

For Success, Minimize Stress

By Andy Whitcomb

Planting is a stressful transition. At the nursery, plants are coddled with plenty of water and fertilizer. At the landscape, a plant is unceremoniously dropped in a hole (unless an actual tree-planting ceremony), and expected to flourish in the new, often harsh, real world.

However, a high percentage of plants soon experience shock and begin to struggle. One reason is due to the poor root structure. Traditionally, plants are grown with relatively few roots which either tightly circle in a container, or were recently severed by harvesting from the field. By some estimates, one in five will simply not make it.

Nature did not allow for transplanting. When a seed falls to the ground, it invests all of its stored energy in sending one aggressive taproot deep into the soil for stabilization and to locate water and nutrients, intent on surviving in this new home *right there*. Only when roots reach sufficient water and nutrients or an obstruction do they branch and form new roots. This minimal root system strategy is evident if you have ever purchased a plant “bare-root” or washed the root system of a container or B&B.

The traditional field production method is to seed a field, let the plants try to grow for a few years, then harvest while dormant and place in cold storage or wrap in a burlapped ball. This transition can only take place while dormant because otherwise the shock of the transition from this growing method due to water loss would result in almost total losses.

In an effort to produce a higher quality product, nurseries are increasing their focus on root systems. If the root system of a seed or cutting can be forced to branch early, right at propagation, this root-branching momentum can be continued through all phases of production for several years, until the tree is ready to be planted into the landscape. With a multitude of active root tips, a tree grown in this manner is equipped for transplant success.

Due to continuing research on root systems, special production containers are now used to create fibrous root systems. In more and more nurseries, as soon as a seed germinates and begins to send down a taproot, this dominant root is directed to a hole in the container as quickly as possible. Here, an odd thing occurs: once the root tip reaches the hole and tries to extend, air dehydrates and actually kills the root tip. Called “air-root pruning”, this is a *good* thing. Once a root tip loses its ability to extend, small roots form behind this point. The result is just like clipping a hedge to create full, dense stem branching. This pruning continues with the secondary roots and creates a fibrous root system with more root tips to aid nutrient absorption.

This root pruning momentum can be continued for any size of plant grown. In the field or in containers, fibrous, non-circling root systems horizontally and vertically at all phases of production can be created by utilizing the latest root pruning technology. In other words, there really is no excuse for the delivery of a plant with a poor root system any more. Transplant shock can be greatly minimized because instead of relying on a minimal, poor

root system for support, the plant is now equipped with a dense, fibrous root system with many active root tips to anchor in the new surroundings and rapidly acquire the water and nutrients it needs to become a healthy, beautiful landscape addition for many years.



What's inside?
The regular balled & burlapped tree on the left had just a few large roots inside the heavy root ball. The high-tech white container on the right contains thousands of tiny active root tips, and is equipped for transplant success.