Repotting…to Repot or not to Repot

By Charlie Mosse, January 2022, Edited by Sylvia Mosse

At this time we are about at the middle of the dormant season repotting period. We started repotting conifers in the late fall and will continue through February and in some cases into March. Deciduous trees like Elms, Maples, Crape Myrtle and Pomegranates are also repotted in late winter and early spring. Busy time!!

The upcoming January club meeting will be the annual repotting event, a sure sign that now is the time to repot. There will be lots of information to be had and techniques to learn with hands-on help available. Do not miss this meeting for sure.

Does a tree need to be repotted? If so, how can one tell if it needs repotting?

1. Water is running off the soil surface very quickly and does not appear that much is absorbed due to a hard crust. The crust is usually a combination of salts, accumulated organic material from improperly applied dry organic fertilizers and/or the breakdown of akadama on the soil surface. Bark fines can accumulate too, but to a lesser degree than akadama.
2. The soil takes longer than the usual time to drain, it may be becoming too dense.
3. The only way to properly water the tree is to submerge the pot in water over the top of the root ball. This can take up to 15 minutes depending on the size and density of the root ball.
4. The tree is not responding to fertilizer with good growth as well as before.
5. Compacted soil generally does not promote good root growth that will show up as lesser quality foliar growth. Usually there are fewer new active root tips, or the ones that are there are less active.
6. The tree is off-color, not as green as normal but still grows OK. Same as in 5…less absorption or water and nutrient results in reduced foliar color.
7. Improper draining due to soil density by the build-up of soil fines is causing off-color foliage and lack of plant vigor. Same as in 6, but here the off-color is due more to improper drainage with root hairs struggling to stay active/alive in lower oxygen environment.
8. White salt crystals have accumulated on the soil surface from the high mineral content of our water. They can be readily visible later in the year on exposed roots, pot edges and larger pieces of soil particles. Some plants will be fine like Junipers and Ficus. Maples and azaleas are very sensitive, while Oaks, Elms, Crape Myrtles and others are somewhat sensitive to salt accumulation.
9. You notice that the leaves on a tree are small, which is desirable, but they are off-color. Again, the cause is poor root tip growth and absorption of water and nutrient due to compaction…lack of water and air getting to the roots.
10. The root ball is being pushed up inside the pot, and in some cases the root ball has been pushed up to and even past the rim of the pot. The soil has pretty much been displaced by the roots and the organics (or akadama) are gone, or so broken down, so as to not be beneficial any longer. Deciduous trees and ficus are famous for this.
11. When was the tree last repotted? Different species have different repotting timing. Some species put out a lot of roots like ficus and may need annual repotting especially

those trees in development. Some species of older trees that are in refinement may not need repotting for over 3 years, some as long as 5-7 years.

12. If the tree is not healthy, then repotting is not necessarily a good idea, unless the roots are in poor condition and the tree needs an urgent or emergency repot.

Note that some of the issues above can cause root rot to start and persist. This is usually the harder soils and/or soils with too many fines, both of which can cause poor drainage. So along with the lack of soil, poor aeration, and poor water absorption affecting the general health and vigor of the tree, now you have root rot piling on. The time to repot is most likely when any of these issues exist.

Even if it is not time to repot a tree, you may have a tree that may not be growing like it should, it may show a lack of good foliar color or may actually be in poor health. You may need to unwire the tree from the pot and visually inspect the roots, even poke around with a chop stick. You may find nothing and can wire the tree back into the pot. Or, you may find root rot or dry areas. With minimal disturbance of the roots, you can cut out the rot or dry areas and then put the tree back into the pot with a bit of new soil as needed. This avoids the full repot which is a good idea if the tree is not healthy and vigorous.

There are times when a tree looks healthy but the soil looks like repotting is needed, or the tree may be stressing just enough for you to notice. Inspect the soil on the surface to determine if it is fairly hard, showing definite signs of crusting and water is running off too fast. Note that water can be coming out of the bottom of the pot but that does not mean water is being absorbed by all of the root ball. Dry areas can happen and even persist, becoming areas of poor or no root growth. You can counteract this by resorting to submerging the root ball in water. If it still takes too long of a time to water the root ball, then it is time for corrective action as stated below.

When the tree is not a good candidate for repotting, then the following can be done.

1. You see that the soil surface has become mineralized, full of fines and hardened or some like the term crusted. Most of the time this leads to the soil surface being hydrophobic, the infamous and dangerous crust has formed.
2. On further inspection (by carefully digging down into the soil), you see soil particles that are in good condition. Here is where improving soil percolation in the soil surface layer is a great thing to do.
3. You remove the top layer of hardened soil down to the soil that looks in good condition, the soil particles that are still individual particles, not a mass of fines hardened into a layer.
4. Add fresh soil mix to the surface working it into the old soil a bit. Add soil as needed, pressing the soil mix into the pot until the desired level is reached. If you use a soil cover mix, add it at this time or any other protective screen to keep birds and rodents out.
5. Water in thoroughly with fine flow water wand or by submergion to be sure any dry areas are now wetted.

Ryan Neil of Bonsai Mirai has a great video in his archive on “Improving Percolation”. It is an excellent teaching tool for this. Replacing the top layer of soil saves the time and expense of a full re-pot and helps the tree by not stressing it through a full re-pot that it does not need. Sorry for no photos of this process because they are in my old PC back in San Diego. Will do this later as it is such a simple but good thing to know.

A few FYI's. ---Jonas DuPuich of BonsaiTonight just wrote in his regular blog about what one can do when obtaining akadama as it gets more expensive and gets too expensive and availability is erratic. Reduced availability of the supply of akadama has been slowly coming about, so people have been experimenting with other components like diatomaceous earth and other things that can possibly replace akadama. Stay tuned. ---Michael Hagedorn's of Crataegus Bonsai has a book called *'Bonsai Heresy'.* It is a great resource for accurate and updated bonsai growing information. ---Eric Schrader, of *Bonsaify,* has developed a very good archive of bonsai information. ---And just for fun, is it root ball or root ball…it can be spelled either way.