

PRUNING TIPS

By Tom Del Hotal

All trees and plants benefit from pruning. Primary reasons for pruning include pruning for structural strength, health, shape, fruit production and size control. In addition, containerized plants need to be root pruned every 3-5 years to help keep them healthy and vigorous.

PRUNING FOR STRUCTURAL STRENGTH

Pruning for structural strength is especially important on fruit trees. Heavy crops of fruit can easily break branches, severely damaging main scaffold limbs or splitting trunks. Basic guidelines for structural pruning are as follows:

1. Remove branches which are attached to the bottoms of other branches. These bottom branches easily split off, ripping away the lower surface of the supporting branch.
2. Remove co-dominant leaders. When plants develop two or more leaders (or branches) arising from the same point on the stem, narrow crotch angles and included bark often results. The risk of these leaders or branches splitting apart the main trunk or supporting branch is high. Remove all but one leader or branch by pruning at an angle determine by the branch bark ridge and develop internode space between branches or leaders (in the case of modified central leader pruning).
3. Develop internode space between branches. When two or more branches arise from the same area on the trunk of the tree, these branches are often weakly attached and can easily split off. Develop good branch structure by encouraging internode space between branches and spirally arranging the branches around the trunk of the tree.
4. Widen crotch angles by removing branches or by spreading branches outward to develop crotch angles of 45-90 degrees. Branches which have crotch angles of less than 30 degrees often develop poor branch attachment and easily split off.

PRUNING FOR HEALTH

Whenever pruning cuts are made, it is extremely important to consider where on the branch the cut is made. Leaving branch stubs can prevent healing and can encourage insects, disease and decay. Cutting too close to the attached branch can result in cutting into the shoulder of the branch, resulting in an enlarged wound. This again impairs proper healing and encourages insect attack, disease and decay.

1. Proper thinning cuts are made by cutting off the desired branch flush with the top of the shoulder on the attached branch. The shoulder is the swollen area at the base of a branch and is an area of rapid cell division and healing.
2. Prune off the four D's: dead, damaged, diseased, and dysfunctional branches. Removal of dysfunctional branches corrects excessive crowding of branches and foliage and increases air circulation and ventilation to the plant. The result of this type of thinning is often reduced pest and disease problems.

PRUNING FOR SHAPE

Pruning can alter a plants shape by removing branches or by directing growth into unpruned branches. Espaliers, topiaries, standards (patio trees or shade trees), hedges and bonsais are all examples of pruning for shape. Although the shape of our plants is sometimes a higher priority than fruit production, pruning rules for structural strength and health should still be followed irregardless of the ultimate shape.

PRUNING FOR FRUIT PRODUCTION

Different types of fruit trees produce fruit and flowers on different types of branches. Some trees produce on current seasons shoots, whereas others produce on year old wood or on fruiting spurs which are produced on two year old wood and older. Care must be exercised to preserve and promote the appropriate type of fruiting wood for the specific type of fruit tree. Specific pruning shapes have been found beneficial for fruit production in some types of fruit trees.

Trees in the genus *Prunus*. (peach, nectarine, plum, apricot, almond and cherry) all benefit from being shaped into an open vase or modified open vase shape. This means the center of the tree is removed, leaving a framework (scaffold) of outer branches that resembles a bowl-like shape, Keep in mind that all scaffold branches should not sprout from the same area on the trunk, but should occur in a spiral pattern around the trunk with internode space between branches. Peaches and nectarines bear fruit on last years wood. Plums, apricots and almonds bear primarily on two year old and older wood on fruiting spurs.

PRUNING FOR FRUIT PRODUCTION (Continued)

Most other fruiting trees and shrubs can be pruned into central leader or modified central leader shapes for good fruit production. These types of pruning styles develop the plants into a Christmas tree-like shape or a shape that resembles a rounded top tree. Like trees in the genus *Prunus*, some trees bear fruit on last years wood, some on two year old and older wood on fruiting spurs, and others bear on the current seasons growth. Keep in mind on what age wood and where on the branch fruit is produced (tip or mid branch) when pruning.

PRUNING FOR SIZE CONTROL

Pruning for size control does not mean topping! Topping or heading, (the removal of dominant growing points) can cause excessive secondary growth which results in weak crotches, overcrowded branches and poor branch attachment. Topping cuts do not generally promote wound closure and compartmentalization of the wounded area and frequently promote decay and disease. Plants generally respond to topping cuts by developing very vigorous shoot growth and any reduction in the size of the plant is very temporary.

