

## Hand Planting Using A Hoedad



1. Hold the hoedad high above your head.

2. Hit the ground hard. Make sure that the blade enters the ground perpendicular to the surface. The hole should be deep and straight.



3. Pull up hard on the handle to loosen the soil.



4. Slide your hand down the handle to the bracket. Pull blade up and back. Use the blade to scrape loose dirt out of the hole.



5. Look down the blade to the bottom of the hole. Feed tree down until it touches bottom. Lift blade out, letting loose soil fall against the roots of the seedling.



6. Backfill the tree, insert blade at an angle into the ground 2 inches from the tree and lever the loose soil up against the roots, packing it firm against the roots.

7. Fill the last hole by tamping with the heel.

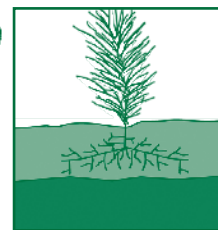


## MACHINE PLANTING

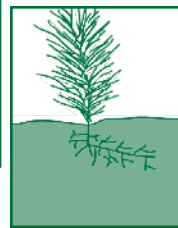
Tractor-drawn mechanical tree planters can plant up to 1,000 seedlings per hour in open areas. Covered planters are used to plant rough areas. Here are some helpful tips:

- ◆ When machine planting, regulate spacing by clocking the interval between each seedling drop. When desired spacing is achieved, the fixed time can be used throughout the operation for uniformity.
- ◆ The planter furrow must be deep enough to provide for full length of the roots when straight. Adjust for correctness.
- ◆ Remove only enough seedlings for immediate use; close bag to protect the remaining seedlings.
- ◆ Keep seedling roots covered in planter tray with moist moss or puddling mud.
- ◆ Insert seedling well forward in furrow.
- ◆ Hold seedlings straight up until soil is closed around root.

Wheels pack soil around seedling. Hold seedling straight up until soil closes around root.



Trencher set too shallow.



Seedling was held too long and dragged in the trench. Root development will be poor and seedling may die.



Seedling planted at the correct depth.

## FOLLOWUP CARE

Keep brush, grass and other vegetation under control by mowing, mulching, spraying or a combination of these treatments. Monitor the appearance of your trees to detect signs of insects or diseases. Where feasible, give your trees a thorough watering every 7 - 10 days allowing to dry before the next watering. Protect your trees from animal damage.

## CONTACT INFORMATION

### Western Region Office, Salem:

Phone: (540) 387-5461 ; FAX: (540) 387-5445

### Abingdon Office:

Phone: (276) 676-5488 ; FAX: (276) 676-5581

### Central Region Office, Charlottesville:

Phone: (434) 977-5193 ; FAX: (434) 296-3290

### Farmville Office:

Phone: (434) 392-4159 ; FAX: (434) 392-1550

### Eastern Region Office, Tappahannock:

Phone: (804) 443-2211 ; FAX: (804) 443-3164

### Waverly Office:

Phone: (804) 834-2300 ; FAX: (804) 834-3232

### Augusta Forestry Center:

(Crimora, VA)

Phone: (540) 363-5732 ; FAX: (540) 363-5055

### Garland Gray Forestry Center:

(Courtland, VA)

Phone: (804) 834-2855 ; FAX: (804) 834-3141



### Virginia Department of Forestry

Central Office  
900 Natural Resources Drive, Suite 800  
Charlottesville, Virginia 22903  
www.dof.virginia.gov  
Phone: (434) 977-6555  
Fax: (434) 296-2369

VDOF P00117; 11/2008

This institution is an equal opportunity provider.

# SEEDLING PLANTING INSTRUCTIONS

*Start your seedlings off right with proper planting techniques*



Virginia Department of Forestry

www.dof.virginia.gov

## YOUR YOUNG TREES...

Thank you for purchasing seedlings from the Virginia Department of Forestry. Your young trees were grown in our Nursery seedbeds, using seed from local sources and are adapted for survival and growth in Virginia's climate.

If you reforest with our pine species, you're using genetically improved seed registered under the Virginia's Finest Program.

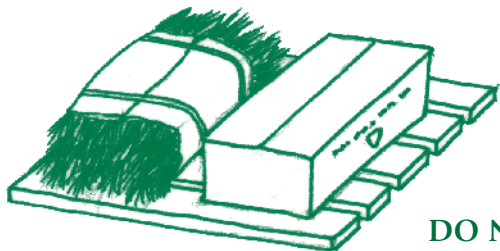
From seed planting to seedling harvesting, our seedbeds were actively managed and properly watered, fertilized, and weeded to ensure healthy growth. This attention and care helped the seedlings get a strong and healthy start - take special care to keep them alive and healthy.

## KEYS TO SUCCESSFUL PLANTING

Successful tree planting means caring for the seedlings from the time they are received until they are planted in the ground. Properly **storing**, **handling** and **transporting** the seedlings will help them survive after planting.

### Proper Storage

Trees should be planted within two weeks of receiving them. Store the packages in a cool, well-ventilated building where they will not freeze; freezing irreversibly damages the root system. Small packages can be placed in a refrigerator. Do not open until ready to plant; tightly closed packages will keep seedlings from drying.



