

SUCCESSFUL TREE PLANTING



For Land's Sake

Iowa Department of Natural Resources
State Forest Nursery

March 2002

PLANNING

Advance planning, proper species selection, site preparation, careful handling of tree seedlings, and a good weed control program will help assure a successful tree planting. A commitment to plant with care, is an important first step that leads to successful establishment of tree and shrub seedlings.

PLANNING

Before ordering your trees, take time to make a plan. If necessary, consult a DNR District Forester (see the other side for a Forester in your area).

- Select tree and shrub species that will do well on your site and that will meet your objectives.
- Determine what spacing to use and the number of trees and shrubs needed.
- Place your order early to insure that seedlings are available.
- Consider the existing ground cover and the steps you need to take to insure that your trees will not succumb to weeds. You may need to eliminate or reduce competing vegetation before your planting can succeed.
- Consider what you will need to do to prepare the site.
- Decide if the site can be planted by machine or if hand planting is needed.
- Decide if you can do the work yourself, or if you need to hire a contractor.

SITE PREPARATION

The objective of site preparation is to control competing vegetation and to insure good soil to root contact for the newly planted seedlings. An ideal site is well tilled and free of weeds. However the steepness of slope, rocks and other impediments, and the need to control soil erosion often limit the degree of site preparation that can be considered practical.

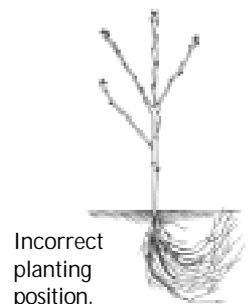
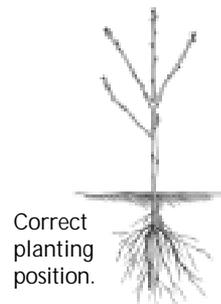
If possible, completely eliminate vegetation in a strip 3-5' wide where the trees are to be planted. This can be done by cultivation or with herbicides. If the site needs protection from erosion, do all work on the contour.

CARE OF SEEDLINGS PRIOR TO PLANTING

The planting season in Iowa is generally April 1st to mid-May. It is best to plant seedlings as soon as you receive them. If this is not possible, they should be stored in a cooler at 35°F. If this is not possible, keep as cool as possible, in a location that does not allow freezing and thawing. Seedlings lose their vigor if stored for long periods.

CARE OF SEEDLINGS DURING PLANTING

- Keep seedlings roots moist at all times. Transport trees in a bucket with water covering the roots or keep roots under wet material.
- Do not leave bags of trees in the sun!
- Plant seedlings so that the root collar is slightly below ground line. Trees may not survive if their roots are exposed.
- Plant seedlings so that the main root is straight down, not doubled or sharply bent. Seedlings planted with “U-shaped” roots grow poorly. It is better to trim extremely long roots.
- Plant seedlings in an upright position, with soil firmly packed about the root system and leaving no air pockets.



METHODS

Trees may be successfully planted by machine or by hand planting techniques. The choice depends on the number of trees to be planted, your site conditions, and the equipment or manpower available.

PLANTING METHODS

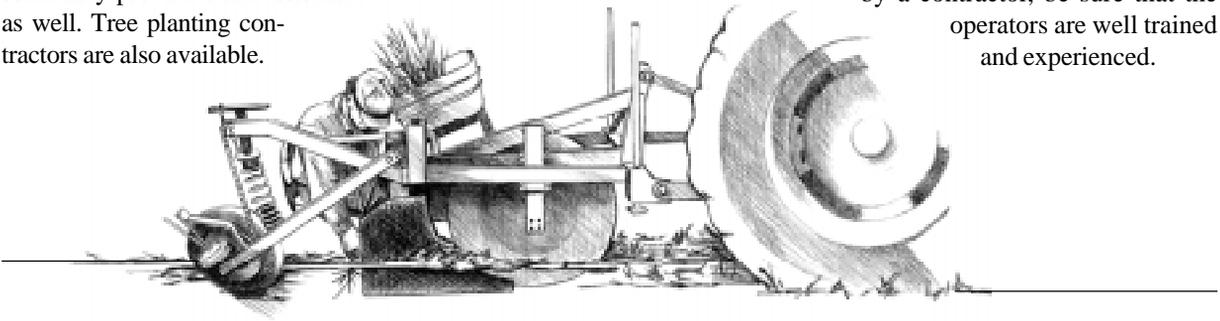
MACHINE PLANTING

Tractor-drawn planting machines are limited to areas that can be worked with farm equipment. Average planting rates are 500-700 seedlings per hour.

County Conservation Boards and Pheasants Forever groups often have tree planting machines to loan or rent; some may provide other assistance as well. Tree planting contractors are also available.

