



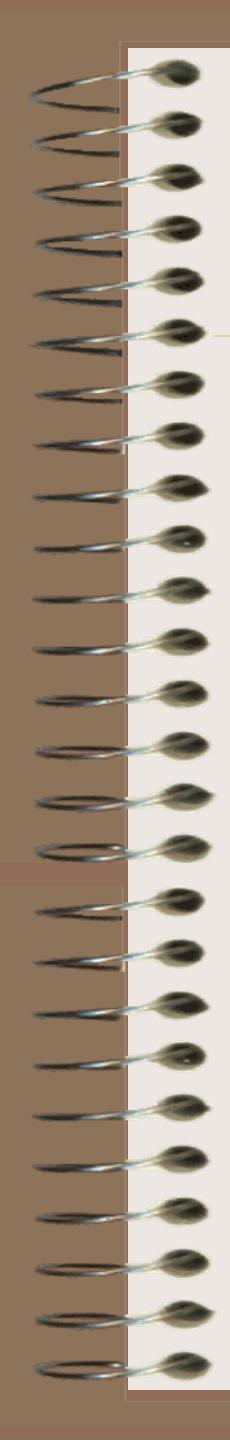
Unit E: Urban Forestry

Lesson 3: Transplanting and Care of Trees



Terms

- Anti-transpirant
- Balled and burlapped
- Bare root
- Chlorosis
- Container grown
- Guying
- Mulch
- Nursery
- Root Circling
- Root zone
- Staking
- Transpiration



What methods are used to harvest trees?

- Commercially available trees are propagated sexually or asexually and grown to a saleable size in a *nursery*.
- Nursery production might involve planting young trees in fields or growing young trees in containers.



What methods are used to harvest trees?

- When the trees reach an appropriate size they are harvested in one of the following 3 ways:
 - Container plants
 - Balled and burlapped (B&B)
 - Bare root (BR)

What methods are used to harvest trees?



- Container plants: grown & sold in containers, most often plastic plant pots.
- Easy to handle and move.
- Little damage to roots & less stress.
- Available year-round.

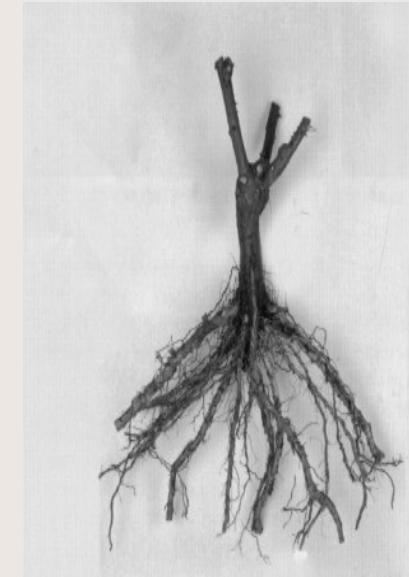
What methods are used to harvest trees?

- Balled and burlapped (B&B) plants are grown “in the fields” & dug with a soil ball around the roots.
- Soil ball is wrapped in burlap for root protection and to limit loss of soil.
- Twine and balling nails hold burlap in place.
- Used for larger species and is the most traditional.



What methods are used to harvest trees?

- Bare root (BR) plants are grown “in the field” and are usually harvested when the trees are dormant.
- Soil cleaned from roots, roots pruned, and trees stored in cool place.
- Used for smaller trees, easy to ship, & lighter weight.



What are the recommended tree planting techniques?

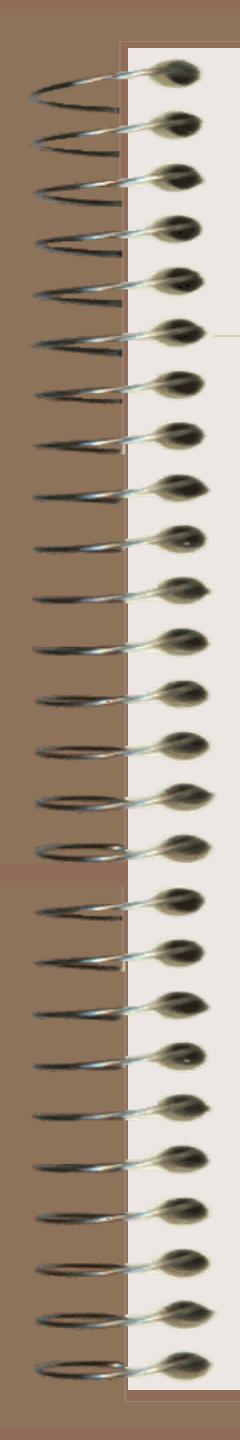
- Balled and Burlapped (B & B) trees are heavy and care should be taken to keep the soil ball intact.
- Bare Root planting and Containerized trees are handled very similar to balled and burlap trees.



