Shelterbelt Tree Planting Guide

Proper handling is key for seedling survival. They're sensitive to damage, moisture loss, and temperature changes, especially during transport and planting. The first 72 hours and 3 years are crucial for success.

Learn about the whole process to help plant for success - we are rooting for you!

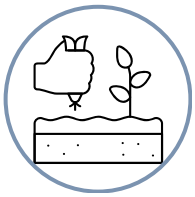

Preparation


Layout


Transport


Planting

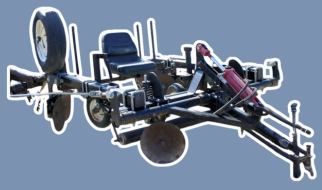

Watering


Control

Needing Help? We have rental equipment!

Tree Planter

- **Operation:** Machine plows a trench, operators manually place trees (2 seats), rollers close the trench.
- **Hydraulics:** One set required.
  - **Skid Steer:** Needs 1/2" pioneer-style couplers (flat face couplers must be swapped - provided).
  - **Tractor:** Minimum 30 HP.
- **Hitch:** Pin-style hitch for planting; ball hitch for transport (provided).



Plastic Mulch Applicator

- **Operation:** Lays 4-ft plastic mulch (provided) and anchors edges with soil. Works best on pre-tilled ground. Can be installed over planted trees and cut to fit around stems.
- **Hydraulics:** One set required. Minimum 30 HP.
- **Hitch:** Pin-style hitch.
- **Note:** This unit is shared between Camrose County, Starland County, and the County of Stettler.

Other Equipment Available:

- Spraying Equipment
- Water Pump and Hose
- Cattle Scale
- Skunk and Magpie Traps




More Details: https://www.stettlercounty.ca/143/Equipment-Rentals

Site Preparation

Site preparation reduces weeds, improves growth, and will save on maintenance!

Proper site prep can **DOUBLE** survival!

Soil Assessment

Use the Alberta Soil Information Viewer to determine your soil type!

- **Sandy:** Drains fast—add mulch and water more
- **Clay:** Holds moisture but compacts—don't work when wet
- **Loam:** Best balance of drainage and moisture
- Avoid saline or high-pH soils

Existing Vegetation

- Prepare site one growing season ahead if possible
- Control grass and weeds—mowing alone isn't enough
- Tillage loosens soil and reduces root competition
- Use herbicides carefully; follow label directions to avoid tree damage
- Mix compost evenly into soil—don't concentrate in hole

Site Design and Layout

- Consider the tree's full-grown size (above and below ground).
  - Avoid planting under powerlines or too close to buildings.

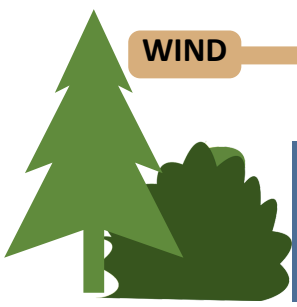
- Use 2–5 rows of trees and shrubs for best protection.
- Between row spacing recommended minimum 6 m (20 ft.)
- Within-row spacing - depends on the species.
  - Trees: 2.5–3.5 m (8–12 ft)
  - Shrubs: ~1 m (3 ft)
- Denser spacing gives early protection but may require thinning later.
- Stagger rows to reduce gaps.
- Place shorter species/shrubs downwind to gradually reduce wind.
- Learn more about Shelterbelts for farms in Alberta.

REMEMBER...

Keep records of

- planting dates
- species (variety)
- watering information

Roots can span 2 to 3 times the width of the tree canopy - impacting infrastructure.



Transport & Storage

General Handling

- Plant ASAP (24 - 74 hours); otherwise store cool, dark, and shaded areas.
- Keep roots cool and moist—not dry or waterlogged - use mist to water.
- Protect from heat, sun, and wind; never leave in open truck
- Handle by root ball/container, not stem

Cool is Key!

Trees are refrigerated in the nursery and pre-delivery

Try to mimic cool soil.

TIP: For long storage, use ice bags around boxes or trays.

1. Bare Root Seedling - *most care needed*
2. Tree Plugs - *resilient but need protection*
3. Potted Trees - *most forgiving*

DO NOT

Allow roots to dry out—even briefly.

but

Don't soak roots in water!

