

Green turning Wooden Bowls

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“Green turning” a wooden bowl starts with a piece of wet wood. I rough out a bowl, let the piece dry, then remount the bowl and finish turn it. Here are a few tips that will help you through the process.

The process starts at the tree. I want to get the wood as soon as the tree is cut. If you wait, especially in the summer, the tree will end check and radially check. And bugs will move in and start eating the wood. So the first rule is to get the tree as soon as it is cut. The wood never gets better over time (except for spauling in some species). As soon as you cut the block, put end sealer on the end grain (Anchorseal, Sealtite 60). If you wait very long micro cracks will start and the sealer will not work as good.

The next step is to rough out the bowl as soon as you can. A big block of wood will want to split and crack as it starts to dry. A roughed out bowl can “move” to relieve the stress and is less likely to crack as it dries.

After the bowl is roughed out, mark the date and source of the wood on the bottom of the bowl. This will allow you to track all the bowls from a given tree over time. When one bowl is ready to turn, generally all the bowls from the same tree are.

How thick to leave the bowl when you rough it out? That answer depends on the wood. The general rule is that the larger the diameter the bowl the thicker to leave it. A 16" bowl maybe 1 ¼" to 1 ½". A smaller bowl would be less. But the answer also depends on the species. Stable woods like Black Walnut can be left thinner. Generally walnut doesn't move much. Madrone burl and Apple move a lot. You need to leave it thick enough that when it dries there will still be a “round” in it. The problem with leaving it too thick is that it may not let the bowl “move” and the piece will crack.

After I rough out the bowl I use cheap paste wax on the end grain on both the inside and the outside of the bowl. I don't use Sealtite liquid wax at this stage because it soaks into the end grain. When the bowl dries the wood that the Sealtite has soaked into will have to be turned off. Paste wax does just as good but doesn't penetrate.

The drying process starts by stacking the bowls on dry stickers in the coolest place in my shop, the floor. If you stack wet bowls touching each other they will mold and spault. Separate them with dry wood stickers. For the first couple of weeks I might check the bowls every day or two. If I find small cracks in the end grain or on the foot I immediately use thin CA glue to seal up the crack. (Bill Luce uses thick CA glue and sawdust to build a “scab” over the crack. The advantage here is that the thick CA glue doesn't soak into the end grain of the wood which will have to be turned off later.) **The cracks tell me the bowls are drying too fast.** I then put them in garbage bags with dry chips. This slows the drying process and lets the wood re-equalize its moisture content. The blank cracks because the wood on the outside of the blank is drier than the wood further inside the blank. The dry chips will absorb the moisture from the blanks.

Every couple of days I'll take out the damp chips and put in dry chips. The bowls may go in and out of the bags several times before they are stable. I leave them in the bags 3 to 4 days then put them back on the stickers on the floor.

If the bowl starts to mold it is drying too slowly. I move the blanks into the heated part of my shop. I want to get the surface moisture off the blanks. But be careful because too long in a warm dry location can crack the blank at this stage. I also spray the blanks with a mixture of 50% household bleach and 50% water. This kills the surface mold. Mold is the first step of spauling and I generally don't like the effect at this stage. The bleach doesn't penetrate enough to affect the wood color.

As time goes on I check the bowls less often. Generally, after six weeks the bowls are stable and won't crack after that. They are not dry at this time and will continue to move. I then move the bowls up on the racks around my shop and forget about them.

How long does it take to dry the blanks? Depends. Depends on the time of the year. Depends on the species of wood. Madrone burl (that has been boiled) and Big Leaf Maple dry in as little as 4-6 months in the summer. Oregon White Oak and California Black Oak take 18 months to two years.

Time of year to green turn. I like to do my green turning during the cool damp part of the year (late October to early May). This allows the blanks to dry slowly while it is cool. They are stable before it gets hot. I will rough out bowls in the summer time if that is when the wood is available but it is a lot more work to successfully dry them without cracking.

In this area (Western Oregon) roughed out wooden bowls will dry down to 13%-15% moisture content in the unheated part of my shop. Once they reach this point I can move them into my drying room. I keep it at 70 degrees f. and 60% humidity year round. The bowls will dry down to 6% - 8% in there.

The bowl is then ready to remount on the lathe. Remember that the bowl has "moved" during the drying process. The old center that the bowl was roughed out on may not be the new center. A quarter-sawn bowl will move more on the sapwood side as it dries. A flat-sawn bowl will end up longer with the grain and shorter across the grain as it dries. Burl and some woods like Apple will move in all kinds of directions. I measure across two points and locate the new center. I put the faceplate on and slowly rotate the bowl on the lathe. This will tell you if it is centered or you need to move it a little. And you may want to adjust the faceplate depending on how the grain pattern is in the bowl or to remove flaws on one side of the blank.

Because the center can change during the drying process I rarely use chucks to hold the bowl on the lathe for finish turning. I use face plates and screws. When I rough out the piece I try and leave an extra 1/2 to 3/4 inch extra scrap on the bottom to hold the screws. I generally use a chuck during the green turning. If you put screws into the wet wood during green turning the

tannic acid in the wood and the iron in the screws will react and leave a black spot in the wood that will have to be removed when you finish turn the bowl. After the bowl is dry I can move the faceplate around on the scrap part until I find the new center or where I want the center of the bowl to be. A chuck prevents adjusting for the new center. I also find that most chucks are too big and get in the way when I am turning the bowl down around the foot. A faceplate allows for more clearance down around the foot of the bowl.

You are now ready to remount and finish your bowl.

Green turning has some major advantages over turning dry wood. 1. It is easier to turn wet wood. 2. There is less dust. 3. Finding large pieces of dry wood free of defects and flaws would be hard. 4. I can use wood species and sizes of wood that are not found on the commercial market.

There is a final reason and probably the most important reason to use green wood: I get to control the wood blank. If I go out and buy bowl blanks I've let someone else make all the artistic decisions. Michael Elkan's book "Reading the Wood" says it all. How I cut the bowl blank out of the tree determines what the finished bowl will look like. If someone else cuts the bowl blank out of the tree, they make the artistic decisions. I want to make these decisions on my bowls. I want to "Read the Tree" and cut my blanks out. I am then responsible for what the finished bowl looks like. I want to cut for the prettiest bowls not the most bowls out of a given tree.

How much water is in green wood? I wanted to see how much water was in a block of wood. So I took a fresh cut blank of Black Oak and weighed it at every step of the process. The block was 8" thick and 18" square. Fresh from the tree it weighed 99 lbs. I band sawed it round. It weighed 69 lbs. I roughed it out the same day. It weighed 21 lbs. It took about 2 ½ years to dry. The dry roughed out blank weighed 10 lbs. Note that more than 50% of the weight of the blank was water. The finished bowl weighed about 3 lbs. Simply roughing out the solid blank got rid of nearly 80% of the weight and water the first day and it allowed the blank to move and dry successfully without cracking.

I encourage you to join the **American Association of Woodturners**. It is an organization dedicated to the education of woodturning. It is a great resource for skills, tools and mentors. Learning how to read and work wood has been a good path in life. I encourage you to walk down this path. Besides, everyone can turn a bowl.