What are the recommended tree planting techniques?

11 Successful Steps to B and B Planting

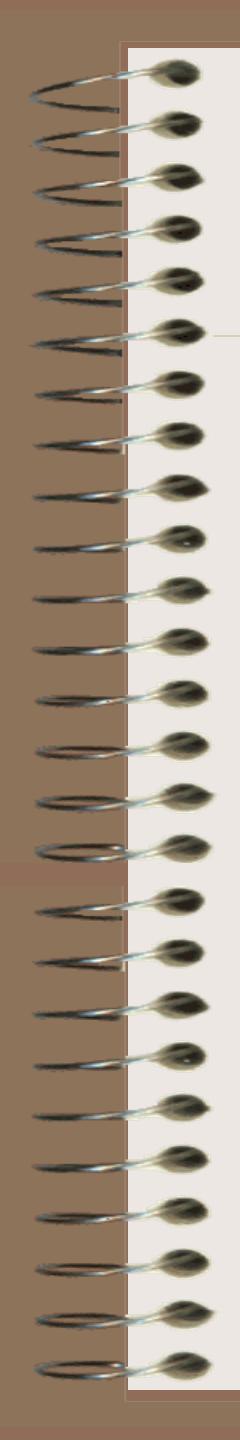
1. Dig the planting hole at least 30 cm wider than the soil ball. The larger the whole the better.
 - The hole should be deep enough so the top of the soil ball is level with the surface of the surrounding soil. A plant should never be planted deeper than it was originally.
 - Deep planting limits exchange of soil gases that can lead to root rot and death.



What are the recommended tree planting techniques?

11 Steps to B & B Planting (cont.)

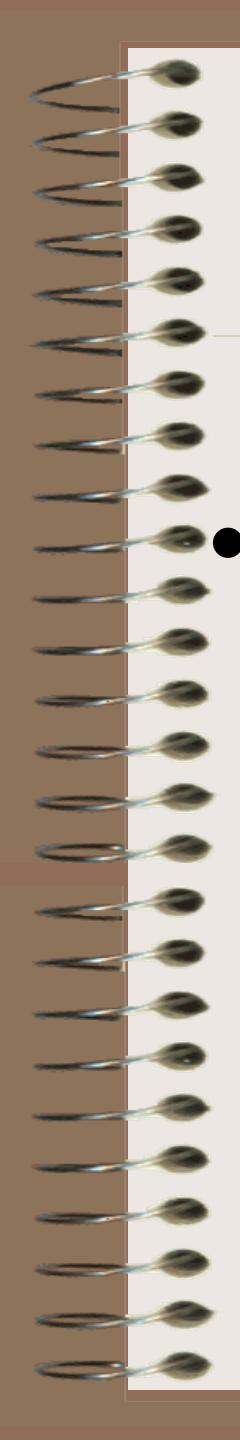
2. Once the hole has been checked against the size of the ball for depth, carefully place the plant in the hole with the burlap and twine intact.
 - Handle the plant by the root ball.



What are the recommended tree planting techniques?

