



Pruning Fruiting Plants

Compiled from various UGA publications

Pruning and Training Peach Trees

The day you plant your trees is the day you begin to prune and train for future production. Too often backyard growers plant trees and leave them unattended for several years. This neglect results in poor growth, shading out and limb breakage. The purpose of pruning a young tree is to control its shape by developing a strong, well-balanced framework of scaffold branches. Because peach trees bear fruit on wood that grew the previous year, the pruning system best suited to keep the fruit-bearing surface close to the ground is the Open Center. The Open Center, which roughly resembles a vase, is also a good system for plums.

At planting: Regardless of whether you buy an unbranched tree, a well-branched tree, or a particularly tall tree, the tree should be pruned back to a height of 26 to 30 inches immediately after planting. Any side branches should be completely cut off so all that remains is a whip 26 to 30 inches tall. This seems drastic; however, the best-shaped Open Center trees come from those pruned initially to a whip.

First year: Prune in mid-February to early March, first removing diseased, broken and low-hanging limbs. Since we are developing an Open Center (vase-shaped) tree, next remove vigorous upright shoots that may have developed on the inside of the main scaffolds.

Do not prune trees in October, November, December and January. In the piedmont and in north Georgia, wait until mid-February to prune your trees. Pruning in late winter reduces the chance of winter injury and infection by the bacterial canker organism.

Second and third years: Second and third year pruning involves the same principles used after the first growing season. First, remove low-hanging, broken and/or diseased limbs. To maintain the open vase remove any vigorous upright shoots developing on the inside of the tree, leaving the smaller shoots for fruit production. Finally, prune the vigorous upright limbs on the scaffolds by cutting them back to an outside growing shoot.

Mature peach trees: The same principles used to develop the tree are used to annually maintain the size and shape of the mature peach tree. Removal of low-hanging, broken and dead limbs should be done first. Next, remove the vigorous upright shoots along the scaffolds. Lower the tree to the desired height by pruning the scaffolds down to an outside growing shoot at the desired height.

Pruner's note: Prune out extremely vigorous shoots developing on the inside of the tree because they shade out the center. Leave the small shoots alone. Do this in early or mid-July.

Pruning and Training Plum Trees

The day you plant your trees is the day you begin to prune and train for future production. Too often backyard growers plant fruit trees and leave them unattended for several years. This neglect results in poor growth, shading out and limb breakage. The purpose of pruning a young tree is to control the shape of the tree by development of a strong, well-balanced framework of scaffold branches.

Cultural practices such as pruning, training, fertilizing and thinning are the same as that for peaches. Plums should be trained and pruned to the open center system by selecting three or four major outside branches as scaffolds and

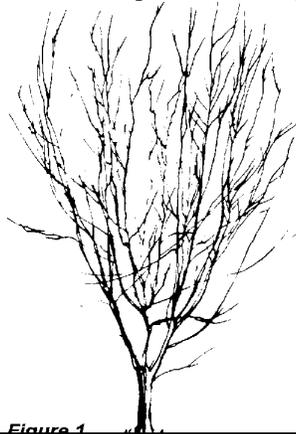


Figure 1

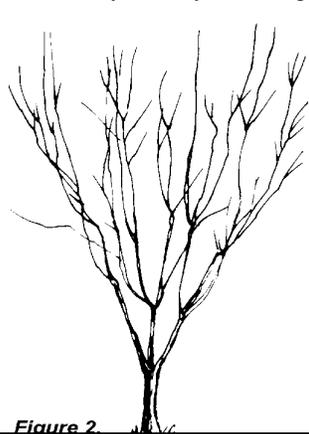


Figure 2

encouraging their further outward growth. Secondary branches are selected during the second, third and fourth seasons. The fruiting habit of plums, however, differs slightly from that of peaches.

Plums will bear fruit on last year's growth (like peaches) and spurs in older wood (like apples). Thus, a severe pruning of last year's growth on plums is not likely to affect this season's crop to the extent that it would on peaches. Overpruning, of course, causes excessive vegetative growth and reduced fruit production.