Transport

- Pick up seedlings in early morning - if possible
- Transport in original trays; secure to prevent damage
- Use a vehicle with a cab and AC if possible; make seedlings your last stop before heading home
- Cover with a tarp or blanket to protect from the sun.
- Keep seedlings bundled and wrapped until planting

Short-Term Storage

- Store in a cool, dark place until planting (root cellar, garage, shed, or north side of a building).
- Temperatures of 1–4 °C are ideal
- Keep roots moist; mist if dry—do not soak
- Plant within 24–72 hours

At Planting

- Take only what you can plant within 1 hour
- Keep roots covered and moist—not in water
- Protect from sun and wind - seedlings should not sit in direct sun for any length of time
- Plant early morning or on cool, cloudy days
- Lift by root ball/container, not trunk

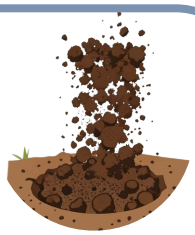
How to Plant

The Hole
2X

Dig hole twice as wide as the root ball of your tree seedling.

The Depth
=

Dig a hole to the root depth and plant with the root collar at ground level.



The Fill
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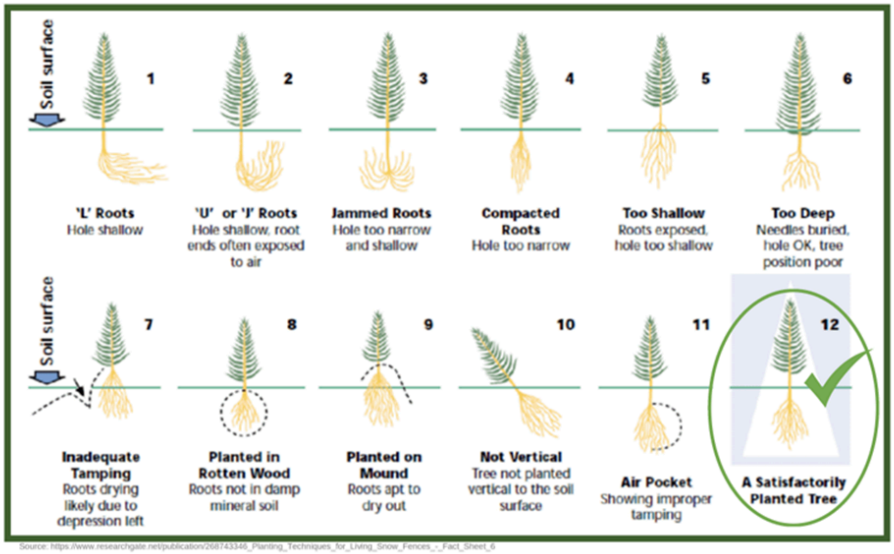
Backfill with soil, breaking up clumps and packing gently to remove air pockets.

Planting too deep is a common cause of seedling death!

- Planting too deep can cause bark decay, trunk rot, girdling, delay growth or cause tree death
- Set root collar at ground level
- Only a thin layer of soil is needed above the seedling's soil.

Placing Seedling:

- Handle seedlings gently, holding by the root plug/soil, not the stem.
- Place the seedling in a wide hole with loose soil to allow roots to expand easily.
- Lower the seedling straight down—do not twist, bend, or force the roots
- Make sure the seedling is upright and centered.



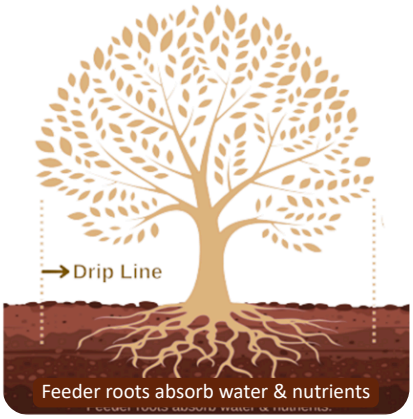
Backfilling the Soil:

- Gently fill the hole with the original soil, keeping the seedling upright.
- Do not add compost or other soil amendments, as this can discourage roots from spreading.
- Break up large soil clumps before placing them back in the hole.
- Firm the soil lightly to remove large air pockets—do not pack tightly.
- Ensure the root collar remains level with the ground surface.
- Avoid burying leaves or stem tissue.
- Leave the soil slightly mounded to allow for natural settling.

Watering

At Planting:

- Water deeply right after planting to settle soil and support roots
- Soak the soil to 15–30 cm (6–12") deep to encourage root growth



General Tips:

- Test water for high sodium
- Check soil moisture first – if the top 5–10 cm is dry, it's time to water. Avoid overwatering – soil should be moist, not saturated.
- Water at the base of the tree, not on the leaves.
  - When the tree matures focus at the drip line, not the trunk
- Water slowly so moisture soaks in rather than running off.
- Apply woodchip mulch to hold moisture
- Monitor closely and water more during hot, dry weather
- Reduce watering in fall, but give a final deep watering before freeze-up.