11 Steps to B & B Planting (cont.)

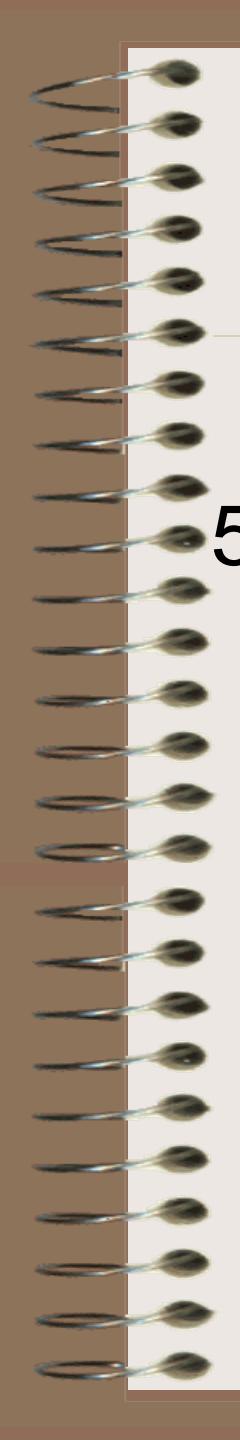
3. Then, remove all twine & burlap to prevent girdle in the roots.
 - Exposed burlap takes water from soil.
 - Green burlap is treated with preservative & must be removed.
 - Plastic wrap must be removed, but metal cages can stay.



What are the recommended tree planting techniques?

11 Steps to B & B Planting (cont.)

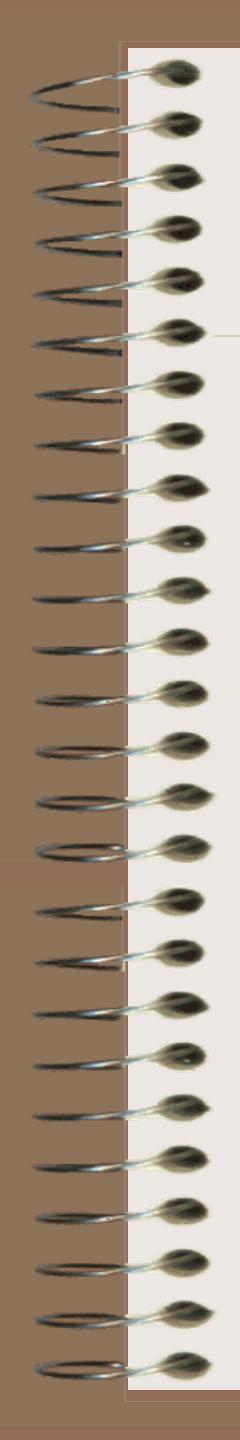
- 4. Position the plant with the best side facing toward the main viewing point.
 - Stand back and position the tree perpendicular to the ground.



What are the recommended tree planting techniques?

11 Steps to B & B Planting (cont.)

5. Once in position, fill the planting hole half way with the same soil that came from the hole.
 - Digging helps loosen the soil and makes it easier for roots to penetrate the soil, tapping the soil down helps to reduce air pockets and the amount of settling that will occur.

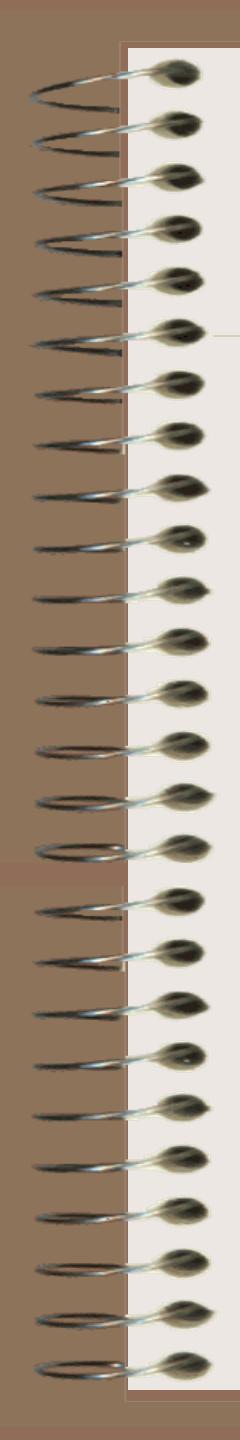


What are the recommended tree planting techniques?

