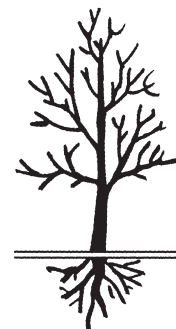


RPG Times

Fall 2003

A Publication of the Roots Plus Field-Growers Association of Florida



Planting Trees and Planting Depth

by Ed Gilman, Professor
University of Florida



I am fortunate to have had the opportunity to travel to many parts of this great country during the last 25 years and have seen quite a number of trees planted in many soil types. I dug up more than 2000 trees in many different states to study root system response

to planting. I've planted thousands of trees in more than 30 tree planting research projects, all of which are published in peer reviewed scientific journals. Combining this experience with that of many green industry professionals, we developed the following guidelines for planting trees in landscapes.

Last month I was conducting a training session in the Montreal Municipal Nursery in Canada. We excavated several 3-inch caliper trees in the field. What did we find? Trees planted 6 to 10 inches too deep in the field. When these trees were dug in the nursery, they were already 6 to 10 inches too deep in the root ball. And if they are planted with the top of the root ball even with the landscape soil they will be 6 to 10 too deep in the landscape. Some of the 30 professionals in the class remarked that they regularly see worse. I too have seen much worse, but fortunately not in Florida. Florida continues to produce some of the best nursery stock in the country. We are spoiled.

Planting Trees, continued page 4

Wire Baskets: Just The Facts



As members of the Roots Plus Field-growers Association of Florida, we are often asked questions about various tree related issues.

One of the commonly asked questions is; should wire baskets be removed from trees at planting? As members of the field-growing industry we are obviously dependent on wire baskets, therefore, you would probably expect a biased response. It is true that our members have well over 75 years combined experience in this industry, and we wouldn't be field-growing trees or using wire baskets if we didn't believe it provided an exceptional quality product. However, the response we give to the above question is more scientific and fact based. While we do draw upon years of experience, we know our response is supported by recent research into whether or not leaving wire baskets intact is detrimental to tree health.

First we would like to address the function of a wire basket on a field-grown tree. Wire baskets were designed to support a root ball on the top and sides. The top and side wires support the root ball during shipping and transplanting, insuring the root ball arrives intact. They also provide support to the tree during the time it is establishing in the landscape. This support provided by the basket, along with the weight of the root ball, is the reason field-grown trees rarely need to be staked. The wire basket also serves one other very important purpose; it provides a means for lifting the tree by the root ball. This is the preferred method of lifting trees because lifting the entire weight of a tree by the trunk can cause damage to the trunk and cambium. Sometimes

Wire Baskets, continued page 5



RPG at the SNA Trade Show in Atlanta

By Jimmy Stewart

For the first time ever
Roots Plus Growers
Association of Florida

had a booth in the SNA Trade Show in Atlanta. During my two days attending the show, there were many people that wanted more information on what exactly RPG was. I was asked frequently about hardening off of trees and how it was done in Florida. This was a great opportunity to educate people outside Florida on what RPG is and what we are doing.

When I entered the trade show the first thing I noticed were the shocking and dying trees. I began talking with the field growers and I learned that many of the balled and burlapped trees were dug two and three days before the show. They had not been hardened off as RPG would. As a result these trees were declining quickly, many were already dead.

When digging field grown trees, the hardening off process requires that these trees be dug four to six weeks in advance. During this period the soil should be kept moist at all times. Water application should be closely monitored. Too much water or not enough will not allow for adequate root production. Type of soil is an important variable in maintaining moisture content. Clay based soils may require less amounts of water fewer times a day. If possible, do not disturb the tree during the hardening off period. Seat the tree properly back in the basket to prevent air pockets which might decrease root production. After four to six weeks, randomly lift several trees in a crop to visually check root production.

