



GO Trees

Container Trees: Going Beyond Survivability to Thrive-ability

Our **GO Trees** Container Tree Production System grew from a need for better survivability of field liners in the harder to transplant tree species, including many natives. Most trees were planted bare root in the Spring, but the open field can be very hard on a new young liner. The spring soils can be cold and saturated while the air is hot and dry. The stress can prevent them from getting a good start, and of course, stress can also bring insects and diseases.

Planting trees acclimatized to the hardiness zone they originate from is like buying insurance for a successful landscape.

Ten years ago, we started potting some of the more difficult to transplant trees and letting them produce some roots before planting them in warm summer soils with drip irrigation. These container grown trees were easy to establish in the open fields, partly because 100% of the roots are contained in a smaller area. This density benefits the plant and allows for quick production of new roots and knitting into the surrounding soil. The containerized trees are not as susceptible to rough handling, so do not have as much transplant shock or root disturbance. We found the same benefits applied to planting these container trees in the final landscape.



Our **GO Trees** have been used successfully for homeowners, parks, restoration, and reforestation.

Our focus in the propagation, shifting and transplanting stages are to maximize root branching to maximize transplant success. Success is based not just on survival, but the re-growth of new root tips. Existing root tips regenerate more quickly than adventitious roots. The more fibrous the roots, the more root tips to regenerate and begin growing in the new soil environment. In many cases, (especially with hard to transplant trees) root regeneration can start more quickly from container trees than newly harvested trees.



For more information please contact us, and we can help put together a solution for your needs.

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GO Roots

Glacier Oaks Nursery propagates the majority of our container trees by seed, softwood cuttings, or root cuttings. We have tried many seedling regimes over the years, fine-tuning our collection, treatment, storage and sowing regimes.

We propagate year round, and select the strongest cuttings and seedling to develop into liners. Our liners are grown in air pruning pots for several years as we strive for a straight but stocky and sturdy trunk and a well-branched root system. They are then shifted up to larger sizes depending on the tree, and maintained in our



GO Trees Container Tree system.

We have developed root treatments on some species to increase root branching at transplant time. Some of the trees are also inoculated with mycorrhizae to help the plants get established. The right media mix for our **GO Trees** is a balance between a medium heavy enough to hold up the trees and allow the roots to knit into the mix, but not so heavy as to interfere with the ease of portability or porosity.



Our growing areas are equipped with a drainage system connected into our terracing and waterway system to conserve water and eliminate run-off. The pots are all fertigated through a drip system. Many of our **GO Trees** are in Pot-in-Pot ranges, and we have found the natural insulating properties of the earth protect

the roots adequately from the cold as well as from heat. We continue to refine the balance between sustainable weed control and weed free containers.



Transplanting generally induces a 'drought' response in the plants that are being moved. Along with this stress how and how many root tips are cut during transplanting has an affect on the successful outcome of tree establishment.

Two rules of thumb are:

- 1) have as many intact root tips as possible and
- 2) encourage as fibrous a root system as possible before moving.

Our container tree growing system maximizes both of these rules.

(see [Rooting For Oaks](#))

When our trees reach 1.5" in the #10-20 containers, they have a fully contained, complete root system as well as a stocky trunk and branch structure. These trees can be transplanted any time of year as long as they are planted at correct depth, and well watered and mulched in their new site. (see [Root Tips](#))

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Root Tips

GO Trees- for Successful Trees from Pot to Lot

Timing

- Spring and fall are the best seasons to plant, but container trees can be successfully planted all summer with proper care

Holding

- Plants held above ground should be watered thoroughly every 2-3 days depending on the weather, and again before planting.

The Planting Hole

- Loosen the soil in the rootzone
- Width- 2-3 times as wide as the pot (wider for poor soil), sloped towards the base
- Depth- slightly more shallow than the rootball, with a firm base to avoid settling of the rootball

Preparing for Planting

- Carefully remove the pot (Recycle or return pots to the nursery) Larger pots may have to be cut to avoid damaging roots
- Examine the roots- Spread out any circling roots
- Cut any roots that can't be spread out- but keep cutting to a minimum
- Plant immediately after any root disturbance

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Planting

- Spread the roots out into the hole, widen if needed
- The top of the rootball should be slightly above the grade so that the collar or crown will not be exposed to pooled water
- Backfill the hole, and break up some of the container mix to improve interface between soil and mix
- Water and recheck the planting depth

Mulching

- Apply a 2-4" layer of mulch to the drip line (less than 1" near the trunk) to retain moisture, conserve water and prevent weed competition

Watering

- Water is critical for newly planted trees- Keep roots moist but let the top few inches dry out between waterings (increases oxygen in soil)
- Regular watering should be continued over a period of 2-3 years.

Fertilizing

- Fertilizer can be used the second year after transplanting to increase height, width, and caliper - test root zone soil first
- Once established, plants can be fertilized to maintain health and vigor, based on plant nutrient needs

Staking

- If the tree is stable, staking is not needed
- If staking is needed- consult green tech support for recommendations
- Some movement stimulates good trunk taper
- Remove stakes within a year of planting when plants have hardened for the season
- Protect new trees from people, animals, and equipment

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