11 Steps to B & B Planting (cont.)

6. Fill the hole with water and let it soak into the soil and soil ball.

7. Complete the backfill process.
 - Do not pack the soil by stepping on it.

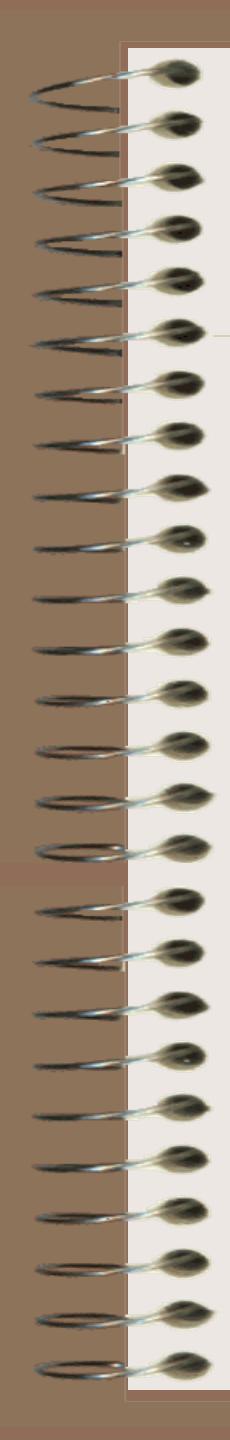


What are the recommended tree planting techniques?

11 Steps to B & B Planting (cont.)

8. Pile loose soil in a circular mound towards the outside part of the hole, which creates a large saucer to hold water.

9. Water the tree by filling the saucer.



What are the recommended tree planting techniques?

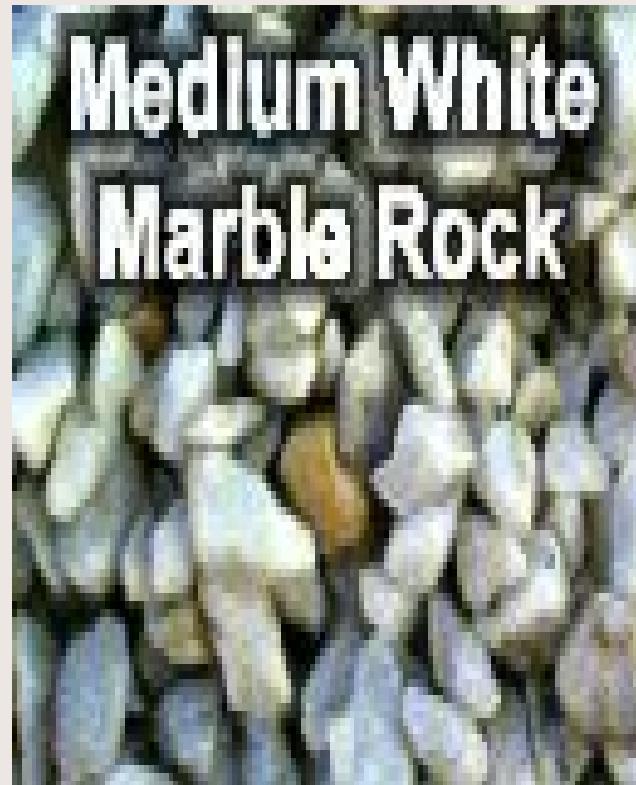
10. ***Staking***: performed to hold newly planted trees in place.
 - 2-3 stakes are in the ground outside the tree.
 - Often, trees less than 3.6 meters need staking.
 - ***Guying***: cables are attached to tree trunk to anchor the tree to 3 ground stakes.

What are the recommended tree planting techniques?

11. **Mulch**: Placed on soil to keep soil moist and reduce weed growth.
- Examples of organic mulch: wood chips, pine needles.
 - Examples of inorganic mulch: Sand, rubber, gravel.