Before starting, get instructions from the planting machine owner or a DNR District Forester (see the other side for a Forester in your area).

Be sure that the machine opens an adequate planting trench and that it packs the trees firmly. If planting is done by a contractor, be sure that the operators are well trained and experienced.



HAND PLANTING

Trees should be hand planted:

- when the planting site is too steep, rocky, brushy, severely gullied or small to be planted by machine;
- when planting machines are not available;
- when there are small areas of re-planting to do;
- within woodland openings or following timber harvest operations.

Average planting rates for hand planting are 300-500 seedlings per day.

There are three general methods of hand planting:

- the dug-hole method,
- the slit method, and
- the wedge method.

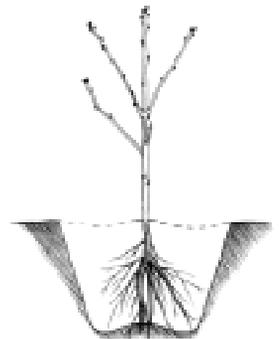
DUG-HOLE METHOD

Using a shovel or auger, plant the tree in a hole deep enough and large enough to hold the roots of the tree. Place the tree in the hole so that roots are not doubled or bent, fill in with loose dirt and pack to achieve good root-to-soil contact.

Slightly depress surface soil for water penetration.

Pack soil, removing all air pockets.

Use soil to help open the roots.



MAINTENANCE

PLANTING METHODS continued

HAND PLANTING

SLIT METHOD



Insert planting bar at an angle, then push forward to an upright position.



Place seedling at correct depth. Vertically insert bar 2" from seedling. Pull bar back, firming soil at bottom of hole.



Push bar forward, firming the remainder of the hole.



Fill remaining hole. Step on soil around seedling to firm.

WEDGE METHOD



Insert a sand shovel vertically into soil.



Insert shovel at an angle to create a wedge of soil.



Lift out soil wedge.



Place seedling against vertical side of hole, replace soil wedge, then step on wedge to firm.

MAINTENANCE

No tree planting is complete until weed competition is controlled.

HERBICIDES: Contact a DNR District Forester or the State Forest Nursery for herbicide recommendations; or request our *Grass & Weed Control* brochure.

MULCH: Controls weeds effectively but may contribute to a rodent problem. A 3' diameter circle mulched to a depth of 6" requires 3-4 cubic feet of bark, chips or sawdust.

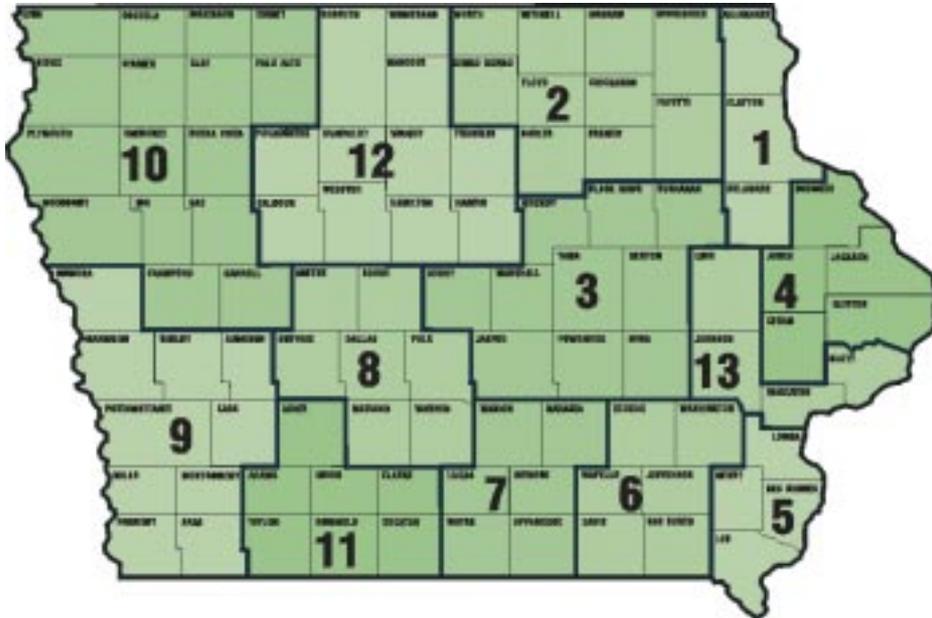
MECHANICAL: Till or hoe around each seedling. Mowing alone does not prevent competition from weeds, but may reduce rodent habitat.

Maintenance is needed for the first 3 to 5 growing seasons. If seedling survival is less than 65%, consider replacing trees that have died.

For assistance with any phase of tree planting, contact your DNR District Forester.

ASSISTANCE

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For more information, contact the
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 or your District Forester.



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