

Cherries

Training and Pruning Tart Cherry Trees

At planting. Plant sweet cherry trees 20 feet apart. Plant sour cherry trees 10 feet apart. Most tart cherry trees come from the nursery with feathers or branches. Remove all branches less than 24 inches above ground and remove all branches with narrow crotches. Branches arising from narrow crotch angles are very prone to splitting off when the tree produces its first big crop. Narrow crotches also often become infected with diseases and are sites for borer entry. Wide crotch angles are much stronger and selection of such branches usually prevents branch splitting. If there is only one desirable branch on the tree, it should be removed. Limbs 24 inches above ground that are removed should be removed by pruning to 1/4-1/2 inch stubs. These stubs should be just long enough to retain the bud that usually occurs on the bottom of 1-year-old limbs right next to the leader. The bottom buds will develop into a new lateral with a wide crotch. If present, retain 2 to 4 branches with wide crotch angles and spaced at least 6 to 8 inches apart vertically along the trunk. These will become permanent scaffold branches. If two or three branches are selected with less distance between them, they will choke out the leader and the leader will be weak. Head the leader because it is desirable to have many buds to break to produce future scaffold branches.

First summer. Most shoots developing during the first summer will need no manipulation, but some will need to be spread to improve the crotch angle. When shoots are 3 to 5 inches in length, place clothespins on the leader directly above the shoots with narrow crotches to create a 90-degree crotch angle. Remove the clothespins after two weeks.

First winter. Avoid pruning until late winter or early spring (late February to late March). Pruning temporarily reduces the resistance of trees to low temperatures. Trees pruned within two weeks before severe cold often have winter injury. Remove all shoots with narrow crotches, especially those developing from buds directly beneath the top bud. Remove limbs less than 24 inches above ground.

Ultimately we want four primary scaffold branches with wide crotches in the lower part of the tree and spaced along the leader from 24 to about 56 inches above ground. Other lateral limbs that are not being saved as scaffolds that are located above the scaffolds should be cut back to 4- to 6-inch stubs. 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 the next year.

Second winter. Basically follow the same procedure described for the first winter. If the tree grew well, the basic structure should be developed. Remove the stubs that were saved the previous year. Remove the one to three vigorous upright branches emerging from the buds just below the terminal buds on each scaffold limb and the leader. Do not remove too many of the new shoots from the leader. Three or four more branches can be retained as weaker scaffold branches above the lower four branches. Use the 4- to 6-inch stubbing technique on some of the remaining limbs. Over pruning the leader tends to cause the scaffold to grow too upright. Eventually the leader will become weak and develop into a scaffold branch. 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 slow the growth of the scaffold.

Third winter and thereafter. Remove the one to three upright, most competitive branches competing with the terminals of the scaffolds and leader. Mature trees require very little pruning: thin out branches as needed to keep adequate light into trees. If the tree grows taller than desired, lower the tree by cutting into 2- or 3-year-old wood by cutting to a strong outward-growing branch. Remove dead or broken branches each winter.

Training and Pruning Sweet Cherry Trees

Sweet cherry trees are pruned to maintain tree size and shape, to allow good light distribution throughout the canopy, and to balance vegetative growth with reproductive growth. Most of the fruit are produced on spurs. Spurs are short shoots that usually grow less than an inch in a given year. They arise from the lateral leaf buds, usually on shoots that are one year old. Spurs always have a terminal bud and several flower buds that are borne laterally, often in clusters, on the portion of the spur that grew the previous year. The terminal bud produces a leafy shoot, so the spur elongates in a nearly straight line for several years. Spurs remain productive for 10 to 12 years, but the largest and highest quality cherries are produced at the base of the previous season's growth and on 1- to 3-year-old spurs. Therefore, it is important to grow many new 10- to 12-inch-long shoots throughout the tree while limiting the number of old spurs.

There are many training systems for sweet cherry trees. The two systems described here include the central leader and the open vase forms. The central leader form is probably best for trees on dwarf rootstocks and the open vase form is best for trees on vigorous rootstocks. Sweet cherry trees are large and vigorous and can attain a height of 30 feet. Without some type of manipulation, they produce long shoots with few lateral branches. Such branches are not very fruitful and they are difficult to maintain. Properly pruned trees produce more branches that are closer together, but heavy pruning of young trees also will delay fruiting. Trees on vigorous rootstocks and pruned with traditional methods rarely produce a crop before the fifth or sixth year. Dwarfing rootstocks make it much easier to control vigor and the trees produce fruit in the third year.

Central Leader Training

Central leader training of sweet cherry is fairly new and several methods are being developed in Europe for trees on dwarfing rootstocks. As we gain experience with central leader training, the techniques will continue to evolve. Presented below is a method developed from ideas suggested by cherry researchers in Michigan and Washington.

At planting. All branches are usually removed at planting because few branches are at the appropriate height. If a tree has at least three nice branches arising from the leader at 24 inches or more above ground and with wide crotches, the branches can be retained. Head the branches about 50%. Heading involves removing the terminal end of a branch. Heading will stiffen the branch and induce branching near the heading cut. Head the leader to a height of about 30 inches above ground.

