die.

With White and Red Pine, do not worry about yellowing of the older needles in the fall as this is normal needle drop associated with winter dormancy.

Norway Spruce: **Frost damage** in low areas. Look for brown, wilted shoots in May or June.

White and Norway Spruce: **Spruce Gall Aphid.** Look for swollen branch tips.

Hardwood trees such as Walnut, Oak, and Ash prefer fertile sites, well drained, with good grass and weed control.

Walnut: **Frost damage** showing as blackened leaves.

Walnut: **Walnut caterpillar**, a black, hairy caterpillar.

Walnut: **Anthracnose**, a fungal disease causing curled leaves, blackened at the margins.

Ash: **Anthracnose** as with walnut.

Red Oak: The preferred host for **Gypsy Moth**

caterpillars. Look for five pairs of blue, followed by six pairs of red, spots (tubercles) down the back.

European Larch and Tamarack: **Larch casebearer** which hollows needles and turns them brown.

Pines and Larch: **Sawfly** larvae which are caterpillars that feed in colonies. Unlike other caterpillars which are moth larvae, these caterpillars are the larvae of a fly. They vary in colour but often have rows of spots down the sides.

Consult the booklet: **Common Pests of Trees in Ontario**, available from MNR offices or government bookstores.

The "L" Method