These are just a few tips we need to share with out of state growers and buyers. They need to understand that one aspect of RPG is keeping dug trees in the nursery until roots are visible through the burlap. This greatly increases the survival

RPG Notes for Growth

"A Fast Changing World Means
Critical Awareness To Our Mar-
kets"

by Jack Siebenthaler



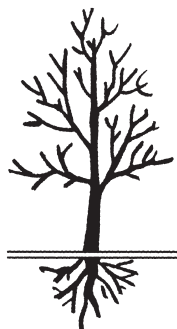
Every so often, the automobile manufacturers offer their buying public a change in choices for truly new products. The same can be said for other major consumer items we are urged to consider. For the interim years we are offered only a different paint color or some minor cosmetic approach to keep us satisfied.

What can we "tree people" and landscapers offer to our public? Instead of going along from year to year with the same old products, be they "egg can ligustrum," or 2" diameter live oak trees, it behooves us as progressive marketers and developers of our products to constantly be on the lookout for new and improved ways to build our business.

By researching new tree varieties, at least new to our region, we can stay ahead of the curve to which our competitors stick. Many of the finest nurserymen in the history of our industry are remembered for their innovative methods of trial and error introduction and production techniques. Propagation methods can often be changed for the better. Sales methods should not be considered as a static in the industry. Remember that those who are willing to give serious thought to innovation are usually the ones who become leaders. On the other hand, there are the many who are satisfied to fill the vanguard of the ordinary.

RPG Growers deserve to be called innovators. These are growers who are not satisfied by staying with the "tried and true" all along the way. To be understandably different in a reliable way is to be one who will lead and who will be more successful than he who stays behind and "lets George do it."

Like other leaders in industry, let's maintain a critical awareness of our market.



Roots Plus News

Great Southern Tree Conference 2003

The 3rd Annual Great Southern Tree Conference (GSTC) is scheduled for December 4-5th. One change for this year's conference is that it will be held on Thursday and Friday. This year's conference format will feature two half days inside the conference center and two half days outside at the Great Southern Tree Conference demonstration site.

This year promises to be a great conference with more exciting speakers than ever. This year's featured Speakers include; Jim Paluch, a leading consultant and trainer in the Green Industry for over 15 years, and Jim Urban, with 25 years experience as a Landscape Architect in the northeastern United States. Jim Urban's experience includes being a guest lecturer at the Harvard University graduate School of Design. The conference also welcomes Dr. John Ruter who has been with the University of Georgia since 1990. Dr. Ruter is known primarily for his research in pot-in-pot production systems and controlled release fertilizers.

The conference will feature many tree related topics with over 20 speakers. Demonstration site topics will include IPM, nursery mechanization, weed control, soil amendments and much more.

For more information about this year's conference contact the FNGA at 800-375-FNGA or visit www.great-southerntreeconference.org.

Spring Field Day a Success; 6th Annual event planned for April 2004

The Annual RPG Field Day on March 13th, 2003 was a huge success once again. Over 180 people were in attendance to learn about many aspects of the tree industry at RPG member nursery Stewart's Tree Service. RPG, ISA and University of Florida Extension are already hard at work planning next year's field day. The 6th Annual RPG Field Day will be on April 22nd, 2004. Look for more information in the Spring edition of the RPG Times. Registration brochures will be mailed in February 2004. Call 352-528-3880 for more information.

Sleeve ≠ RPG

Regular buyers of field grown trees are most likely familiar with the black sleeve of weed-cloth like material over the root ball of each tree. This sleeve covers the wire basket after harvest and helps to prevent new roots from taking hold in the ground during the hardening off period. Please note that though many growers ship trees with these sleeves over the root ball, that does not guarantee that the trees have been hardened off. Be sure to look for the RPG tag on the trees you buy as your guarantee of quality hardened off trees. Trees with a black sleeve

RPG Welcomes New Members!

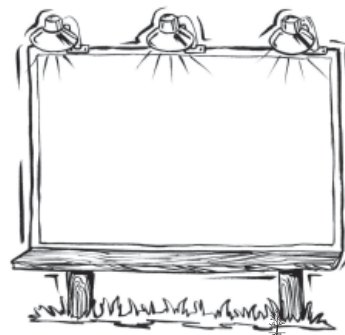
The Roots Plus Growers Association is still growing!

