

# The Art of Bonsai

By Eugene Howell

This is the second part of an article about the technique for doing root-work on deciduous trees and conifers during the warm part of the year and not killing the trees in the process. In part-one we looked at the proven process used by commercial nurseries to get roots to grow on cuttings. We learned that if the bonsai hobbyist understands the transpiration process in plants and how it comes about, he/she will be able to understand how humidity can be used to the advantage of the hobbyist. In this part we will discuss how this is accomplished and how, if the need is pressing, a hobbyist can do root-pruning on a deciduous plant or conifer during warm weather and not have to wait for the dead-of-winter.

As a reminder of what was stated in the first part of the article, this process is not for the individual who is not willing to provide the special care and checks that must be done to prevent disaster. If you think you may not be sufficiently organized to handle the responsibility, then do not try it. You will only kill your tree.

As the humidity around a plant goes up, the transpiration of water from its leaves decreases. This happens because the stomata of the leaves (the tiny little holes principally on the bottom of the leaves) close and prevent water molecules from being given off. So, if the plant is constantly surrounded by a humidity of 100% there is little, if any, water transpired from it. For a plant which cannot uptake water (no roots, or damaged roots) this will prevent its death since vital water is retained within its tissue.

Nurseries and very dedicated bonsai hobbyists achieve this 100% humidity level in a pretty neat way. They set up an overhead sprinkler system and install sprinkler heads that spray a mist (like the ones you see at sidewalk cafes to cool the diners in hot weather). They set the timer to go on every few minutes (between 10 and 20) and spray for only a few seconds (between 20 and 40). Thus the humidity stays at 100% and the soil and leaves stay constantly moist. These systems must be in the shade so the cuttings (or plants) do not receive stress from strong sunlight. With this environment the leaves on the cutting or plant never even begin to wilt and within three to four weeks roots have developed.

For bonsai hobbyists who do not have the space or finances to dedicate to such a setup, there is a solution that achieves just as good results. This is one that I have talked about in previous articles in the newsletter.

After work has been done on the roots of the bonsai, make sure the new soil is thoroughly watered then spray the leaves with a soft spray of water so the entire plant, soil, and pot are wet. Next go to your closet and get one of the drycleaner's bags still covering a pair of trousers or skirt. Make sure you don't tear any holes in it when removing the clothing (very important). The bag has a small hole where the clothes hanger comes through the top. Place this on the bench (clothes hanger hole down) and put the bonsai in the bag on top of this small hole. Lift the sides of the bag until the plant is completely contained within it, and then use a "twist'em" to completely, and tightly close the open end of the bag. Place everything in the shade.

To make sure the plant is constantly exposed to a 100% humidity environment you should check it in mid morning and again in mid afternoon every day. You are looking for mist on the inside of the bag. This shows that the humidity is 100%. At night the mist will normally disappear, so don't panic if you notice this. If you find, during the day, that there is none, then open the bag and check the soil to insure that it is moist (if the bag has even a small hole torn in it the soil will dry out within a few days and the humidity level within the bag will not stay at 100%). If the soil feels the least bit dry, water the plant and reseal the bag as before. The idea is to keep everything sufficiently moist that the humidity within the bag stays at 100%.

After about three or four weeks you should notice new leaves beginning to grow. This indicates that the plant is also developing new roots. Don't get overly anxious at this point and decide to remove the plant from the bag. If you do, it will most likely be dead within 24 to 48 hours. Instead, wait for at least another two to three weeks (keeping the humidity at 100%) and then remove it from the bag. Keep it in the shade and monitor it carefully several times each day. Give the plant the normal care you would any other bonsai, but monitor the leaves. If you notice even the slightest wilting of any of them, put the bonsai back into the bag for another week or two. At this point you can remove the bag once more and continue to keep it in the shade for another week. If you find the leaves wilted, and you have not checked the plant within the past 4 or 5 hours, you may have done irreparable damage.

During this extended period in the bag you will likely begin to see fungus developing on some of the leaves or branches. When this happens, open the bag and use a broad-spectrum fungicide to spray all the leaves and stems. Reseal the bag and continue to monitor the plant for 100% humidity.

Your bonsai is now well established with its new root system and you have successfully root-pruned a plant during the warm part of the year. Congratulations!!