

# Transplanted trees gasp for oxygen

**A**rborist Dr. Carl Whitcomb wonders how transplanted trees ever survive being uprooted and replanted.

"Transplanting is a tremendous challenge to the plant," explains Whitcomb. "Even with a relatively small plant, we're cutting off everything but just a few roots, and then trying to get the tree to withstand the stress until it can re-establish itself on the new site."

Oxygen is often depleted during a plant relocation, when the soil is so compacted that no more air pockets remain for root uptake. Transplanting time can be an opportunity to do

some things to ensure sufficient oxygen reaches the rootzone. That's when you should make sure not to overwater. Make sure the hole is large enough for the root ball. Loosen the soil around transplanted trees.

Roots killed off by heat stress will eventually regenerate, says Whitcomb, "but if you're a bacterium or a fungi looking for lunch, what better place to go? The pathogens tend to invade those roots much faster than if you just physically cut them off in a pruning-type process.



Note situations following rain where water does not drain properly. These are sites where plant decline occurs.

## Get energized

"What's inside the plant tissue at the time you transplant it is far more important than what you do to the new site, with the exception of loosening and aerating the soil," advises Whitcomb. "There's no magic potion to add to the planting hole to assist root growth. You can't grow new roots without energy. You've got to have the assorted sugars and starches in there to begin with."

Compost might help the tree to establish, but don't fill the hole with compost; spread it around the site.

"If it degrades and provides some nutrients, or keeps the soil a little warmer or cooler (depending on the time of year), or

enhances some microbial activity, it probably helps. But the thing that makes the root growth isn't fertilizer or nutrient absorption after transplanting, it's stored energy that was in that root before. What you do with that plant in the nursery setting has a dramatic influence on how rapidly those roots grow."

With a tree and most shrubs, if you only amend the planting hole, you're only amending a very small fraction of the soil that the plant is going to use. Whitcomb recommends that you amend the entire rootzone to destroy texture, water movement and aeration "barriers."

## Phosphorus a fantasy

Phosphorus will not help root growth, says Whitcomb. Sugars and starches from the leaves make the roots grow.

"What is important is anything we can do to enhance the energy output of the plant's leaves. If available phosphorus is low, adding phosphorus will

help the leaf output. Beyond a certain point, however, phosphorus actually suppresses the uptake of iron and manganese and other critical ingredients, and it can become detrimental to growth."

## Use the application window

The bulk of the root growth on woody plants occurs in August through October. The highest tissue energy level is going to be just before the plant goes dormant in the fall. Whitcomb urges landscape managers to take advantage of it.

"The soil's warm, the energy's there, and plants—particularly container-grown plants—will produce roots in that surrounding soil at a phenomenal rate."

New shoot and leaf growth will ultimately contribute to this total energy accumulation inside the plant.

## Soils, nutrients key

"Know what's in the soil and don't let the plant go hungry," says Whitcomb. "I don't care if you just transplanted it yesterday. If that soil test says the nitrogen is extremely low, apply some nitrogen!"

Adding nitrogen can benefit plant growth. But beyond a certain threshold, nitrogen stimulates weak, spindly growth. The plant's store of reserves is low and you begin creating future problems—winter injury or disease or insects. Proper levels of all elements enhances resistance to aphids, grasshoppers, or spider mites. **LM**



**Whitcomb: 'Don't fall for the old fable that says you don't fertilize newly-transplanted plants.'**