At Planting - Regardless of whether you buy an unbranched tree or a well-branched tree, it should be pruned back to a height of 26 to 30 inches immediately after planting. The side

branches, if present, should be cut off so all that remains is a whip 26 to 30 inches tall. With very large trees as well as branched trees, this seems drastic. However, the best shaped open center trees come from those pruned initially to a whip. **One Year** - Pruning consists of first removing diseased, broken or low hanging limbs. Since we are developing an open center (vase-shaped) tree, next remove upright shoots that may have developed on the inside of the main scaffolds. Finally, since the tips of the main scaffolds have turned up, prune them back to outside growing shoots.

Second and Third Years - Do second and third year pruning following the same principles that were used after the first growing season. First, remove low hanging limbs as well as those that are broken and/or diseased. To maintain the open vase, remove any vigorous upright shoots developing on the inside of the tree, leaving the smaller shoots for fruit production. Finally, prune the vigorous upright shoots on the scaffolds by cutting them back to an outside growing shoot.

Mature Plum Trees - Figure 1 illustrates a mature plum tree before pruning while Figure 2 illustrates the same tree after pruning. The same principles used to develop the tree are used annually to maintain the size and shape of the mature tree. Remove low hanging, broken and dead limbs first. Next, remove the vigorous upright shoots on the inside of the tree as well as vigorous shoots on the scaffolds. Once these steps are taken and the tree has been trimmed to the desired height, the job of pruning is complete.

Never prune plum trees in October, November, December and January. Detailed pruning should be done in mid-February with some summer pruning in August to remove vigorous shoots from the inside of the tree as well as excessively long shoots from the top.

Pruning the Bearing Grape Vine

Grapes require heavy annual pruning to maintain quality and productivity. Pruning should be done during the dormant season. Because of our mild climate, pruning should be carried out during February. Late winter or spring pruning will cause "bleeding" (flow of sap through the pruning wounds), but this should not cause alarm since it does not damage the plant.

Since bunch and hybrid grapes are somewhat more susceptible to diseases than muscadines, and produce larger fruit clusters, the vines should be pruned differently. Muscadines are trained to have a trunk, fruiting arms and spur clusters, while on bunch and hybrid grapes, healthy canes from the previous season's growth are used each year in place of permanent arms. This is done to avoid a large buildup of overwintering disease organisms in the old bark of the fruiting arm.

Most mature vines should be pruned to have between 30 and 60 buds. The more vigorous the vine, the more buds should be left. Balanced pruning, a method of pruning to balance production and vine vigor, is recommended. To balance prune, select four canes of last summer's growth, one for each direction on the two wires. [\(Figure 6\)](#) These should be selected from canes arising from the four renewal spurs. Canes about the diameter of a pencil are most desirable. Cut each of these back to leave 15 to 20 buds per cane. Gather up all of last season's canes pruned from the vine and weigh them. **Note:** Do not weigh older wood. As a rule of thumb, 30 buds should be left on the vine for the first pound of prunings removed, and 10 buds for each additional pound. Vines producing less than 3/4 pound of prunings should not be cropped. As an example, suppose a vine after pruning where 60 buds were left yielded 3 1/2 pounds of prunings. Then the number of buds to be left would be about 55 (30 for the first pound and 25 for the other 2 1/2 pounds). Each of the four canes left should be pruned back to have about 14 buds each. If balanced pruning is not to be done, then 30 to 60 buds should be left; the greater number being left on the most vigorous vines.

Leave renewal spurs to form canes for next year. These spurs are also canes of last season's growth pruned back to leave only two buds each. From these spurs will grow the fruiting canes for next year. Renewal spurs should be located as near the trunk(s) as possible. Figure 6 shows how the vines should look after pruning.

Pruning and Training Apple Trees

The day you plant your trees is the day you begin to prune and train for the future production. Too often backyard growers plant apple trees and leave them untended for several years. This neglect causes poor growth and delayed fruiting.

The purpose of pruning a young tree is to control its shape by developing a strong, well-balanced framework of scaffold branches. Remove unwanted branches or cut them back early to avoid the necessity of large cuts in later years. Today, the recommended method of pruning and training is the Central Leader System.

Prune in late winter. Winter pruning of apple trees consists of removing undesirable limbs as well as tipping terminals to encourage branching. Similar pruning can be performed in the summer and is most beneficial if done in early June and early August.

