

## More on Watering, Is Submersion Good or Bad?

By Charlie Mosse, May 2024

Hot weather is coming soon. **Thorough wetting of the entire rootball** becomes particularly important. Issues to look for that impede thorough wetting are:

- Old, compacted soil with slowing or already poor drainage.
- Mounded soil with trees planted too high or are pushing out of the pot due to massive root production.
- Crusted soil surface due to accumulated salts and/or organic matter are a classic issue.
- Old trees with large root bases and reduced root volume are difficult to water.
- Very small trees like shohin, mame and small Kifu sized trees are easily affected.
- Frequent overhead watering without leaching, leading to a crusted soil surface.
- Brand new soils that can have hydrophobic particles.
- Recently repotted trees with old soil remaining or old compacted rootball remaining.
- Dried moss can and will repel water.
- The soil surface is the same level as the pot rim---nothing to stop the water flowing over edge.
- Water rushing around dry particles can leave those particles dry or only partially wetted.

Until corrected, a lot of extra water is needed to properly wet the rootball with the usual overhead watering method. Maybe the rootball gets thoroughly wetted, maybe it does not. So, to save water and properly wet a difficult rootball, submersion is suggested.

Submersion has its issues when used frequently and improperly.

- Inadequate leaching of existing salts will occur when using tap water.
- Increased salts in the soil, some migrating up to the top of the soil adding to the crusting.

When properly done,

- Salts can be leached from the root zone and the top of the soil and will not accumulate.
- Every soil particle will absorb water.
- If adding fertilizer to the submersion solution, every particle will absorb fertilizer.
- You will most likely see improved leaf color, tree vigor and better moss.

There are 3 methods of submersion. Water is placed into a tray or bucket. Add water to the desired height. Fertilizer, supplements or acidifiers can be added as needed. Tap water is OK when not used that often. Better is tap water diluted at least 1:1 with collected rainwater or bottled drinking water. Water from rain, reverse osmosis or deionization are best. Keep in mind

that one does not have to water this way every time for most trees. I almost exclusively water shohin and mame this way and noticed a marked improvement in several troubled trees and good improvement in all of the trees, especially in the summer and fall. **The key is getting to know if every rootball is properly watered.**

1--Watering from the bottom in shallow water depth. Be sure to use good water, especially when used regularly. No net leaching occurs with this method and salts can accumulate. Fertilizing is not recommended here. It is an effective way to keep shohin, mame and accents moist. Create a drainage layer in the bottom of the tray, add water to cover the bottom of the pot. Excess water will evaporate so roots do not sit in water too long.

2--Watering in a tray or bucket to cover the rootball up to the trunk base. This is better than the first method. Good water is better here but tap water diluted with good water is OK. Some leaching occurs when the pot is lifted out. Angle the pot or hold pot on its short edge to drain and help remove salts; an excellent method for shallow pots of any size because they do not drain as well as deeper pots. You will see some bubbles rising as air pushed out of the soil, being replaced by the water. When the pot drains, this action will suck air back into the soil.

3—Use a deeper tray or bucket and submerge the tree up the trunk or even submerge the entire tree. Lots of bubbles will emerge from the soil, more so than in 2. Drain as above.

For methods 2 and 3 when bubbles stop or are infrequently emerging, then you are done. This will happen in a brief time span, 10 seconds to a minute at the most. The more compact and older the rootball, the longer it takes, sometimes 10-20 minutes. Bubbles will be smaller and emerge at a slower rate. Caution here if adding fertilizer. It is good to use the foliar feeding strength when using these 2 methods regularly. Sometimes I use a full strength dose, but the solution is not allowed to touch the leaves or young stems.

As always, you can pose a question on the SDBC Facebook page, on the SDBC web site, or bring your tree to a general meeting for some firsthand advice. The latter being the best way to get good answers to your questions.