EXTENSION NOTES

Ontario

TREE SHELTERS HELP HARDWOOD TREES GROW FASTER

Tree shelters improve the growth and survival of tree seedlings by protecting them from animal browsing and extreme temperatures. They are useful for re-establishing hardwood forests on abandoned agricultural land and other areas.

This Extension Note provides information about some of the tree shelters that are available and how to use them effectively.

THE BENEFITS OF TREE SHELTERS

Tree shelters are plastic tubes that are placed around tree seedlings when they are planted. They were recently introduced to Canada from Great Britain, where they have been widely used for establishing hardwood forests.

Light passes through the translucent tube, creating a small greenhouse inside that traps carbon dioxide and moderates hot and cold temperatures. Used effectively, tree shelters can:

- Protect trees from browsing by rodents, rabbits and deer
- Allow quick location and inspection of trees
- Reduce stress caused by transplanting

Tree shelters protect trees for about seven years. They are designed to break down in sunlight as the trees outgrow them. Do not remove tree shelters before they break down because trees growing in shelters do not become stable until the tree has grown out of the tube.

For large hardwood plantations, fencing may be a less expensive alternative to tree shelters for protecting trees from deer browse.

TIPS FOR INSTALLING TREE SHELTERS

To get the best results from tree shelters, they must be installed correctly. Here are some tips to help you get started.

PREPARING THE SITE

Turn over the soil before planting. This makes it easier to push the tree shelters into the soil. If planting in sod, consider using a herbicide to kill perennial weeds, which might otherwise grow inside the tube. For more detailed information on site preparation, see Extension Note *Clearing the Way: Preparing the Site for Tree Planting.*

WHEN TO INSTALL

To reduce the shock of transplanting, tree shelters should be installed when the seedlings are planted. Follow the manufacturer's instructions for shelter assembly, if required, and installation.

PLANTING STOCK

Do not use shelters on poor quality hardwood stock or plants that have been planted improperly. Order 10 to 20 per cent more trees than you need so that the trees with the smallest root systems can be discarded. For more detailed information on planting, see Extension Note *Careful Handling and Planting of Nursery Stock.*

HEIGHT OF TREE SHELTER

Tree shelters should be higher than the level at which animals browse in your area. Smaller shelters will protect trees from rabbit clipping and rodent girdling, but if deer are abundant, shelters need to be at least 1.5 metres tall.

STAKES

Pointed wooden stakes, square in cross-section, are recommended for supporting the shelter and the tree. The length of the stake depends on the height of the tree shelter being used. Stakes should penetrate the ground to a depth of at least 20 centimetres and project about 10 centimetres above the upper tie, but remain below the rim of the shelter. The bottom 20 to 30 centimetres of the stake should be treated with a water-based wood preservative like CIL Dulex Woodcare Latex Stain. This will minimize replacement of stakes due to rotting and breakage.

INSTALLING

To reduce root damage, always plant trees after the stakes are placed in the ground. Drive the stakes into the ground with a mallet. On stony soil, use a small crowbar to start the hole. Place stakes on the windward side of the planting spot, and ensure they are upright. Plant trees. Place the tubes over the trees and push the tubes into the ground to a depth of five centimetres. Tie the tubes to the stakes with the attached fasteners. Do not tie them too tightly. Loosely fastened ties reduce the potential of damage to the tree caused by frost heaving of the tube.

A Tubex tree shelter protects a one-year-old red oak seedling.

NETS

Place a nylon mesh net on top of the tube to prevent perching birds from falling in. Remove the net before the tree grows to the top of the tube to prevent deformation of the stem.

WEED CONTROL

For best results, the area around the tree shelter should be kept free of weeds that compete with the tree for water and nutrients. For information on weed control, see Extension Note *Mulches Help Beat Weed Competition* and Extension Note *Using a Backpack Herbicide Sprayer to Control Weeds.*

TWO TYPES OF TRANSLUCENT TREE SHELTERS

Several tree shelters are being evaluated by Ministry of Natural Resources in southern Ontario. The following two tree shelters have been tested for several years. The cost of all tree shelters varies with the quantity purchased. Check with the supplier for current prices.

TUBEX

The Tubex tree shelter is a light brown tube. The top of the tube is flared to avoid stem abrasion. Tubex are available in five heights: 0.6, 1.0 1.2, 1.5 and 1.8 metres. They are shipped in groups of four, nested together, each with a slightly different diameter. The small variation in diameter has no effect on tree growth.

To install a Tubex tree shelter, drive a wooden stake 20 centimetres into the ground on the windward side of the tree spot. Plant the tree. Place the tube over the tree and push it into the ground to a depth of five centimetres.

A one-year-old red oak seedling emerges from a 1.5 metre Tree Pro after the first growing season. Weeds are controlled by a 90 x 90 centimetre Brush Blanket.

Then, fasten the tube to the stake with the two plastic ties that are attached to the tube. Place the mesh net over the top of the tube to prevent birds from falling in.

TREE PRO

The Tree Pro is an off-white shelter that requires staking. It is made of recycled plastic. The shelters are shipped as flat sheets and must be rolled into tubes.

To install, roll the flat plastic sheet into a tube with the corrugated surface on the outside. Overlap the edge, insert and fasten the three ties that hold the sheet in a tube shape.

Place a stake on the windward side of the planting spot. Plant a tree and place the tube over it. Fasten the tube to the stake with the ties.

The Tree Pro is more difficult and time consuming to install than the Tubex tree shelter. The sheets must be rolled and the three ties attached. They are also harder to insert into the soil, especially if the soil has not been cultivated first.

Tree Pro shelters may offer advantages over other shelters because they can be partially opened in the fall to allow the trees to adapt to cold weather. This may reduce frost damage.

CANADIAN SUPPLIERS

TUBEX

The St. George Company Limited
P.O. Box 430, 20 Consolidated Drive
Paris, Ontario
N3L 3T5
telephone (519) 442-2046
fax (519) 442-7191

The approximate cost of a 1.5 metre Tubex is $4.00.

TREE PRO

Canadian Forestry Equipment Ltd.
1540 Trinity Drive, Unit #4
Mississauga, Ontario
L5T 1L6
telephone 1-800-387-4940
fax (905) 795-1632

The approximate cost of a 1.5 metre Tree Pro is $4.75.

VISIT MNR'S TREE SHELTER TEST SITES AND DEMONSTRATIONS

The effectiveness of tree shelters as tools for re-establishing hardwood forests in southern Ontario is being evaluated by the Ministry of Natural Resources at test sites near Ridgetown, Cayuga, Midhurst, Picton and Prescott. The field trials are being conducted through the Vegetation Management Alternatives Program, which is developing safe and effective alternatives to herbicide spraying. Field tests have already shown that tree shelters enhance the growth of red oak, black walnut and white ash tree seedlings.

To view tree shelters, demonstration sites are located near the MNR's Chatham, Fonthill, Midhurst and Brockville offices. To arrange a visit please call the office nearest you. For more information on tree shelter evaluation in southern Ontario contact:
Vegetation Management Alternatives Program
Ministry of Natural Resources
P.O. Box 605, Brockville, Ontario K6V 5Y8
telephone (613) 342-8524
fax (613) 342-7544

Tree shelters require regular maintenance to correct broken stakes and remove nets before stem deformation occurs.

MNR's tree shelter test at Midhurst after two growing seasons.

Produced by the LandOwner Resource Centre and the Ontario Ministry of Natural Resources.

50515
10 k P.R., 95 08 25)
REV
ISSN 1198-3744

Order Number: LRC 1
Cette publication est également disponible en français.