At Planting: Whether you obtain a small unbranched whip or a larger branched tree, it is necessary to prune the tree at planting. Head the unbranched whip back to 24 to 30 inches from the ground (**Figure 1**). This will cause the buds just below the cut to grow and form scaffold branches. If branched 1- or 2-year-old trees are planted, then select four or five lateral branches with wide-angled crotches and that are spaced equidistant around the tree and 2 to 5 inches apart vertically. The selected laterals should be no lower than 18 inches above the ground, and they should be pruned back slightly by cutting off one-fourth of each limb's length.



1

First Growing Season: When 2 to 3 inches of growth has occurred, begin training the tree. Position wooden spring-type clothes pins between the main branch and the new succulent growth (**Figure 2**). The clothes pin will force the new growth outward and upward thus forming the strong crotch angles needed to support the fruit load in years to come.



2

One Year Old: A number of branches should have developed after the first growing season, and if they were clothespinned, they should have good, wide crotch angles. The objective now is to develop a strong central leader and framework of scaffold branches. Here we can see the 1-year-old tree before (**Figure 3**) and after (**Figure 4**) pruning. Note that



3



4

we have left only four scaffold branches spaced around the tree. All the branches left as well as the central leader have been pruned back by about one-fourth. Always make sure the ends of the scaffold branches are below the end of the central leader after they have been pruned back.

Second Growing Season: During the second growing season, develop a second layer of scaffolds on the central leader 24 to 30 inches above the scaffolds you established the year before. Be sure to use the clothespins on new succulent growth, particularly shoots that develop below the

central leader pruning cut, so you will develop wide crotch angles.



5



6

Figure 5 illustrates a properly trained apple tree in late May of the second growing season **Two Years Old:** The use of limb spreaders can help bring about earlier fruit production, improved tree shape and strong crotch angles. Spreaders can either be short pieces of wood with sharpened nails driven into each end, or sharpened metal rods. Limbs should be spread to a 45 to 60 degree angle but not below a 60 degree angle from the main trunk. Limbs spread wider than 60 have a tendency to produce vigorous suckers along the top-side of the branch

and may stop terminal shoot growth. The spreaders will need to remain in place for up to one year until the wood 'stiffens up.' **Figure 6** illustrates a 2-year-old tree after pruning in which metal rods have been used as spreaders. Pruning consists of entirely removing undesirable limbs and, only where necessary, reducing the length of terminal scaffolds by one-fourth. Weaker side limbs should not be pruned unless excessively long, so they can develop flower buds. Excessive and unnecessary pruning will invigorate a tree and delay fruit production.

Figure 7 is a tree approximately 4 years old. Proper training, spreading and pruning have resulted in the development of flower buds that will produce a good crop in the coming season.

Notice that the upper (2nd) set of scaffolds should be shorter than lower (1st) set. The second and any succeeding scaffold layers should always be kept shorter by dormant pruning than the layer below it. A properly trained and pruned central leader tree should conform to roughly a pyramidal (Christmas tree) shape.



7

Pruning Neglected Apple Trees: Many people will purchase a house where an apple tree was planted on the property several years ago. Often, the previous owner did not take the time to properly prune the tree and the result is similar to **Figure 8**. The tree has become bushy and weak and will produce very poor quality apples. Such a tree requires extensive corrective pruning.

The main objective in pruning such a tree is to try and open up the interior to allow good light penetration. The first step is to remove all the upright, vigorous growing shoots at their base that are shading the interior. As with the young apple trees, it is necessary to select three to five lower scaffold branches with good crotch angles and spaced around the tree. Limbs with poor angles and excess scaffold limbs should be removed at their base. In some cases it is advisable to spread the corrective pruning over two to three seasons. When severe pruning is done in the winter, do not fertilize the trees that spring.

Figure 9 is the same tree after the first season's pruning. The next year, it will be necessary to remove more limbs, especially on the left side. Note that most of the cuts were thinning types; that is, the wood was removed to its base or point of origin. When making these thinning cuts, make sure the cuts are made flush along another limb.

The remaining limbs can be pruned back by one-fourth of their length to a side limb if it is desired to stiffen them. If you don't cut them back, the limbs may bend and/or break under a heavy crop load.