**DO NOT  
STACK THEM!**

CARE IN PLANTING IS MORE IMPORTANT THAN SPEED.

### Proper Handling

Seedlings are delicate, living things and must be handled carefully until they are planted. Do not allow the trees to be exposed to the extremes of sun, wind or rain. Bare root seedlings should be carried in a waterproof bag or bucket with moist material packed around the roots to keep them damp. Make sure the roots are never allowed to become dry!

### Transporting

Seedlings are perishable and should always be protected from temperature and moisture extremes. During transportation, seedlings should be covered to prevent drying or overheating from the sun and wind. The best way to transport seedlings is by refrigerated truck; a cooler also works well (do not allow the tree roots to directly contact the ice or ice packs, which could damage the seedlings).

## PLANTING

### Planting Site

Seedlings should be planted in a location where they can thrive and grow with little competition from weeds, grass, brush and other trees.

**Fields** are usually good planting sites and generally require little treatment prior to planting. If heavy sod exists, it may be necessary to prepare the site by disking, plowing furrows, or herbicide treatment to reduce root competition.

**Cutover Areas** with a heavy growth of brush will have to be site prepared prior to planting. Consult a forester to determine necessary site preparation and planting schedules.

### When to Plant

Planting season varies with weather, soil conditions, and geography. Typically, the best months to plant in Virginia are February and March. Since planting season may extend from December to April, contact your Area Forester for the best planting time in your locality.

Cool, cloudy weather with little or no wind is the ideal time to plant. Do not plant when the ground is frozen, in freezing weather, or on warm, windy days.

## HAND PLANTING

Tools commonly used for hand planting are hoedads, bars, dibbles and shovels.

Avoid these common tree-planting errors:

- Tangled roots
- Air pockets
- Planting too shallow
- Turned up roots
- Planting too deep
- Planting over rocks

### Planting Depth

Loblolly Pine seedlings - at least two inches deeper than grown at the nursery.

All other species - root collar depth (the same depth as they were at the nursery).

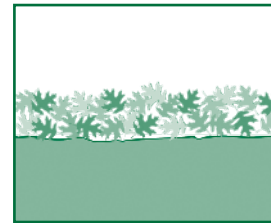
### Seedling Spacing

Here are guidelines for spacing seedling (contact your area forester for specific recommendations):

7 x 10 feet -	622 Seedling/Acre
8 x 10 feet -	544 Seedling/Acre
9 x 10 feet -	484 Seedling/Acre
10 x 10 feet -	436 Seedling/Acre

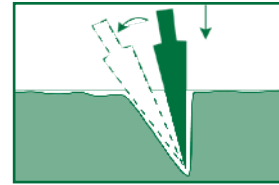
### Getting Started

Take a tree out of planting bag or bucket only after a hole is ready. When exposed, the fine roots can dry out in as little as 30 seconds.

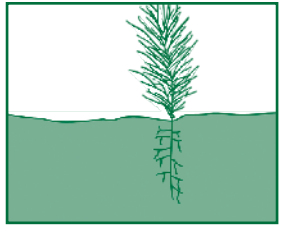


Brush aside loose organic material such as leaves, grass, etc., from the planting spot to expose mineral soil. If organic matter gets into the planting hole, it can decompose and leave air spaces. Roots will dry out when they grow into these spaces.

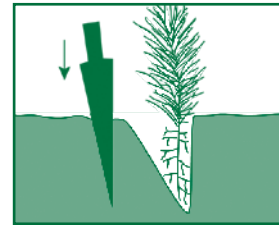
## Hand Planting Using A Dibble or Planting Bar



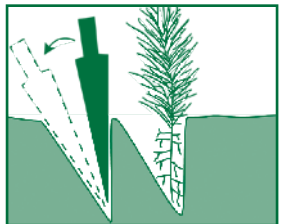
1. Insert bar straight down and pull backward to open hole, making sure the hole is deep enough for the roots to be fully extended. If the roots are curled or bunched up, the tree will often weaken or die, or may blow down later due to poor root structure.



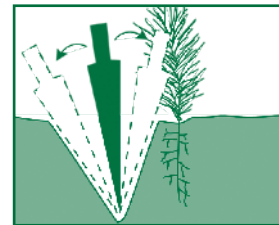
2. Remove bar and place seedling upright at correct depth with roots straight. Hold the seedling in place in the hole, making sure the roots are straight and fully extended, and the seedling is at the proper planting depth.



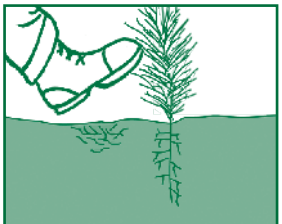
3. Insert bar straight down behind last hole.



4. To hold seedling, pull bar handle back toward the planter to close hole at the bottom of the roots.



5. Push bar handle forward to close hole at the top of the roots. Rock bar back and forth to pack soil firmly against roots.



6. Fill in the last hole by tamping with the heel. If mineral soil is not firmly packed around the roots, there will be air pockets that can dry out the roots, and the seedlings may be weakly anchored.

PLANT SEEDLING WITH ROOTS STRAIGHT DOWN.

DO NOT LET ROOTS DRY OUT!