Thinning cuts made to reduce branch or leader size by cutting back to secondary laterals can effectively reduce plant height and circumference while preventing the detrimental effects of topping. Removing taller or longer branches by cutting back to the collar of a secondary lateral branch which is ideally 1/3 the size of the branch which is being removed is a thinning technique called drop-crotching. The lateral branch should remain unpruned to take over the dominant role of the removed branch. If further size reduction of the branch is desired, this lateral may also be drop-crotched.

For plants in containers we must maintain a balanced relationship between the shoot growth above ground and the root growth which is limited by the container. This means we must continually transplant our plants into larger containers or we must control the shoot growth by pruning. There are no hard and fast rules on what is a balanced root to shoot ratio. Good judgment, common sense and experience will help you to develop a reasonable balance.

TIMING

Improper timing can predispose plants to attack by insects, diseases, or damage from sunburn or sunscald. Most pruning should be done during the winter months on deciduous fruit trees when the trees are dormant and when insect populations are suppressed by the winter cold. In some cases, lighter summer pruning can be beneficial for keeping trees smaller, however many bark boring insects are promoted by summer pruning. If these insects are common in your area, keep summer pruning activities to a minimum.

Pruning on evergreen trees is usually best preformed in early spring after frost danger is passed or in early fall after the hot summer weather is over. No more than 20-30% of the branches or foliage should be removed at each pruning. The bark of many evergreen trees is susceptible to damage from sunburn or sunscald, so sufficient foliage should remain after pruning to protect the bark from sun damage.

FRUITING HABITS OF COMMON FRUIT AND NUTS

This chart shows the position on the branch where fruit will be borne and the type and age of wood that bears fruit.

Current-Season's Shoots	Previous-Season's Shoots	Previous-Season's Spurs and Shoots	Long-lived Spurs
Fig — second crop	Avocado	Apple — minor	Almond
Grape	Blackberry	Cherry, sour	Apple
Lemon	Black Currant	Gooseberry	Apricot — short-lived spur
Orange	Black Raspberry	Pear — minor	Blueberry
Persimmon	Fig — first crop	Pomegranate	Cherry, sour
Quince	Filbert	Red Currant	Cherry, sweet
Raspberry — everbearing	Nectarine	White Currant	Pear
Walnut	Olive		Pecan
	Peach		Plum, European
	Pistachio		Plum, Japanese
	Quince		Pomegranate

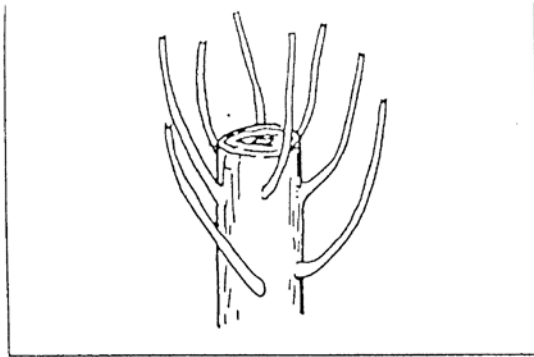


Fig. 8.11 Watersprouts develop profusely following a heading cut.

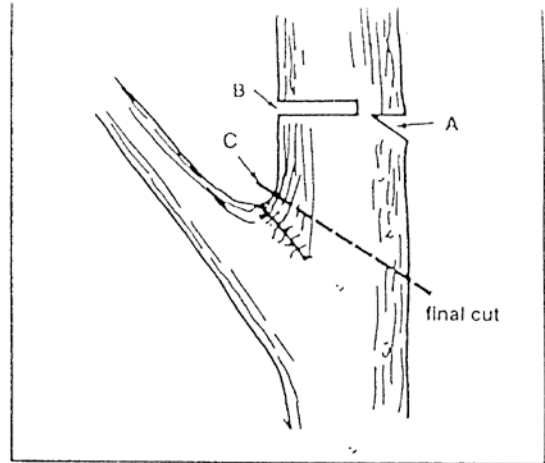


Fig. 8.10 Drop crotch pruning cuts a limb back to a major lateral.

