

## New Ideas on Growing and Handling Container Trees<sup>®</sup>

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### INTRODUCTION

Worthington Farms uses fabric containers to grow trees. These fabric containers air-prune roots and keep root temperatures cool in the summer. Worthington Farms is located in eastern North Carolina (USDA Plant Hardiness 7b). Windy conditions, high summer temperatures, and hurricane preparedness are primary issues that affect container tree growing. While pot-in-pot production is utilized by the company, the rising costs of plastic for socket pots, drainage pipe, and the labor to install the system is beginning to make the system less cost effective given the stagnant price of trees. Fanntum<sup>™</sup> containers offer an option to pot-in-pot production where plants need marginal winter protection <<http://www.fanntum.com/>>.

### FANNTUM<sup>™</sup> CONTAINERS

The Fanntum container consists of a wire basket covered on the outside with a fabric bag. The bag is attached to the top ring of the basket with C-rings. The sidewall of the fabric sleeve is made of 3-ounce, high-UV woven polypropylene and the bottom is made of 8-ounce nonwoven polypropylene. The woven sidewall breathes which keeps heat from being trapped, keeping the roots as much as 20 °F cooler than those grown in traditional black plastic containers (grown above ground). The porous sidewall also dries the edge of the growing media. This gives the container an “air-pruning” effect, minimizing root circling and keeping roots from growing next to the sidewall of the container.

In the nursery, trees are grown on bare ground. The bottom has some ability to conform to the undulation of the ground, increasing stability. The nonwoven fabric bottom allows fine roots to grow through while impeding root caliper development. These small roots further improve stability in windy conditions allowing for less rigid staking and guying. If the escaped roots are ever detached from the soil, such as during a severe storm, they do not ever reestablish significant contact. Roots are able to mine phosphorous and available moisture for the soil underneath. The close interface between the soil, fabric bottom, and roots improves cold tolerance for a limited duration.

Fanntum<sup>™</sup> containers can be potted similarly to plastic containers. Trees are potted on the perimeter of the growing blocks using a portable pot filler, then moved into the blocks by hand after potting.

### STAKING

Metal T-stakes are used to guy the trees. Each tree shares a stake with the next plant in the row. Trees are guyed from opposite sides only. Two separate 2.1-cm (0.5-in.) seatbelt (mule tape) loops are tied loosely around the lower branches. Poly twine connects the mule tape to the T-post. Trees are not tied tightly to keep the mule tape from growing into the bark. This staking system was selected to minimize rubbing damage and allow narrow-width tractors and a scissor lift access for

weed control and pruning. This method is sufficient for up to 30-gal shade trees and shorter growing evergreens and flowering trees in larger containers. An aircraft cable system is used for bigger trees.

## **HARVEST**

An attachment called the Fanntum Grabber can be used at harvest. The Dingo 525 mini track loader, on which it is mounted, can drive between the rows with little ground disturbance. The attachment hydraulically swings outward, is actuated to grip the tree with quarter-moon shaped paddles, and retreats with the tree. If needed, an individual can harvest trees without assistance.

## **PLANTING**

At planting, the fabric bag is cut from the basket. Using bolt cutters, the top ring of the wire basket is cut on each side of the basket loop. C-rings are not used under the loops of the baskets, and pieces of the top ring are now detached. A vertical slice of the sidewall allows the fabric to be peeled downward from the top. The tree is laid down and the fabric is ripped from the bottom. The tree can be lowered into the planting hole using the loops of the basket. The wire loops can be folded downward into the hole or cut from the remaining basket.

## **ADDITIONAL BENEFITS**

Fanntum containers are produced with 10% of the petroleum for traditional plastic containers. Fabric bags can also be disposed at the job site, reducing the need to transport and store used plastic containers.