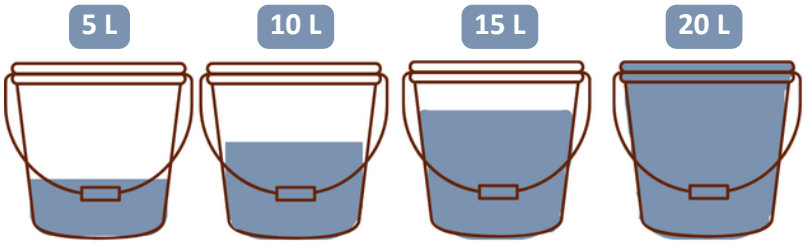
Create small donut-shaped basins to direct water to roots - don't mound near trunk (rot risk).

Watering Schedule:

- Weeks 1–2: Daily (small quantity)
- Weeks 3–8: Every 2-5 days
- After 8 weeks: Weekly until established
- Year 1: Water during dry periods
- Years 2–3: Water during heat and drought
- Late summer: Reduce watering
- Before freeze-up: Deep water

How Much Water?

Depends on seedling size, soil, and weather.



In hot and windy weather or on sandy soils increase watering.

Avoid frequent shallow watering. This leads to shallow, weak roots that are vulnerable to drought

Slow watering methods work best:

- Pail with small holes
- Tree watering bags
- Slow trickle from hose
- Drip irrigation

Mulch Matters!

Mulch helps retain moisture. Use wood chips or shredded bark. Apply 5–10 cm of mulch, ~60 cm in diameter, keeping it 5 cm away from the stem (donut shape - not volcano).

Check Ins - Signs and Symptoms:

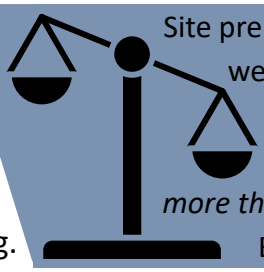
- Signs of under-watering: wilting, yellowing, or browning leaves.
- Signs of overwatering: yellowing leaves that drop early or consistently soggy soil.
- If the tree is wilted, water thoroughly and observe.
  - If leaves perk up within a few hours, the tree needed water.
  - If leaves remain wilted, overwatering is likely the issue.

Weed & Grass Control

- Weed control is critical in dry areas - competes for limited moisture.
- Keep a weed-free zone 30–60 cm (12–24") around each seedling.
- Maintain weed control for the first 3 years, until trees are established.

Prevention (Most Important):

- Start clean – control perennial weeds before planting trees.
- Use mulch immediately after planting to suppress germination.
- Avoid bringing in contaminated soil or mulch.
- Promote vigorous tree growth through proper watering and spacing.



Site preparation and early weed control are key; *"An ounce of prevention is worth more than a pound of cure."* Benjamin Franklin

Monitoring & Identification:

- Inspect regularly (spring and early summer are critical).
- Identify whether weeds — control strategies differ.
- Control deep-rooted perennials and invasive species early - priority.

Weed Wise

Annual: control seed set

Perennial: control roots & stop seeds

Mechanical Controls:

- Hand pulling when soil is moist (try to remove entire root system).
- Use mulch, landscape fabric, or plastic mulch to reduce light and suppress growth.
- Use caution tilling—young roots are shallow.
- Mowing between rows to reduce seed production (do not mow close to stems).

Chemical Controls (When Necessary):

- Use herbicides only when other methods are insufficient.
- Follow all label directions and provincial regulations.
- Consider timing applications when weeds are young and vulnerable.

Get down to the root!

Taproot:
Can be hand pulled, but if it breaks plant may regrow needing further removal or spot treatment.
EX: Dandelion, Pigweed, Lamb's Quarters

Fibrous:
Easy to pull and common among annual species. Tillage can help control them, and repeated mowing can deplete their roots.
EX: Scentless Chamomile, Common Plantain

Creeping:
Hard to pull due to regrowth from root fragments and can deplete roots with frequent mowing. Chemical control requires caution.
EX: Canada Thistle, Quackgrass

Weed Watch!

Learn about regulated weeds under the *Alberta Weed Control Act* and check out the Invasive Plants of Alberta Guide!

Long-Term Takeaways:

- Prevent weeds from going to seed.
- Focus on consistent, early intervention rather than crisis control.
- Use integrated methods to prevent resistance and ease control.