

# Training Tart Cherry Trees

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Proper tree training is important for maximizing the profit potential of any tree fruit crop. This is certainly the case with tart cherries. Therefore, it seems appropriate at this time of year to review tart cherry training system objectives and discuss how to best achieve those objectives.

From my perspective, there are two fundamental demands we must impose on the tree. First, we must have a relatively long trunk before allowing the lowest scaffold to develop to facilitate mechanical harvesting. I prefer to see the lowest scaffold at least 36 inches from the ground. While this long trunk complicates tree training efforts in the early years, it does have the benefits of providing some dwarfing which has helped us manage orchards at closer spacings.

The second factor I feel cannot be tolerated is narrow crotch angles. Scaffold limbs arising from narrow crotch angles are very prone to splitting off when the tree hangs its first big crop. That often leads to further tree breakage in subsequent years. We cannot afford to raise trees only to see them fall apart prematurely. A wide crotch angle is far stronger and avoids this breakage problem.

It is also desirable to fill the space allotted for the tree as quickly as possible. To help achieve this, we currently plant the trees closer together so that each tree has less space to fill. Under northwest Michigan conditions, the tree spacings are usually 14 to 18 feet within the row by 20 to 22 feet between rows. Closer plantings are possible but require a higher level of management. Cropping when the tree is very small and must be hand harvested is not as essential as quickly filling the space given current pricing. Gibberellic acid is also a tool used to minimize fruiting and thereby maximize growth.

To best accomplish this combination of sometimes competing objectives, we have developed a system based on a modified central leader. Limbs are selected for scaffolds that have the desired wide crotch angles and spaced at least 6 to 8 inches apart. If two or three limbs are selected with less than this distance between them, they will usually develop at the expense of the leader and any scaffolds above that point. In other words, if the bottom two or three limbs emerge from approximately the location on the leader, everything above will be choked out.

We like to select four limbs as scaffolds in the year of selection. Avoid selecting only one or two as the tree will then develop only those plus the leader into scaffolds.

For most of the plantings, once the initial selection of four scaffolds is made, in subsequent years the leader will be managed much as the other scaffolds. In very high density orchards, i.e. 9-14 feet between trees, then the leader should be maintained for a longer period of time and more scaffolds will be added in subsequent years.

To achieve this, the following procedures have worked well.

**Year of Planting** - Begin by planting nursery stock that is at least 1/2 inch in diameter. This will help the tree achieve enough trunk height within two years for good scaffold placement. Small stock may cost an additional year in training.

Always whip the trees at planting. Scaffold limbs on nursery trees are too upright and too low to meet our objectives.

Provide the trees with good conditions for growth the first year. No summer manipulation of branches is generally required.

**Second Spring** - Do not prune young trees until the danger of extremely cold winter temperatures is past.

After many years of trying various techniques, including extensive limb manipulation in the year of planting, we find that rarely does a tree reach the necessary size to select four scaffolds, beginning at about 36 inches above the ground with a minimum of six inches between limbs. Therefore, we developed a technique called "nub whipping" that works very well. Low limbs are pruned off. **All** limbs above that are pruned back to 1/4 - 1/2 inch stubs. These stubs should be just long enough to keep the bud that nearly always occurs on the bottom of one year old limbs right next to the leader. These bottom buds will grow a new lateral with an excellent wide crotch angle. The more buds that break, the flatter the limbs will grow and the better the selection of potential scaffolds for next year. Remove any short shoots that may have developed on the leader during the season on last year's growth. Do not head the leader. We want every bud available along the leader to form as many shoots as possible.

**Summer of Second Leaf** - When the shoots are three to five inches in length, it is desirable to walk through the orchard. Most trees will need no manipulation, but occasionally a tree will have only a few lateral shoots growing which often results in upright branches. Place clothes pins on the leader directly above the shoots to create a 90 degree crotch angle. Only leave clothes pins on for a couple of weeks. Again, for orchards with good vigor, this should only need to be done on an occasional tree.

**Third Spring** - Select four wide angled scaffold limbs, beginning at least 36 inches from the ground and spaced at least six inches apart. Completely remove limbs below the lowest scaffold. Also completely remove the one or two very upright limbs that grew from the buds just below last year's terminal bud. Other lateral limbs that are not being saved as scaffolds that are generally located above scaffolds should be cut back to four to six inch stubs rather than completely removed. These stubs will result in shoot growth that helps direct the growth of the scaffolds outward rather than turning too upward. These stubs will be removed next spring. No summer work is necessary.

**Fourth Spring** - For very high density orchards that are planted at 9-14 feet between trees, use the same system as described in the third spring to select an additional three to four scaffolds. For trees on more typical spacing this may also be done but generally these upper limbs will never really develop into a significant scaffold. The basic structure is developed. The leader rarely stays in the middle and instead will ultimately fill a scaffold position. The stubs that were saved last year are now removed. Do not remove too many of the new shoots from the leader. If saving three or four as possible future scaffolds, then use the 4-6 inch stubbing technique on some of the remaining limbs. Over-pruning of the leader tends to cause the scaffolds to grow too upright.

Always remove the one to three competitive branches that emerged from the buds just below the terminal buds on each scaffold and the leader. Thin out other branches on scaffolds.

Do not bench cut scaffold limbs by removing the terminal in favor of a lower, more outward growing lateral. Bench cuts leave a weak spot that often breaks later. Bench cuts also often shut down the growth of the scaffold. The possible exception is when a lower, outward growing limb exists that would change the limb angle by less than 30 degrees and both limbs are of equal size.

#### **Fifth and Sixth Spring**

Remove the one to three upright, most competitive branches competing with the terminals of the scaffolds and leader. Thin out other branches as appropriate to keep adequate light into trees.