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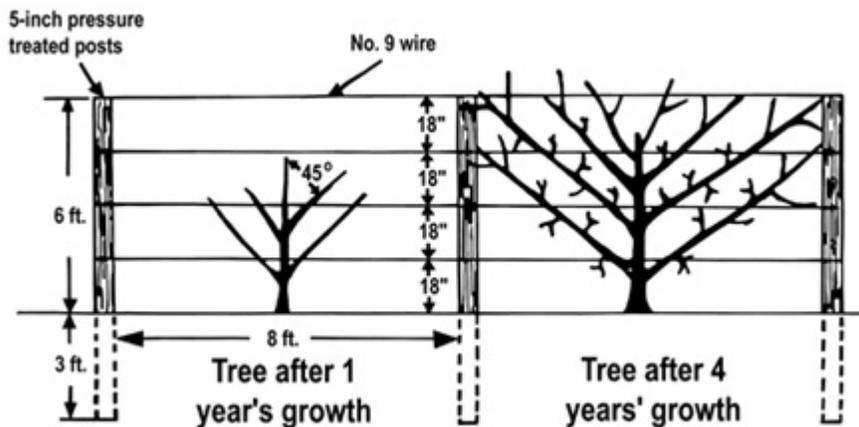
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Pruning and Training to the Trellis: Non-spur varieties on M 9 and M 26 and spur varieties on M 7 are the best to train to a trellis. To train trees to a trellis, start by planting the trees midway between the posts (**Figure 10**). Remember to keep the graft union above the ground. Cut the trees off at 24 inches high and loosely tie them to the bottom trellis wire. Allow young shoots to develop in spring and early summer.

Some shoots will develop outside the plane of the trellis (project away from the wire). Remove them, or bend and tie them to the wire so they fit the plane.

After the first growing season, tie the developed limbs to the wire so each will form an angle of 45 degrees with the main trunk (Figure 10). Avoid training limbs horizontally or flat along the wire as vigorous upright sprouts will develop along the upper surface of the limb at the expense of flower buds.

Remove undesirable limbs. Prune back the terminals of the tied limbs as well as the central trunk.



Pruning after the second growing season should be done similarly to the first season. Your goal is to fill the trellis area with limbs the first two or three years following planting to encourage tree growth. Once fruiting begins, the amount of necessary pruning will be reduced. Periodically, limbs get old and production decreases. If a limb starts declining, prune it out and train a new one to take its place. Girdling may result where the limbs and trunk are tied to the wires. Check these ties periodically to make sure they are still loose.

10

Pruning and Training Trailing Brambles (Blackberries, raspberries)

An understanding of the fruiting habit of brambles is necessary before they can be properly pruned and trained. These plants produce biennial canes, which grow one season (primocane), and flower, fruit and die the second season (floricanes). New canes are produced each season, so fruiting canes are present annually after the year of planting.

First Year: Little pruning is necessary for brambles the year they are planted. Place a mulch of pine straw, hay, newspaper or plastic on the ground around the plants.

Second Year: After the fruiting season, remove the old canes that are in the process of dying. Tie the new canes of trailing blackberries (information for Dormanred raspberries is in the next paragraph) to the trellis and tip them six inches above the top wire to encourage branching. During the following winter, train canes in a fan pattern away from the crown and place ties where canes cross each trellis wire. Lateral shoots may be shortened to lengths of 10 to 20 inches if necessary. In the second year, plants should have a total cane length of 20 to 50 feet with larger vigorous plants retaining more wood. As the plants age, more canes can be left. Exceptionally vigorous plants may be able to support up to 100 feet of canes. Plants with low vigor should be pruned to retain fewer canes.

For Dormanred raspberries, let the canes lie on top of the mulch until late February, then tie them to the trellis. This will reduce winter damage to the canes. After the first fruiting season (second year of establishment), the canes that fruited will die. Prune out the dead canes. Confine the new canes (those that will produce fruit the next season) to the ground under the trellis so that you do not run over them with a mower. In the late winter, train the new canes to the wires. Because some of these new canes to be trellised may be 15 or more feet long, estimate the length of individual canes needed to fit on the trellis. While the canes are still on the ground, cut them to this estimated length, lift them off the ground and tie them to the trellis.