We welcome two new association members, FMT Farms in Brooksville and J&J Tree Farm also in Brooksville. RPG is now 17 grower members and 11 associate members strong. If you are interested in membership or in learning more about the Roots Plus Growers Association, please give us



Download your cue cards at rootsplusgrowers.org

If you don't already have the handy RPG tree grading and tree planting cue cards, there's an easy way to get them... online at rootsplusgrowers.org. For laminated copies, just give us a call at 352-528-3880.



I begin planting when the tree is sitting in the holding area at the job site. I find the point where the top-most root in the root ball emerges from the trunk. It should be within two inches of the top surface of the root ball. This zone is often called the root collar, root crown, or root flare and may or may not be present where the top-most roots join the trunk. Not all nursery trees have a root flare, especially those from cuttings. This is normal and no cause for concern.

There should be no big roots circling or crossing over the top-most roots in the root ball. You might have to displace soil above the top-most root during the planting process in order to check for and treat these root defects. It's not the end of the world if there is more than 2 inches of soil over the top-most roots; you simply have to do a little more work at planting to remove it. Dig the hole shallower than the root ball to account for any soil that will need to be removed once the tree is in the hole.

Dig a shallow planting hole as wide as possible. Shallow is better than deep! Many people plant trees too deep. A hole three times the width of the root ball is often recommended but about one-and-one-half the diameter is more common. Wider holes should be used for compacted soil, rocky sites, and wet sites. A wider hole might help roots from becoming deformed in these tough situations. The depth of the hole should almost always be LESS than the height of the root ball, especially in compacted or wet soil. The only exception I can think of would be if the top-most roots in the root ball are RIGHT AT the top surface of the root ball. But even then I would plant an inch or two high if they were my trees. If the hole was inadvertently dug too deep, add soil and compact it firmly with your foot.

If the top-most root is buried in the root ball then you will have to remove enough soil from the top so the point where the top-most root emerges from the trunk is within the top two inches. Check for and cut circling roots especially in the top half of the root ball. If these cut roots are large, the tree might shock and could die. It's OK if the point where the top-most roots emerge from the trunk is exposed and visible. We have found at the Great Southern Tree Conference demonstration site that this is not a problem, at least on live oaks and magnolias.

Position the point where the top-most root emerges from the trunk slightly above (like 2 inches)

the surface of the landscape soil. If the roots are a bit deep in the root ball then the top of the root ball will be more than 2 inches above the landscape soil.

If the tree is a little deep in the hole, the tree must be lifted and reset after adding soil to the hole. Continue this until it is set at the appropriate depth, it is always better to be planted too high rather than too deep. Once it is at the appropriate depth, place a small amount of soil around the root ball to stabilize it. Soil amendments are usually of no benefit. The soil removed from the hole makes the best backfill unless the soil is terrible or contaminated.

Straighten the tree in the hole. The top of the root ball might be sticking out above the backfill soil. Cover the sides of the root ball with mulch or loose soil and apply mulch to as large of an area as possible or as the top to at least an 8 foot diameter circle around the tree. Construct a berm out of mulch or soil at the edge of the root ball only if the tree will be watered with a hose, bucket, or other high volume means. Constructing a berm in all other situations will not provide more water to the root system. If soil is used to construct a berm, plans should be made to rake the soil away from the root ball later in establishment. Water the mulch well after it is spread.

Consult the University of Florida web site (<http://hort.ufl.edu/woody/planting>) on tree planting for more detailed information.

P.S. Planting a tree correctly is a lot like the world's oldest profession. It's hard to describe but you know it when you see it. 🌱



**Mark your
calendar for
the next
RPG Field Day!**

April 22, 2004

**co-sponsored by the Florida Chapter ISA
& University of Florida Extension
for registration details call 352-528-3880**

this damage may not be noticed immediately and symptoms of this unseen damage can appear years later as the tree declines in the landscape.

