

Warm Weather Work, Hot Weather Protection, Show Prep

By Charlie Mosse, August 2024

To help prep for the show, it is recommended to listen to a podcast named 'The Bonsai Wire'. Jonas Dupuich, John Eads, Michael Hagedorn, Carmen Leskoviansky, Andrew Robson, and Eric Schrader hosted it. Two of the hosts, Jonas of Bonsai Tonight and Andrew Robson of Rakuyo Bonsai, posted **7 of their top tips** for preparing trees for a show.

There are other recent posts about the **Pacific Bonsai Expo in October** that discuss the jury (tree selection) and judging processes. Particularly useful information is there, too. The PBE is the west coast equivalent of a national level show like U.S. International Bonsai Show and Exhibition in Rochester, NY. Both are held every two years, but in alternate years.

<https://www.bonsaiwirepodcast.com/1276571/11548003-show-prep-7-tips-to-make-your-trees-look-their-best.Keep>

Keep doing work on warm weather trees like Bougainvillea, Ficus, Olives, Brazilian Rain trees and other sub-tropicals and tropicals. Heavy work can still be done in August which will give the trees time to recover and be ready for the cooler months ahead. Try to get the repotting, grafting, air layering- cuttings done now. Lighter work like trimming can be done well into September.

The weather has been very warm to hot, clear skies, the sun high in the sky and days are still long with hot sun into the late afternoon. That is a lot of prolonged and potentially damaging heat for our trees, especially in the hotter areas. Remember that tree foliage has evolved to manage hot temperatures and direct sun. Roots have not since they evolved in the ground where temps are more stable and considerably cooler. So here is a basic check list to help get through the next 3-4 months.

Be sure trees are thoroughly watered: First wet the surface with a quick pass to pre-moisten the surface and the soil under the surface. Then go back and make 2-3 soaking applications thoroughly soaking the soil. Important water fact: Water will take the easiest path through the soil and can miss some areas even after one thorough application. This is an important reason for multiple applications of water or doing submersion.

Pay close attention to:

- Bill Graham advised us that you may need to water twice a day. Check plants in mid to late afternoon on the very warm and/or windy days.
- recently repotted trees with looser/coarser soil mixes, it can be difficult to properly wet all of the new particles.
- very root bound trees needing repotting usually have compacted soils,

- a repotted tree with a hard portion of old root ball remaining. The old soil greatly differs from the newer soil and can often repel water.

An extra watering pass on recently repotted trees helps to wet the new particles better. Try 'drip watering' compacted root balls which can be a hard, hydrophobic mass.

Known fact: The more slowly water is applied to any dry soil particles, the better the water will be absorbed by the particles. Also, more nutrients will be absorbed instead of being flushed out at the time of application. This also helps to leach out salts better.

Cover pots on hot days over 90: This will keep the pots from getting too hot in the sun and transferring that heat to the roots, possibly injuring the fine root hairs and root tips. Temperatures over 100 **can** damage roots depending on the pot material, pot color, sun angle, glazed or unglazed container and the duration of exposure of the container to direct sun. Depending on the species, tree health and the **duration** of hot soil temps, root damage **will** occur when soil temps get over 120-130 degrees. Root injury can range from losing some root hairs to killing all of the root hairs and even small roots. When the latter happens (which is hard to determine at the time) you will not find out until later with conifers and tougher broadleaf evergreens when the trees stop growing and/or eventually lose color. More sensitive trees like maples, hornbeams etc. will quickly show burned leaves and dead tips on fine twigging. Eventually older tertiary, secondary and even primary branches can die back or die off. Therefore, protecting containers is the best way to prevent root injury. When roots are not happy, nobody's happy.

Cover pots with any breathable opaque material like burlap, frost/heat protection fabric, old t-shirts, old sheets or shade cloth. Those materials allow water to pass through. Thin styrofoam, thin insulating materials and aluminum foil are also good protection but are not as convenient when watering. Trees can also be moved under shade trees, bushes or other shade, or can simply be put on the ground under shelves/tables during the heat of the day. The trees can remain on the ground under the tables for a few days without causing any problems. Double potting is also incredibly good. E.G., placing a 6" pot into an 8"-10" pot, surrounding and covering the 6" pot with pumice. If the pot is covered with a material of any kind, you will need to move some material aside to check for moisture. Once you learn the routine and speed of drying, it becomes easier to do. When you water the plant, also water the pumice surrounding the pot.

Installing shade cloth: This is the best method of protection. Listen to this informative blog post on shade cloth by Jonas Dupuich of Bonsai Tonight and Andrew Robson of Rakuyo Bonsai. <https://www.bonsaiwirepodcast.com/1276571>. Michael Hagedorn of Crataegus Bonsai also has 4 short posts on his blog page about shade cloth. <https://crataegus.com/blog/>. Scroll down to find the posts. They are not in listed order. Scroll down about 10 or so posts and working back to the top you will see the 4 posts.

The soil will be at least at ambient temperature and above that on the sunny side. There is about a 10-20 degree difference in temperature between the sunny side and the shaded side of a container. Try using a digital meat thermometer to learn the nuances of temperature variations in the soil, especially on hot days.

Overhead water your trees: Can tree foliage be watered during the day when it is hot? Urban legend says to not water foliage on hot days when in the sun. The claim is that water droplets will act like a lens and focus the sun's rays on the surface of the leaf. **Wrong!!** If the droplets did focus the rays, the focal point would be below the leaf.

Julian Tsai did a deep dive into this question that many people ask about. As simple as it sounds, it is a very complex subject with very many variables. So, here is a concise summary he wrote from his research:

*"In 100+ temperatures on temperate species **do not mist the foliage** of your trees. If you do water the foliage, **drench the foliage** and ensure the water coming out of your hose is not warm or hot. Sub 100 temps it is highly unlikely that watering your foliage will burn the leaves. **In hot weather it is likely more effective to keep trees well-watered and roots cool as well as utilize shade cloth, so that the plant can continue to transpire and cool itself.**"* (I added some bolding for accent.) During the years I managed nurseries, we hosed off many plants during peak heat and had no problems. If we were concerned about thinly leafed plants, deciduous or evergreen, after hosing them off we shook off the excess water. It is simply best to protect your trees from the hot part of the day. This is just so much better for the trees, anyway.

Keep trees healthy by continuing fertilizing and performing insect/disease control. Several members have asked if it is safe to fertilize and/or apply insecticides and fungicides in hot weather. Yes, it is safe but here are a few tips to prevent problems when it is very hot, say over 90 degrees.

- **Be sure soil is moist before applying any chemicals to the soil or foliage.** It is best to water several or more hours before application to assure the plant is hydrated.
- Fertilize at ½ doses but twice as often. This reduces the total amount of fertilizer salts in the soil at one time, more like mother nature. This applies to liquid or dry fertilizers, but not so much for dry organics. Controlled release fertilizers like Osmocote and Apex release faster in warm weather so reducing the amount applied can be helpful.
- Soil drench applications of insecticides must still be applied per the label to get reliable results.
- When applying chemicals to foliage, follow label instructions for the concentration to be applied. Apply chemicals to the tree in the evening. This reduces the possibility of chemical burn vs applying in the morning of a day

forecasted to be over 80 degrees. Another benefit is that the chemicals will last longer on the leaves and twigs before the sun and heat starts breaking them down. This makes them more effective. If you are concerned about leaf burn, you can give the tree a light “rain” in the mid-morning to dilute the chemical on the leaf.

Be sure containers and benches are level. See short article by Michael Hagedorn of Crataegus Bonsai. <https://crataegus.com/2024/07/23/does-it-matter-if-our-benches-are-level/>