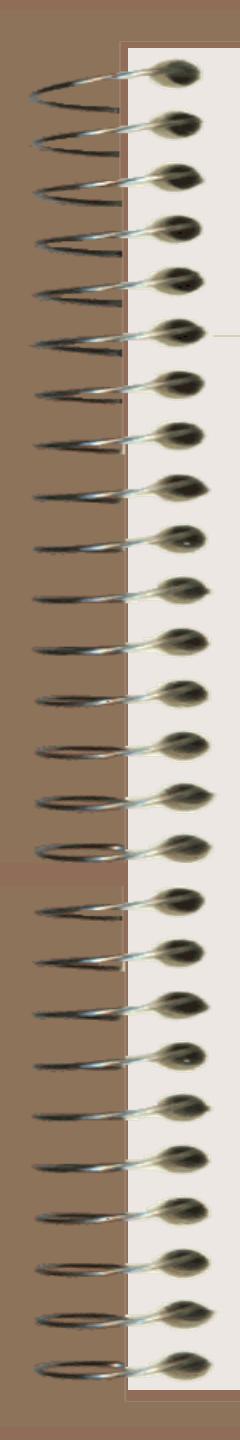
Which is an Inorganic Mulch?



What are the recommended tree planting techniques?

3 Steps for Container Grown Planting

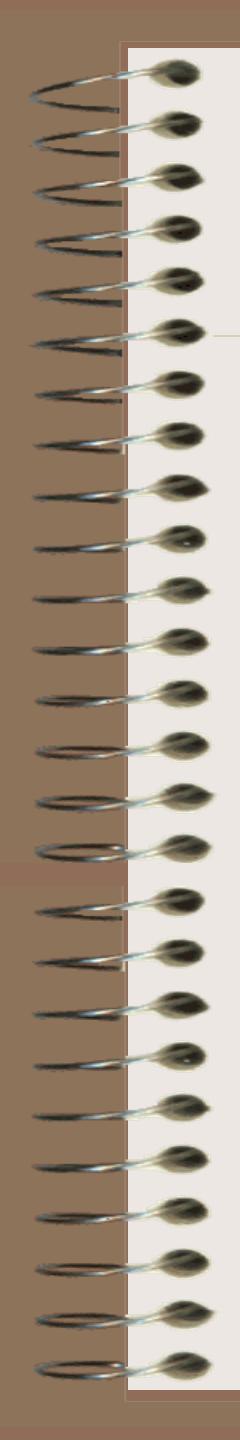
1. Remove tree from container by inverting plant, tapping the sides on solid surface and slide out soil ball.
2. Check for ***root circling*** (roots have grown around the inside of the pot).
 - Too much circling causes health problems.
 - If too much circling, cut the roots with a knife.
3. Follow planting procedures for B and B.



What are the recommended tree planting techniques?

5 Steps for BR planting

1. Remove all wrapping material from around the plant's roots and discard.
2. Dig hole as deep as longest root and at least 30 cm wider than the diameter of roots.
3. Determine the depth at which tree should be planted by locating a stain on the bark of bare root that marks the level of original field height. The tree should be planted at the same depth as it was in the nursery.



What are the recommended tree planting techniques?

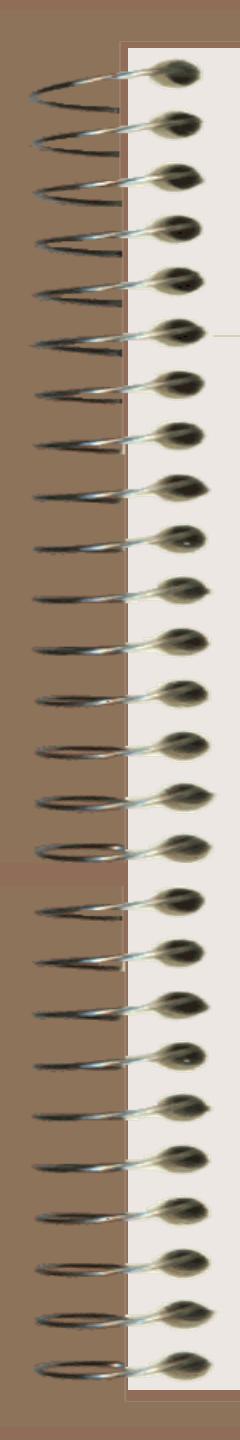
5 Steps for BR planting

4. Once hole has been dug, replace with tilled soil at bottom of the center to form a cone. Rest the crown on this cone so the tree is at the proper depth.
 - Carefully, spread the secondary roots out over the rest of the hole in their natural shape.
5. Backfill hole until half-filled and water and complete backfilling.

What are the recommended tree planting techniques?