The concern frequently expressed about wire baskets relates to the tree's root system. The question is, does the wire girdle the tree's root system and cause the tree to decline. The simple answer to this question is NO. Research has shown that a root growing near the wire will eventually grow into the wire. It will initially be indented by the wire and, as it continues to grow, will grow around the wire completely. The root then grows new tissues on the other side of the wire and the xylem vessels reconnect. Researchers considered several factors to determine if this was damaging to the tree. The researchers did not assume that because the root grew completely around the wire it was still a functioning root. They compared xylem vessels in roots that grew around wire and roots did not and found them to be nearly similar. They also used dye flow tests to show that water movement through these roots was not impeded.

Dr. Glen Lumis published the results of his research into root growth around wire baskets, as well as the results of similar root research, in an article titled "Wire Baskets: A Further Look, Research sheds new light on the wire-basket controversy" which was published in *American Nurseryman*. The following is an excerpt from this article:

After several years of field and laboratory study, I have made the following conclusions about wire baskets and their effects on root growth.

- Roots grow around basket wire, forming a complete union of bark and wood tissue; roots are not permanently girdled.
- Root tissue formed after growing over wire permits translocation.
- There appears to be no injury to, or break in, the root periderm that would allow pathogens to enter a tree.
- Basket wire remains intact in soil for many years, and wire strength diminishes slowly.
- Removing wire baskets at planting time is not necessary to assure growth and survival of large tree roots. However, you should remove any rope across the

top of the ball, and bend back or remove basket loops.

- Using a correctly sized basket for each root ball is imperative. The top horizontal wire should be at least several inches above the top of the soil ball.

Another article titled "Should wire baskets be removed from trees?" was published in the *FNGA Greenline* in September of 1995. This article addressed many of the same topics as well as mentioning a survey done by Dr. Edward Gilman of the University of Florida. The article states that Dr. Gilman looked at 14 inch caliper trees that had been planted 12 years previous as 4 inch caliper trees in 44 inch wire baskets. This survey found that welds holding the wire together were mostly broken but that the wire itself was strong and mostly intact. Dr. Gilman found in this survey that "the spacing of the wire in the baskets appeared to provide ample room for roots to expand with no interference or restriction of roots." The article goes on to say that "there was no evidence the wire was affecting the root system or the tree." The following excerpt is from "Should wire baskets be removed from trees?":

When a tree declines or dies, look at all possible causes. There are an estimated 40 million trees transplanted within the last 35 years in wire baskets and few reports of trees declining from damage or restrictions of roots caused by the use of wire baskets. Root tissue appears to grow around the wire and reconnect.

