

# Missouri Chapter News

Walnut Council: Growing Walnut and Other Fine Hardwoods



## Pruning Phases

**Bob Ball, Member, Missouri Walnut Council**

Woodland landowners may confuse “pruning” with “limbing”. We often remove limbs because they are in the way when operating equipment near the trees, there may have been storm damage resulting in the need to remove damaged or diseased limbs, or limbs impeding the view from a favorite vantage point. In these examples there is no concern about the sizes of limbs being removed, timing, or impact on the long-term timber value of the trees. My term for this activity is just “limbing”.

“Pruning”, however, is carried out largely during the dormant season and the specific goal is producing butt logs of greater market value. Possibly a percentage of those butt logs will become “veneer” quality at harvest. Our goal when pruning is producing logs that will one day meet the criteria for veneer for whatever the market demand might be in the future. Former member and Consulting Forester, Scott Brundage, reminded us **‘pruning pays very well per hour at harvest time!’**

The timing of when to prune is important for many reasons to include reducing the possibility of airborne spores entering pruning wounds causing disease, reducing the weight of limbs supporting heavy leaves, preventing tearing where the branch collar forms along the tree trunk during heavy sap flow, and to simply see the true shape and framework of the tree canopy. Pruning during the dormant season (**mid-November through mid-February**) is ideal; however, if you see a limb that needs to be removed on a tree you may not revisit during the dormant season prune it off then!

Removing an occasional limb outside the dormant season is far better than forgetting about it and allowing those limbs to become 3” in diameter.

From my experience there are three phases to pruning (*my terminology*):

- **corrective pruning,**
- **pole timber pruning, and**
- **pruning for harvest.**



Harlan Palm has been growing and pruning trees on his farm for many years. This natural regeneration white oak has never been pruned. Plantation-grown fine hardwood trees WILL need pruning and thinning.

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**Corrective Pruning** – The goal here is producing a strong and straight central leader under an open canopy. This can begin when the sapling is 3’ to 4’ in height, or even shorter, typically removing only 1 to 2 limbs. Finding the best central leader from the top whorl of branches and removing all but one or maybe two of those leaders is our primary objective in corrective pruning.

This phase may entail taping or splinting small branches to encourage development of a single leader while also pruning back any competing leaders. It is equally important to remove or cut back any competing canopy from nearby trees. This helps ensure the central leader of our black walnut or white oak can grow straight and tall without shading within the tree or pulling from vines and shading from nearby trees. A few side branches may be removed as well, but the main focus is on the top of the tree.

Tools used in this phase include hand pruners or shears, hand held razor tooth curved pruning saw, tree loppers, tape of your preference, possibly splints, and a chain drive manual telescoping pole saw with shears to work the top of saplings beyond your arm’s reach.

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**Photo Above** - Harlan Palm applying corrective pruning to form a dominate central leader.

**Photo Right** - The use of splints and/or tape can help shape the central leader you want. Ensure the leader is at least 6” superior in height to all other limbs on that tree. Next pruning season the support branch, left, will be completely removed.



**Pole Timber Pruning** - The focus in this phase is still largely on the central leader working from the top of the tree down, but more effort is placed on removing lateral branches 1.5" in diameter or smaller. The smaller the branches the fewer years needed to cover and disguise the pruning wound. Branches larger than 1" in diameter will need many years to fully heal even when the branch collar cuts are done correctly. Consulting Forester and Missouri Walnut Council member, Fred Crouse, said, **"A typical 1 inch diameter pruning wound should cover over and the bark defect disappear in about 12 years."**

Trees growing on ideal sites where they have tremendous growth potential should recover more quickly. You can make the case for removing somewhat larger branches when the butt log is roughly 5" DBH or less. Hopefully, the tree will add enough growth to cover the wound and then add additional clear wood over the pruning wound many years before it is harvested.

Pruning larger limbs may move the butt log from consideration for veneer quality down to saw log quality, and that may be fine in your case. The reality is only a small percentage of our trees will become veneer quality unless the standards change dramatically.

The primary tool used in this phase will be a telescoping pole saw. Whether you opt to use a manual pole saw or a powered unit is your preference. They both have features and benefits. Review two Technical Articles posted at our chapter website before deciding which equipment may best meet your pruning needs:

[A Case for Power Pole Saws](#) or [Considerations when Selecting Power Pole Saws for Pruning](#)



**Photo Above** - Harlan Palm continues to shape the top of this pole-size walnut tree using the saw blade on his manual pole saw. In phase I or II it is imperative you only prune potential crop trees. That decision is not an easy one to make and often non-crop trees eventually exceed your expectations. For that reason, be slow to thin your trees too early.

**Photo Left** - Be realistic about determining your target pruning height. Some sites and some trees within even the better sites do not have the potential to be pruned high.



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Your goal is to remove **no more than 25% of the entire tree's canopy** in a single pruning season to avoid a flush of “*epicormic*” branches the following spring. **Epicormic buds** lie dormant beneath the bark. Their growth is suppressed by hormones from active shoots higher up the plant. Under certain conditions, they grow into active shoots, when damage (such as pruning) occurs to higher parts of the tree, or light levels are increased following removal of nearby trees.

When pruning, focus on the limbs near the central leader first giving special attention to the size and position of those limbs then work down the trunk keeping that 25% factor in mind. The primary tool used is a pole saw with chain drive pruning shears. Removing these small limbs at that height can be difficult using any hand sawing action. Power pole saws can be effective in removing these smaller limbs, but I prefer using tree shears. The key is making a final clean cut at the branch collar several feet above ground and preventing those limbs from falling on your head! Always wear an approved helmet, leather gloves, and other safety gear when pruning!

**Pruning for Harvest** – This phase kicks in when the tree is about 25' tall and it is roughly 6" in DBH. My personal target pruning height is 21' 6" (12' butt log + 8' second log with 3" of trim on each log end combined with a 6" cutting height above the ground). It is critical to note any target height is not forced on all trees. Some sites within a plantation may only support a 9' target pruning height for a variety of reasons. A very common pruning height is 13' for 12' veneer logs. There are plantations with ideal soils and topography to also support pruning heights much higher requiring a mechanical lift device in addition to a fully extended pole pruning saw.

Select a pruning height that meets your physical capabilities and limitations, your pruning tools, your budget, the soil site conditions in the plantation, and and maybe the most critical factor, the future market.

During this phase of pruning ensure you have not missed a small limb on the bole of the tree (butt log and second log) or epicormic branches that have emerged since last pruning season. The central leader and crown of the tree should be set, so your focus is on ensuring the bole is clear of limbs until the tree reaches harvest.

For this phase I personally use a 22' manual pole saw only and spend a minimal amount of time with each tree. Once this last visit is made there should be no reason to prune those trees any further. This concludes the tree pruning phases, but **the total elapsed time can be 12-15 years** following the conservative 25% removal rate guidance.

Harlan Palm stands next to one of his black walnut trees on the family tree farm in Callaway County. The pruning and thinning are done. These trees just need more time to reach their full harvest potential.