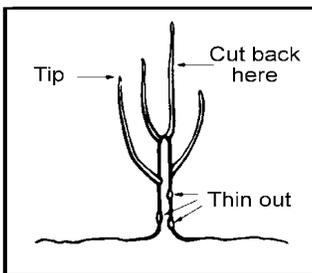
Pruning Erect Blackberries

The year of planting, canes produced by the plants will be semi-erect. Contain these semi-erect canes to the row area and do not prune them. They will provide some fruit the following year. New canes produced the second and succeeding seasons will be erect. They should be cut to a height of 40 to 42 inches in early summer to encourage lateral shoot development. This practice reduces excessive height of the canes and increases the stability of the hedge. Several prunings may be necessary. During the dormant season, the dead canes that provided fruit the previous summer should be pruned out. While winter pruning, it is a good idea to shorten any long, lateral branches. Reduce these by one-third to one-half of the length of the branch.

Pruning Blueberries

At Planting Prune plant back 1/3 to 2 at planting. Remove low twiggly growth entirely and tip remaining shoots to remove all the flower buds

After establishment, rabbiteye blueberries require little pruning until they reach about 6 to 8 feet in height. At this point, a cane renewal pruning program should be started. Remove one to three of the largest canes each winter at 0 to 24 inches from ground level or a total of about 20 percent of the canopy (Figure 2). In areas where stem borers are a problem, make the pruning cuts at 24 inches. Over a period of five years the bush will be totally renewed. New, more productive canes will sprout from the old canes and will sprout below ground level. In addition, excessively tall canes can be pruned back to 6 to 8 feet each winter.



"Primocane" Raspberries
The best part of growing primocane raspberries is the ease of pruning. In the winter, cut all canes off at the groundline. Primocane varieties can be treated exclusively as a fall fruiting variety when all of the canes are removed each winter. Commercial producers mow the canes at the groundline with a sickle bar mower and rake the old canes out for burning.

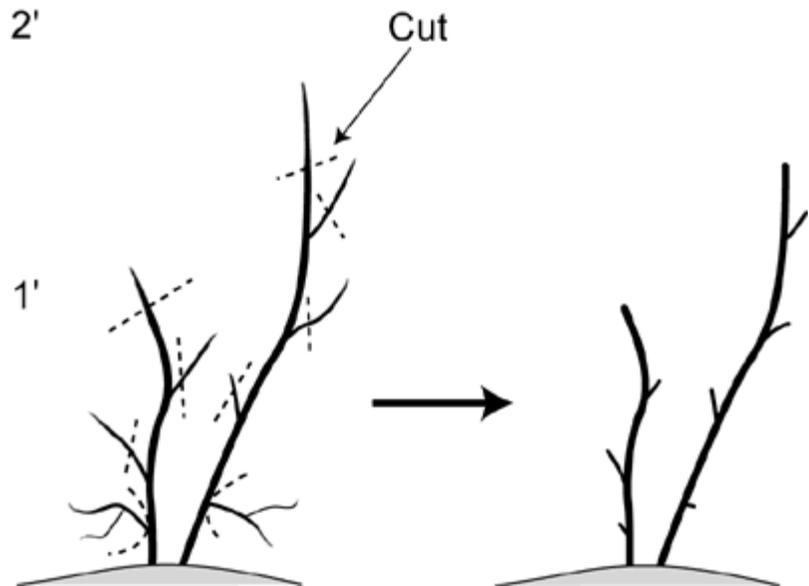


Figure 1: Pruning at planting. Remove low, twiggly growth entirely and tip remaining shoots to remove all the flower buds. About 1/2 to 1/3 of the plant top should be removed in this process. Mulch 4 inches deep with pine needles or pine bark after planting.

Training and Pruning Figs

Although fig plants can be trained to either tree or bush form, the tree form is not practical for the Piedmont area of Georgia. In this region, fig plants are frequently frozen back to the ground, making the tree form difficult to maintain. Bush form is generally recommended for other areas of the state as well. In the bush form, more of the fruit will be closer to ground level and easier to pick.