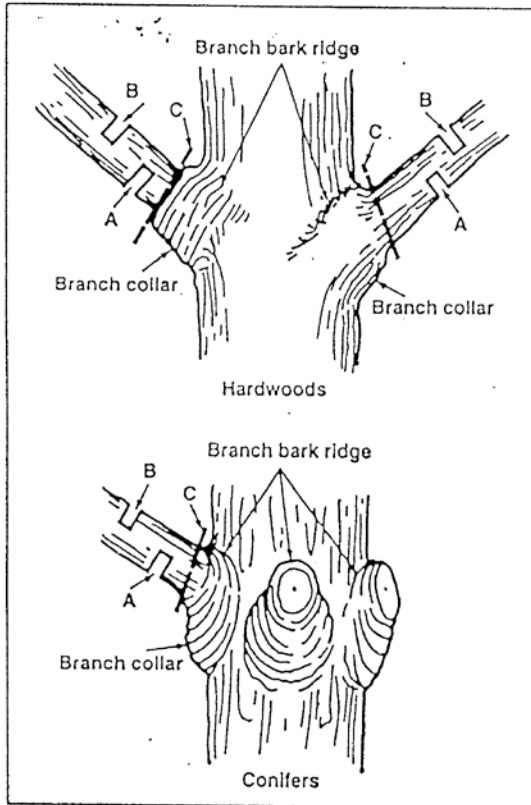


Fig. 8.2 Pruning principles. The first cut (A) undercuts the limb. The second cut (B) removes the limb. The final cut (C) should be just outside the branch collar to remove the resultant stub.

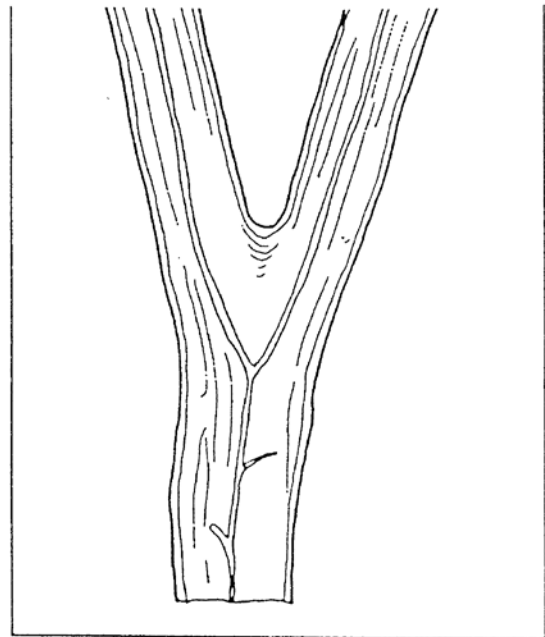


Fig. 8.4 Codominant stems. The nearly equal diameter of the two stems can make them more prone to failure.

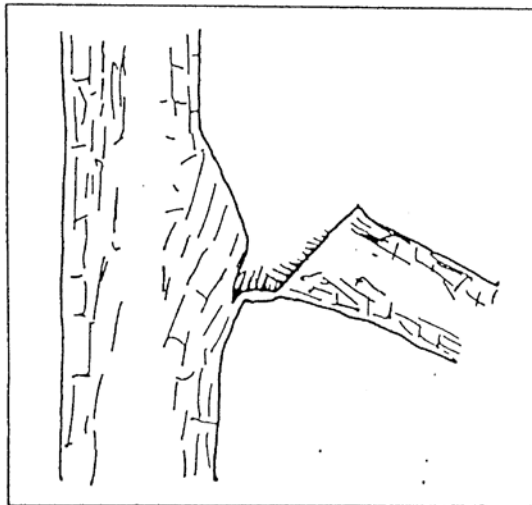


Fig. 8.3 Improper pruning cut. If a heavy limb is not undercut, it may "peel" back, tearing bark and vascular tissues of the parent limb.

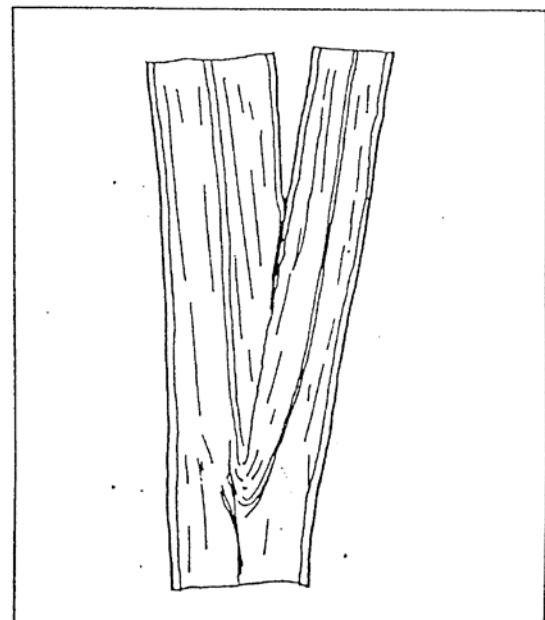


Fig. 8.5 Included bark can be a problem in tight crotches. This weakens branch attachment.