- Before leaves emerge in the Spring are the best times to dig trees, due to less stress on the trees during those periods. However, the best times to dig depends on the species.
- Plant trees in the spring when temperatures are cooler, rainfall is abundant, and plants are entering an active growth.
- Fall is a good time for transplanting.





What are the recommended tree planting techniques?

- ***Transpiration***: excessive lost of water vapor through leaves.
 - *Why is this a concern?*
- ***Anti-Transpirant***: a spray that cuts down on water loss by sealing openings in the plant's leaves....works well with evergreens.

How should trees be cared for after planting?

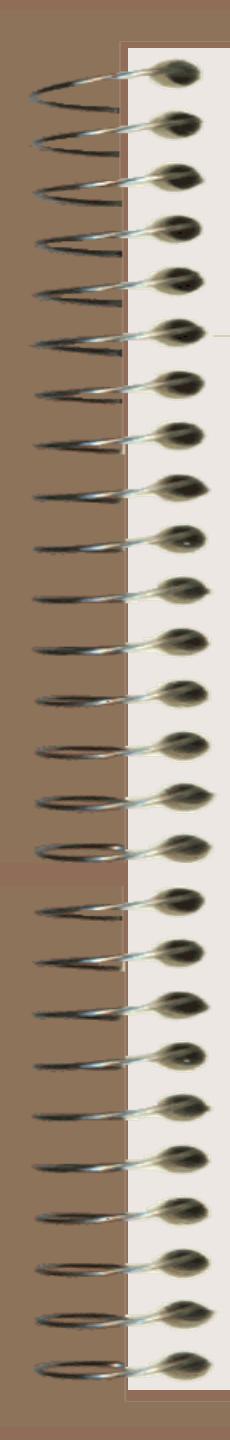
- Most trees need little care once they become established.
- Watering can reduce stress and maintain tree health.
- Fertilizer can boost plant health.





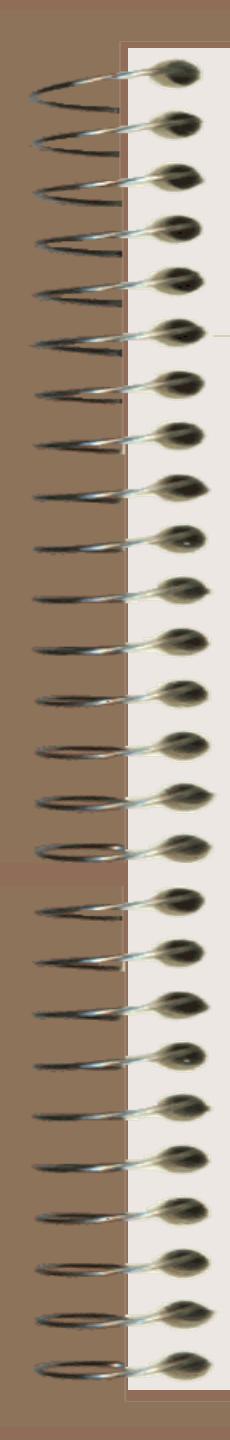
How should trees be cared for after planting?

- Water is the single most important factor in the growth and development of a tree.
 - For planting trees it is important to have moist soil to encourage root development. Roots need oxygen.
 - Monitor the level of soil moisture. In warm weather, soak the soil every 10-14 days provided the soil is well-drained and dryness.



How should trees be cared for after planting?

- Established trees benefit from a good soaking of water every 2-3 weeks during periods of drought.
- Water can be applied through: sprinklers, soaker hoses, watering bags, watering cans, microirrigation, and soil watering needles.



How should trees be cared for after planting?

- Most trees never need to be fertilized.
 - **Chlorosis** or the yellowing of leaves could be an indication of a nutrient deficiency.
- If fertilizer is needed, the best time is in the spring as buds begin to swell and in the fall when the leaves drop.
 - Deliver fertilizer to **Root zone**: an area where roots are found (within top 0.6m of soil and 1 ½ times the width of tree).



Review and Summary

- What are the methods of harvesting trees for transplanting?
- Explain recommended tree planting techniques and why they differ?
- Describe post-planting care of trees.
- What is chlorosis?
- What is an anti-transpirant?
- What is guying?