First summer. When newly developing limbs are 3 to 5 inches long, attach clothespins to the trunk above limbs with narrow crotches to push the limb outward and widen the crotch. The ideal crotch angle is 90 degrees. Large clothespins work better than standard pins. Using clothespins later in the season is less successful because limbs are difficult to reorient as they become stiff at the base.

Later in the summer if some potential scaffolds are growing too upright, they can be tied down, but they should be kept above the horizontal. Vigorous shoots should be headed by 25%.

First winter. Completely remove all limbs lower than 24 inches above ground. Retain 4 to 6 scaffold branches with wide crotches. With a horizontal cut that leaves the bud at the base of the limb, remove upright limbs with narrow crotches. This type of cut will usually stimulate a branch to form, with a wide crotch, from the bud. Limbs above the desired scaffolds that have wide crotches should remain, but if too upright or dominant, they can be tied or weighted down, or cut back to 8- to 10- inch stubs. Sweet cherry trees tend to produce shoots from two to four buds directly below the terminal bud and these developing shoots inhibit development of shoots from lower buds. If trees are allowed to grow naturally, there is a central leader with a whirl of branches with narrow crotches at the tip of each year's growth and blind wood (sections of the leader with no branches) between the whirls of branches. Most of the branches with narrow crotches should be removed. Such trees are not very productive during the early years due to inadequate numbers of desirable branches. At 1/2 inch bud growth - When the vegetative buds are about 1/2 inch long, leader manipulation is required to slow the vertical growth of the tree and to induce better branching. If the leader grew more than 20 inches, it should be headed to remove 1/3 of last year's growth. Debud the leader by removing the buds for 3 to 4 inches below the terminal bud. This includes removing buds on either side of the terminal bud if the terminal was not headed. If last year's terminal growth was less than about 30 inches, also remove every other bud. If last year's terminal growth was greater than 30 inches, remove two out of three buds. Remove shoots that grew on last year's terminal growth.

Second and Third Winters. If necessary, head the leader to 30 inches of new growth. Debudding leaders in the third year may be desirable, but usually no debudding is needed thereafter. Remove very upright limbs with horizontal cuts. Begin removing or shortening back limbs that are too dominant. Minimize pruning of vigorous trees to encourage early fruiting, but less vigorous trees or trees on dwarfing rootstocks may require heavier pruning to balance cropping and vegetative growth.

Scaffold branch management during the third and fourth years depends on the vigor of the trees. When trees are growing vigorously, the scaffold branches should not be headed to encourage fruiting. When tree vigor is low, especially on dwarfing rootstocks, the trees may over crop and stop growing before they have grown large enough to produce large crops. To prevent over cropping of young trees, head the scaffolds during the first, second, and third winters. Head to an upright bud, and the next winter the shoot developing from the upright bud is removed by heading to an outward growing shoot. This type of heading will reduce the fruiting potential by reducing the number of future spurs.

Fifth winter and thereafter. Prune to maintain adequate vigor and light throughout the tree. Because of the high productivity of dwarf rootstocks, pruning may need to be more severe to attain adequate growth to achieve large fruit size. The extent of this pruning is determined by the tree vigor, the fruiting potential of the variety, and the desired fruit size.

Open Vase Training

At planting. All branches on newly planted trees are usually removed because they are at the wrong height or because they have narrow crotches. If there are no branches on the tree, head the leader 30 inches above ground. If there are at least two desirable branches (branches with wide crotches and located 24 to 30 inches above the ground), then retain those branches and remove all branches arising less than 24 inches above ground and all branches with narrow crotches; head the leader by 1/3. The branches should be cut back only if necessary to reduce the longest ones to about the same length as the shortest.

First summer. When shoots are 3 to 5 inches long, spread them with clothespins to develop wide crotch angles.

First winter. Remove all branches less than 24 inches above ground and all branches with narrow crotches. Retain 3 or 4 scaffold branches with wide crotches that arise on different sides of the tree. Ideally, the branches should be arranged around the leader about 90 degrees from one another. The branches should also be spaced 6 to 10 inches apart, vertically along the leader.

Branches selected in this manner will be stronger and more resistant to winter injury and canker than poorly formed branches. Sometimes, especially when the tree does not grow vigorously, it may require another season to develop the desired number of scaffold branches. Remove the two buds just below the terminal bud.

Second winter. Remove all branches with narrow crotches or that arise less than 24 inches above ground. If necessary, select the remaining permanent branches. There should be no more than 4 primary scaffold branches. Secondary branches will develop from the buds just below the previous season's terminal bud. Remove any secondary branches with narrow crotches arising along the primary scaffold branch.

Third winter and beyond. After selecting the scaffold branches, little additional pruning is needed. Too much pruning will reduce fruiting. When the tree becomes too tall, shorten the branches by cutting the most upright branches to outward-growing limbs.