

# FERNBROOK NURSERY, INC.

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## Transplanting and Maintenance of Trees and Shrubs

October 3<sup>rd</sup> ASLA Field Session 01 Nurseries of South Jersey

Presenter Larry Kuser

### 1. Root Ball Shopping

- A. Is the ball of adequate size for the top? Do the trees meet the minimum requirements laid out by the American Standard for Nursery Stock, approved by the American National Standards Institute Inc. (ANSI)?
- B. Is the trunk of the tree or stem of the shrub centered in the root ball? If not, the plant will lack a well-distributed root system. Roots on one side will have large wounds.
- C. Is there an obvious trunk/root flare at the top of the soil ball? If not, and the trunk looks like a straight pole inserted into the ball, the root system is too deep within the ball. This may have occurred because the liner was planted too deeply. If you purchase this root ball, the installer should be warned to make adjustments to ensure the tree isn't planted in the landscape too deeply, which could stress it.
- D. What is the actual configuration of the ball? Is it a well-shaped, hand-dug ball with soil that's firm but not overly hardened? Or has the ball begun to compress, compact or "pancake" from having been held improperly for too long? Obviously, if you can find out how long a plant has been held before it was delivered, it's to your benefit.
- E. Is the ball free from damage? Has the burlap been torn or the wire basket knocked out of shape? This suggests rough handling. If the ball has been dropped or roughly handled, root damage may have occurred. A root ball that looks rewrapped may suggest the same inappropriate handling and raise a red flag.
- F. Is the trunk loose in the root ball? If so, roots may have broken, making establishment in the landscape more difficult from an installation standpoint. Once planted, staking may be needed and new root growth may not occur.
- G. Is the balls soil moist? Was there adequate moisture in the field soil when the plant was dug? If the plant has been held, has the soil moisture been maintained or has the ball been allowed to dry? This is particularly critical if the plant has broken dormancy and is trying to absorb water to support its leaves. **Keep in mind that with B&B plants, many roots are left behind in the grower's field.**

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- H. Is there evidence of weed growth? Are weeds beginning to sprout through the burlap or are there weed remnants that let you know weeds have been pulled from the ball? You don't want to inherit weeds from the grower's field that can contaminate landscape sites. Determining if the soil ball contains any pests (such as grubs) or disease will be almost impossible.

## **2. Post Planting Techniques.**

How long it will take a tree to become established in the landscape depends on many factors, some of which can be controlled and some cannot. If the tree is to survive and thrive at its new site, rapid root proliferation through the backfill and then into the site soil is imperative. It takes time for the roots to grow and gain access to a greater reservoir of soil moisture- more time than you might think. The most neglected part of the planting process is the extended commitment to watering during the period of establishment.

Understanding how long a tree will require supplemental watering- and your ability to provide it- may influence your selection of tree size and species. After planting, water stress is usually the factor that most limits growth. Even if the soil moisture is adequate, the root system may not be able to absorb water fast enough to meet the needs of the plant. Nutrients and other factors are usually less limiting than water during the initial period after planting.

As a general rule, it takes one year per caliper inch for a tree to reestablish its roots to the length they would be if the tree were not transplanted (e.g. 3" caliper tree takes three years to be fully reestablished).

## **3. Tree Transplanting (Fall vs. Spring)**

Some trees are best transplanted in the spring, as opposed to the fall. Some species fail to adequately regenerate their root systems in the fall. They often have borderline hardiness and are best moved in spring so that they'll have more time to become established before winter. The following is the list of plants to be planted in the spring: fir, birch, hornbeam, hickory, flowering dogwood, common persimmon, beech, ginkgo, American holly, walnut, golden raintree, golden chaintree, sweetgum, tulip tree magnolia, blackgum, ironwood, sourwood, popular, Prunus species, golden larch, oak, willow, sassafras, cypress, and hemlock. If these species must be planted in the fall, be sure to allow for extra water at the time of planting and until the ground freezes.

## **4. Plant Stress and Insect Pest Influence.**

Do environmental stresses increase insect attacks on woody plants, or is the statement too simplistic? Seventy experimental studies were conducted in which insect presence was

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measured on plants subjected to water stress, pollution and or shading. Overall, plant stress had a variable effect on insect growth rate, reproduction, survival, or population density. In general, borers and sucking insects performed better on stressed plants as opposed to gall- makers and chewing insects, which declined. The performance of chewing insects worsened on slow growing stressed plants as opposed to fast growing stressed plants. The reproductive potential of sucking insects was increased by pollution, but reduced by water stress.

## 5. Tree Wrapping

Tree wrapping, or wrapping the trunk of the young trees after transplanting, is not recommended. In the past, wrapping was done on fall transplants in order to reduce sunscald or frost cracks. However, replicated studies have shown that wraps are not a deterrent to these problems. Wrapping can actually create problems by reducing photosynthesis because young stems contain chlorophyll, and increasing potential pest attack from borers and certain diseases. The best benefit from wrapping is protection from chewing rodents. For this purpose, it should only be in place for the dormant season.

## 6. Irrigation scheduling

During periods of high transpiration, trees in the process of, or having been recently transplanted may require watering every second or third day to avoid drought induced inhibition of root growth.

For surface irrigation, estimated quantities are from ½ gallon to 1 gallon per square foot of root zone per application. Even with moderate rainfall, periods of high temperatures, low humidity and high winds cause high transpiration rates and rapid soil moisture depletion. It is important to keep the top 12” of soil evenly moist throughout dry periods. Excessively dry soils causes the death of small roots, which reduces the tree capacity to absorb water for days or even weeks after the soil is remoistened