

# Missouri Chapter News

Walnut Council: Growing Walnut and Other Fine Hardwoods



## Target Pruning and Compartmentalization

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You can increase the value of black walnut trees by appropriately applying **target pruning**. This technique removes unwanted branches AND makes use of specialize tissue located in a tree's branch collar predisposed to protect the tree from pathogens.

The advantage of target pruning is any pathogen we may have on our pruning tools is introduced into the branch wood which is quickly walled off from the stem wood. If we mistakenly cut into the stem wood, the stem wood will create a boundary to wall out any pathogens that may be introduced by pruning. This walling off is termed "*compartmentalization*" which requires some time to form. It is not a quick response. Flush cutting (cutting along line AX in the diagram on page 2) delays compartmentalization protection. It takes a long time to develop cells capable of walling off infestations unlike **target pruning** where the cells are already preprogramed to provide a quick barrier.

### How Branches Grow –

Tree branches grow in diameter very early in the spring BEFORE the stem begins to grow. The result of this timing is a strong branch union when the stem diameter growth overlaps the newly established branch wood produced earlier in that **same** spring timeline. If we can time the pruning of a branch - using the target pruning approach - to coincide with this natural late winter/very early spring diameter growth of the branch collar, the pruning wound will successfully close by 1) the new branch collar diameter growth, and then 2) the new stem diameter growth.

Black walnuts that are growing well and "not stressed" can completely cover pruning wounds with new wood within one growing season – provided the pruned branch diameter is 1.5 inches or less at the branch collar. Pruning larger branches greatly increases the time (years) needed to completely cover the pruning wounds. If the wounds (referred to as "cat faces") are large enough, they may be visible for years even after many layers of stem wood are laid down.

### Importance of Target Pruning -

With target pruning we are less likely to need to disinfect our equipment between cuts or even between trees because any pathogens on our equipment are introduced into branch wood which is very quickly walled off by the tree. If our cuts remove part of the branch collar, these pathogens can be introduced into both branch and stem wood. Pathogens will move through the stem wood back into the main stem to produce discoloration, decay, or cankers depending on how vigorous the tree and pathogen are.

On trees where the branch collar is nearly invisible, your clue where to cut to stay outside the branch collar is the **branch bark ridge**. If the stem is straight, drop a vertical line from the top of the branch bark ridge parallel with the outside of the stem. Look at the angle made between that vertical line and the branch bark ridge. Image this same angle on the opposite side of the vertical line. Set you pruning saw just outside the top of the branch bark ridge and cut along this imaginary line.

Most pruning guidelines recommend using a three-cut process to remove large branches which can be very difficult using a pole saw on branches near the top of the future log. Instead, stub cutting followed by target pruning requires less work and is less likely to wound the stem.

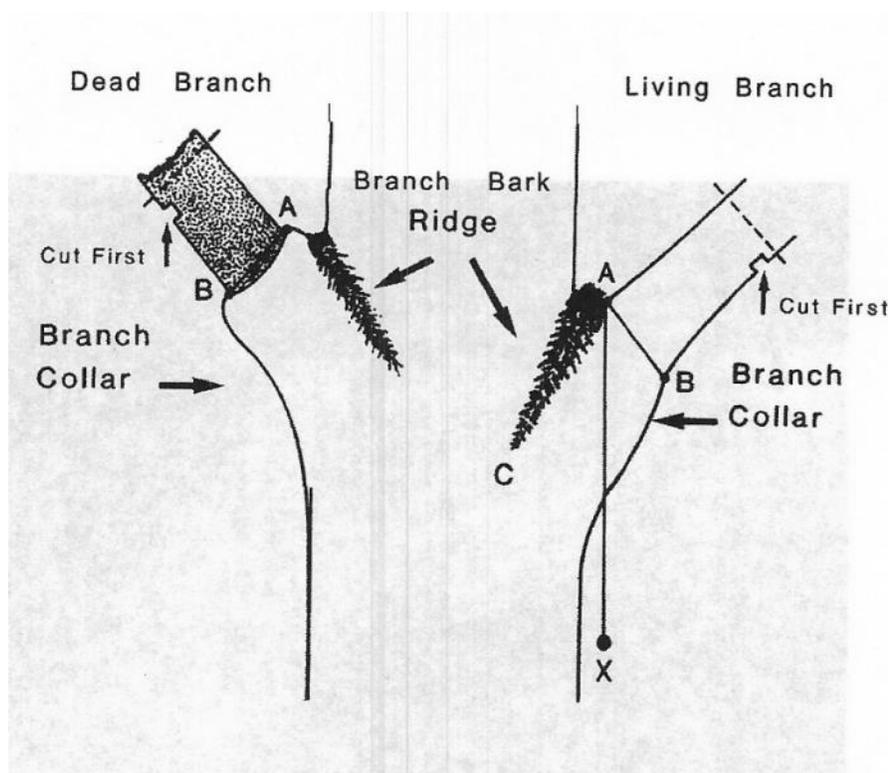
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## Timing of Pruning -

It is recommended black walnut trees be pruned during the dormant period which is generally considered to be November through the end of February, but this period varies somewhat depending on seasonal temperatures. The loss of sap from bleeding caused by pruning wounds will not seriously injure the tree. However, sap flows can attract pathogen carrying spores and insects that can become a problem without the compartmentalization process taking place.

You should not prune oaks in the red oak group when the insect that carries oak wilt is active. Refer to the paper titled [“Time Pruning to Avoid Disease”](#) by Wright and Van Sambeek in the **Pruning Articles** on the Missouri Chapter Walnut Council website for more information.

## Diagram of Target Pruning -



### To Implement Target Pruning:

1. Locate the branch bark ridge.
2. Find target A – outside of the branch bark ridge.
3. Find target B – where the branch meets the branch collar.
4. If B is hard to find – drop a line at AX. The angle XAC is equal to the angle XAB.
5. If the branch to be pruned is large, avoid splitting and tearing by making an undercut at the location marked “Cut First” a few inches from the branch collar. Then, make a stub cut outside of the first cut.
6. Make the final cut at the line AB.

**Note:** An alternative for Step 5 is to make a “stub cut” approximately 18” outside of the branch collar to drop most of the weight of the branch then make the final cut as shown in Step 6. This stub cut is likely to peel some bark back along the underside of the stub as you finish the cut; however, it is unlikely to peel back to the branch collar. Adjust the distance in making that cut outside the collar based on branch size to ensure any peeling avoids the collar.