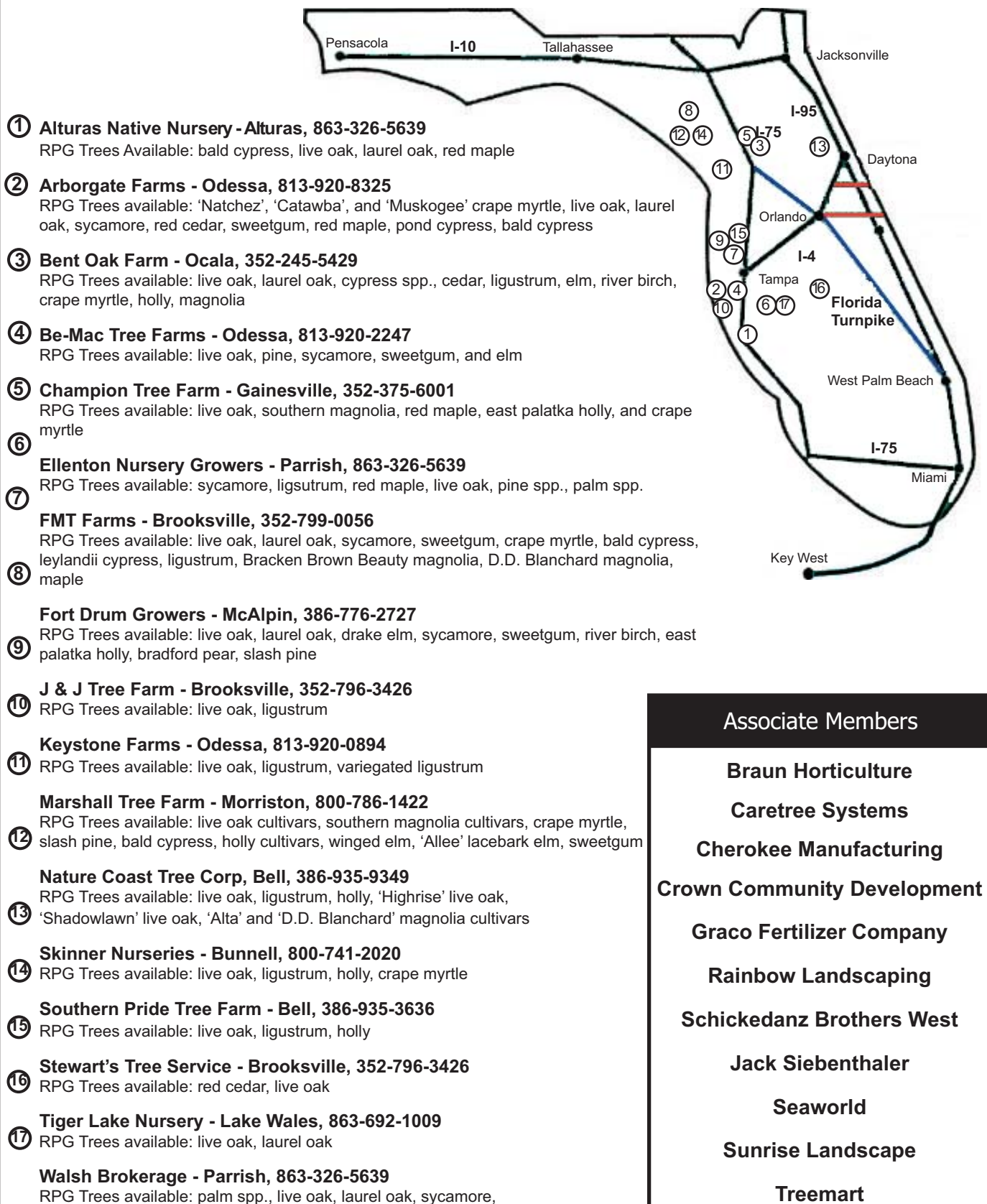
Concern with wire baskets should focus on their real function, that being a proper method of lifting the tree and the support the top wire gives to the root ball during windy conditions and the establishment of the tree. It has been observed that improper removal of the wire can result in serious damage to the root system which outweighs any benefit received by removal of wire. Proper staking and guying can usually prevent this. It is also understood why most growers and landscape contractors have refused warranties when baskets are removed or cut away.

For more information about wire baskets or other tree related questions please contact a member of the Roots Plus Field Growers Association of



Roots Plus Growers Association Members

locator map and available species



RPG TIMESline

October 22-23rd, 2003 - Live Oaks in the South Seminar, Tampa, FL
Visit www.floridaisa.org or call 941-342-0153

October 30 - November 3rd, 2003 - ASLA Annual Convention & EXPO, New Orleans, LA
Visit www.asla.org for more information

November 7th, 2003 - ISA Grades and Standards Workshop, Orlando, FL
Visit www.floridaisa.org or call 941-342-0153

November 14th, 2003 - ISA Grades and Standards Workshop, Jacksonville, FL
Visit www.floridaisa.org or call 941-342-0153

November 19th, 2003 - ISA Grades and Standards Workshop, Ft. Lauderdale, FL
Visit www.floridaisa.org or call 941-342-0153

December 4-5th, 2003 - 3rd Annual Great Southern Tree Conference, Gainesville, FL
Visit www.greatsoutherntreeconference.org or call 800-375-FNGA

January 29-30, 2004 - Gulf States Horticultural Expo, Mobile, AL
Contact Gulf States Horticultural Association, 334-821-5148

February 13-14th, 2004 - Jacksonville Horticultural Trade Show, Jacksonville, FL
Contact the Northeast Chapter FNGA at nefnga@aol.com or 904-292-1117

RPG Information

If you would like more information about the Roots Plus Field-Growers Association of Florida please complete the following and return it to:

