

Missouri Chapter News

Walnut Council: Growing Walnut and Other Fine Hardwoods
SPECIAL EDITION



Missouri Chapter, Walnut Council

Website: <http://www.walnutcouncil.org/state-chapters/missouri.html>

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To Prune or Not to Prune

Written by Harlan Palm, Walnut Council Member

At a forestry conference in Ohio, Missouri Walnut Council member Bob Ball was told by a commercial logger and miller not to prune black walnut. "I can see swirls in the bark grain 20 years after a limb has been pruned," the logger said. "A clear stem of 20 feet is a strong indicator that manual pruning has been a part of this tree's history, so I'll likely discount it because I know there will be deep defects that appear during milling."

I feel this logger has based his feeling on trees that were pruned too late in their growth stages and had large limbs removed.

I expect that he has seen, and maybe bought, a few trees that were pruned when side limbs were 4-6 inches in diameter. Such limb cuts would take years to cover the wound and many more years, if ever, for the bark grain to straighten over the wound.

The visible swirls are called "cat facing." As the surface of the wound suberizes, the dead wood may shrink away from the new layers of growth that eventually cover the wound. With trees like this, it would be correct to leave the large side limbs attached so that all of the wood has a natural grain pattern, especially the beautiful crotch-wood grain.

As to the logger's second point, many of us have seen magnificently clear 20-30 foot trunks on walnut growing in ideal sites that have never been touched by man. Such trees underwent natural pruning because they were growing in a crowded situation during the pole-sized growth stage. As the dense stand of trees competed for light, the lower branches did not get enough sunlight, died and broke off from the developing trunk. But not all dead branches and limbs break off flush with the side of the tree. Annual rings grow around the stub and eventually cover the stub if it was not too long. Cat-facing swirls will show for many years and the stub will appear when the log is milled.

The logger's perspective reminded me of something I demonstrated during the 2008 National Walnut Council tour at my farm. Prior to the tour, I took a young 16 foot walnut butt log to my sawyer. The tree was only about 6-7 inches DBH (Diameter at Breast Height) and I had finished annual pruning of the tree a couple years prior. We made five cuts on the same level plane (without rolling the log between cuts as one normally does in squaring the cant). When these boards were displayed in the order they were cut, we could see how the

pruning wound covered over in two to four years depending on size of the branch that was cut off. We could also see how quickly the new annual rings straightened over the wound. In contrast, the bark pattern was forming a very pronounced swirl around the donut-shaped covering that initially formed over the wound.

The bark pattern continues to show the swirl for several years if the pruned branch was two inches or less in diameter, even though the wood grain is now straight. A bark ridge you see on a tree trunk is an accumulation of a series of many thin annual layers. An annual new layer is formed by the cambium as it forms a phloem layer which eventually converts to the bottom or inside layer of bark. The outer layers of bark do not readily slough off. The reason the bark pattern remains conspicuous for a long time is that the outer layers of bark are 15, 30 or more years old. So, I felt then that log buyers would use any slight evidence of a swirl in the bark pattern as an excuse to degrade the value of the tree even though the grain pattern in the wood underneath has been straight for many years after a branch has been removed.

If young walnut trees are pruned annually, none of the branches should get more than one-and-a-half to two inches in diameter at the cut. While managing the formation of a straight butt log that is clear for 17-20 feet, the stem is only about five inches DBH and three inches at 17 feet because of natural taper. Straight grained wood will be covering all the pruning wounds by time the young tree is about six inches DBH and four inches at 17 feet. Theoretically, all of the internal defects or pruning wounds will be within a six inch core in the trunk. If the tree is harvested at 26 inches DBH, there should be about 10 inches of straight grained heartwood, sapwood and bark on each side. (See photos 1, 2 and 3.)

I feel that proper corrective pruning of young walnut should increase the value five-fold, 10-fold and even more on sites ideally suited for black walnut.

Another observation I have made while milling logs is the "natural straightening" that trees undergo. By straightening, I mean where the stem of a sapling had a short curve with an inch or two of displacement within a vertical 1-2 feet of stem. By time that tree is 10 inches DBH or less, the sides of the tree will be virtually straight. The straightening is accomplished by the tree forming a thicker annual ring on the concave side than it will on the convex side of the curves. (See photo 4) Why the tree does that is beyond me. It must have something to do with developing strength in the trunk. It surely is not because the tree wants to produce beautiful wood for wood workers!

My recommendation remains that we should do corrective pruning annually while trying to remove branches before they exceed 1.5 – 2 inches in diameter.



Photo 1



Photo 2



Photo 3



Photo 4



8.5 foot stake beside a tree pruned annually of its largest limbs.