Begin training to bush form at the time of planting by cutting off one-third of the young plant. This forces shoots to grow from the base of the plant. Let these shoots grow through the first season. Then, late during the winter after the first growing season, select three to eight vigorous, widely spaced shoots to serve as leaders. Remove all other shoots. Be sure the leaders you select are far enough apart to grow to 3 to 4 inches in diameter without crowding each other. If they are too close together, the leaders cannot grow thick enough to support themselves and their crop, and they tend to fall over or split off under stress of high winds. If this happens, remove the damaged leader and select a new one late the next winter by choosing one of the many suckers that arise annually.

If more branching is desired, head back the bush each spring beginning the second year after planting, after danger of frost is past but before growth has started. Do this by removing about one-third to one-half the length of the last year's growth. Also, prune all dead wood and remove branches that interfere with the leaders' growth. Cut off low-growing lateral branches and all sucker growth that is not needed to replace broken leaders.

Do not leave bare, unproductive stubs when you prune. These stubs are entry points for wood decay organisms. Make all pruning cuts back to a bud or branch.

Pruning Pears

Because pears have a tendency to grow upright with very narrow crotch angles, early training and pruning are necessary to develop a strong tree. Four to six foot unbranched whips on calleryana rootstocks are most desirable. Plant them 20 feet apart. If planting is delayed, heel them in by completely covering the roots with soil. The heel soil should be packed to eliminate air pockets. Never allow the roots to dry out. If the roots are dry when you receive the trees, soak the entire tree in water for several hours.

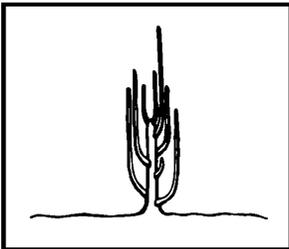
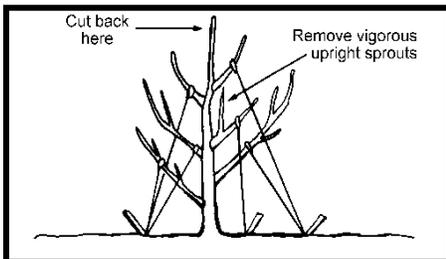


Figure 1. Click on thumbnail for full-size graphic.

At planting, prune the trees back to single whips 24 to 30 inches from the groundline. After a single growing season, your tree should look similar to the tree in Figure 1. Prune off any limbs that are less than 18 inches from the ground, leaving four to six limbs to be the scaffolds (main fruiting limbs on a mature tree). Figure 2 illustrates what Figure 1 should look like after pruning.

Figure 2. Click on thumbnail for full-size graphic.

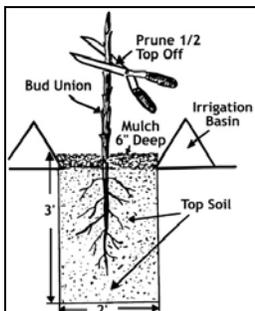
After the second season, the lower scaffolds should be tied down to a 45-degree angle to



help open up the tree to light. Prune out crossing, broken and/or diseased limbs and also vigorous upright (vertical) sprouts that may develop along the limb.

Figure 3. A 2-year-old tree properly trained with strings on scaffold limbs in the dormant season. Train limbs to a 45-degree angle. (Click on thumbnail for full-size graphic.)

Pruner's Note: Pear trees are extremely susceptible to fire blight, a disease that kills limbs and sometimes whole trees. Diseased branches should be removed as soon as they appear. When pruning out a diseased limb, cut at least six inches below the area where any infection appears. After **each** cut, dip the cutting surfaces of your pruners in rubbing alcohol or a 1:9 chlorine bleach: water mixture. Burn the diseased prunings or have the garbage collector haul them off.



Pruning Pecans

Remove one-half of the top of the new tree to balance the top with the root system. This is essential for good survival.

Established trees need no pruning except for damage pruning.

Compiled from UGA Horticulture publications:

Home Garden Apples -- C 740 Home Garden Raspberries and Blackberries -- C 766

Home Garden Blueberries---L 106 Home Garden Bunch Grapes -- B 804

Home Garden Figs -- L 163 Home Garden Pears-- C 742

Home Garden Pecans -- C 744 Home Garden Persimmons -- C 784

Home Garden Plums -- C 743 Home Garden Strawberries -- L 329

Minor Fruits and Nuts in Georgia—B 992

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