Roots Plus Growers
17350 SE 65th Street
Morrison, FL 32668

☐ Please add me to your mailing list

Please send me information on the following:

☐ Tree Transplanting Research

☐ Tree Transplanting Tips

☐ RPG Membership

☐ Other _____

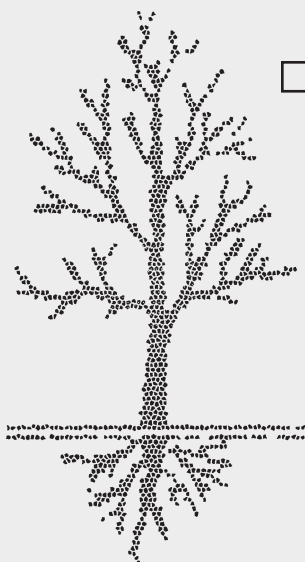
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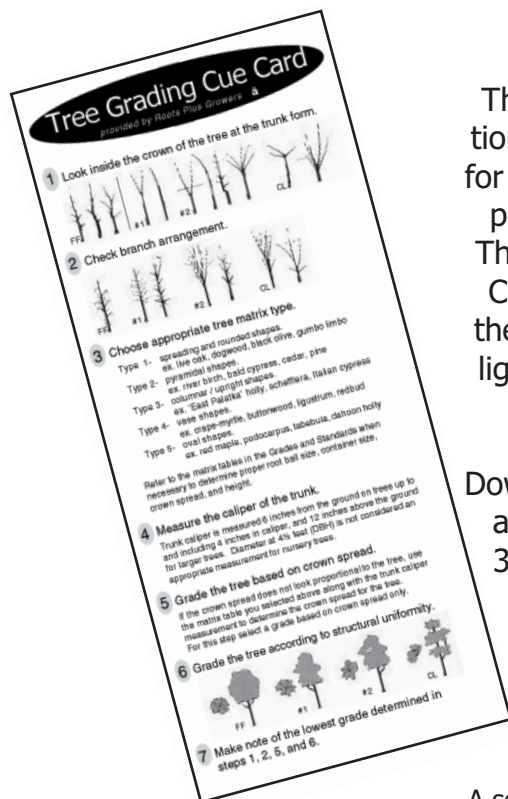
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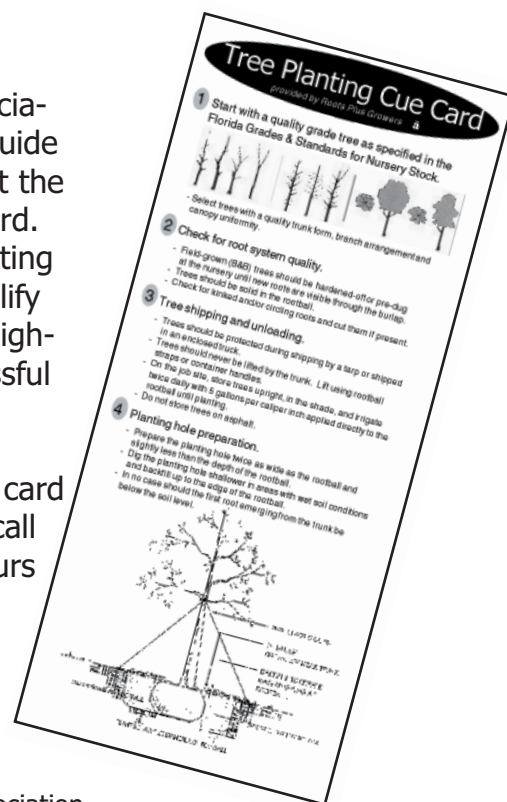
Phone _____ Fax _____





The Roots Plus Growers Association has developed a pocket guide for tree planting to supplement the popular Tree Grading Cue Card. This 3x7" laminated Tree Planting Cue Card is intended to simplify the tree planting process by highlighting eight steps for successful transplanting.

Download a copy of each cue card at rootsplusgrowers.org, or call 352-528-3880 to request yours today!



A service of Roots Plus Growers Association



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