

RPG NEWS

ROOTS PLUS FIELD GROWERS ASSOCIATION OF FLORIDA

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A NEW LOOK AT FIELD-GROWN LANDSCAPE TREES

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Field growing and transplanting of trees has been practiced for thousands of years. Newer systems for growing and transplanting trees, such as container production, have been introduced during the last fifty years. These two different production methods have both proven capable of producing high quality landscape trees. However, field-grown trees have received negative publicity for having low survival rates and being of poor quality in general. Research from the University of Florida and other universities has proven this untrue; however the myth still lives on. The real issue is not which production method the tree has been grown under but of the overall quality of the tree at the time of sale. It is safe to say that poor quality trees are produced in many different production methods, the point is to only buy from growers who produce quality.

A field-grown tree is planted into native soils, grown to a harvestable size, harvested prior to sale, and transported to the job site. Field-grown trees are referred to as balled and burlapped (B&B) because the root system is harvested and wrapped in burlap. Trees are frequently placed in wire baskets to support the root system and to make it possible to lift the tree by the root ball rather than the trunk. Research has shown that tree roots are not girdled by the wire basket, instead the roots grow around the wire and the xylem tissues reconnect, likely having very little influence on the effectiveness of the root. Trees in a field-grown nursery are often maintained with drip irrigation, fertilizer, selective shoot pruning, and root pruning. Drip irrigation and fertilizer help build a strong, dense root system as well as a healthy canopy, while selective pruning is used to manipulate the tree into the desired dominant leader form.

Root pruning, an important practice in quality field-grown nurseries, is the cutting of roots during production to increase root density in the harvested root ball. Roots that are pruned prior to harvesting and those cut during the harvest will produce many new roots near the cut end of the root. Research on live

oak found that root pruning causes a 6-fold increase in the density of fine roots in the root ball (Gilman and Yeager, 1987). It has been widely reported that field-grown trees only have 2% to 8% of their original root system at harvest. In fact, research in Florida on field-grown laurel oak and holly trees found that trees had between 70% and 80% of their entire root system weight at harvesting and that the roots removed at harvesting were replaced within 6 months after digging (Gilman and Beeson, 1996). In the same study, roots on container-grown trees regenerated slower than the field-grown trees, field-grown trees grew more during the first year after transplanting, and fourteen weeks after transplanting, when irrigation was discontinued, the container-grown trees were more stressed than the field-grown trees.

Much of the difference between establishment and stress of these production methods is likely due to the potting media used by container growers. The use of artificial potting media makes the root balls lighter. However, the water easily drains out of the potting media when trees are planted in finer sandy soils (Costello and Paul, 1975). This leaves the root ball drier and does not provide the necessary water for the plant to survive under sometimes harsh landscape conditions. Field-grown root balls are heavier but provide a compatible soil type as well as a greater soil volume for water storage. The additional weight of field-grown trees also makes staking unnecessary after planting.

Quality field-grown trees should be hardened-off or cured after harvesting. This hardening-off process lasts 3 to 4 weeks and it simply involves providing the tree with optimum irrigation during the few weeks after harvesting. This step, as simple as it may seem, is crucial to the health and survivability of the tree. After the tree is hardened-off it is ready to ship to the landscape site and new roots that have begun to develop are ready to begin growing immediately into the landscape. Research comparing root area and root number of field-grown and container-grown trees has been done on live oak. After three years of growing in the landscape, field-grown trees had more root area and root number than container-grown trees (Marshall and Gilman, 1997).

One of the biggest problems in the tree industry today is the planting of trees that have developed circling roots. Circling or deformed roots are formed

when a tree is grown for too long in a container. This problem exists in containers of all shapes, sizes, and materials. When compared to a standard plastic container, air pruning and copper treated containers reduce the number of circling roots but do not eliminate circling roots (Marshall and Gilman, 1997). Circling roots have the potential to decrease stability and long term growth of a tree and could lead to tree girdling and death. Field-grown trees are grown without the use of a rigid container, therefore, the root system develops a more natural form.

Three years ago, quality field-growers around the state formed the Roots Plus Field Growers Association of Florida. This association was concerned with increasing the quality and public perception of field-grown landscape trees. Their mission is three-fold: 1. To guarantee the consumer they are buying a quality hardened-off field-grown tree, 2. To share new ideas to continually improve tree quality, and 3. To sponsor research and educational programs. All members of the association place tags on their trees which list a number to call if there are any problems with the tree after planting. The association meets quarterly to discuss new ideas and already they have hosted educational programs on pruning for the new grades and standards and proper handling of trees. Members of the association are also very active in sponsoring research at the University of Florida.

As members of the tree care industry we all love and care greatly about trees. Regardless of the production method used to produce a tree, it is important that we can recognize and use the highest quality tree available.

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