

# Training and pruning commercial peach orchards

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When you follow one of the several successful ways to train peach trees, you'll produce structurally strong trees that can carry heavy crops without breakage. Following one of these training methods is essential.

Limb breakage and loss of lower fruiting wood is a common problem in poorly trained peach trees because of their relatively weak wood. Because well-trained trees have good internal light distribution, they'll bear high-quality fruit reasonably close to the ground.

## Training young trees

There are a number of ways to train peach trees — central leader, two leader (as in V- or Y-shaped trees), or espalier.

The central-leader system is used for very high density plantings such as the fruiting wall or thin hedgerows.

The two-leader system, in which leaders extend down the rows rather than into the aisles, is also used in high-density plantings or with palmettes.

The Tatura trellis system uses two-leadered trees with the leaders extending into the aisles. It's another high-density system.

All pruning cuts can be classified as either *heading* or *thinning*. Heading cuts are those made into the previous year's wood. Thinning cuts remove all of a shoot or branch *at a branch point*. You can distinguish last year's wood because it is smoother and redder than older wood. There is a ring of bud scale scars at the base of last year's wood.

The vase system, with only three main leaders, is well suited to development of a low, spreading tree that's easy to thin and pick. To train to the vase system, head the tree at planting time about 18 inches above the ground. If you want a very short tree, head it at 6 inches.

If you anticipate thinning the fruit with a trunk shaker, or if you plan on cultivating close to the tree instead of using herbicides, head at 30 inches. Cut all side shoots back to stubs 2 to 3 inches long.

This severe pruning at planting time is needed primarily to establish scaffold limbs close to the ground, but it also compensates for loss of roots during transplanting.

An alternative method with really large, well-grown nursery stock is to select three well-spaced shoots for the main scaffolds at planting time. Remove all other side shoots entirely. If your trees will be under daily trickle irrigation from the time of planting, you may leave more wood on the tree at the time of planting than if they will not be irrigated or irrigated only occasionally.

Selecting shoots to form scaffold limbs during the first summer will help to obtain a large tree sooner than dormant training. Select three shoots arranged around the trunk and spaced vertically, 6 to 8 inches apart. These need not be growing vigorously at the time you select them.

Pinch out only the terminals, several times, of all shoots that you will not use

as scaffolds. Be sure to control peach twig borers, or summer pruning will be wasted. Remove all shoots below 18 inches during the first summer or in the first dormant season.

Alternatively, select your scaffold limbs in the first dormant season. In either case, be sure to use only shoots that form a wide angle with the trunk. Narrow-angled crotches break easily under a crop load.

Trees with more than three scaffolds are internally crowded and structurally weak. One of the scaffolds usually becomes weaker than the rest and eventually dies out. You'll need plenty of room between scaffold limbs for fruiting wood, but you can't accomplish this with more than three main scaffolds.

When there are only two scaffolds, develop a third one from a vigorous shoot. Be sure there is enough vertical space between the limbs to accommodate growth in diameter without limbs' pressing on each other.

If the shoots that develop into scaffold limbs are evenly arranged around the trunk but originate at the same height, the tree will be structurally weak. Insufficient vertical distance between the origins of major scaffold limbs is the most common weakness of vase systems of training.

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It's better to continue selection of scaffold limbs into the second year than to choose poorly placed ones. Select shoots that are moderately upright, not horizontal. Try to locate the strongest shoot into the prevailing wind.

If the tree grew very strongly in the first summer, it may be possible to select secondary scaffold limbs in the first dormant pruning. Retain as much of the tree as possible, including the small secondary shoots on the scaffold branches. Remove limbs with branches of equal size and narrow crotches.

As shown in Figure 1, the peach tree requires relatively heavy pruning in the first four dormant seasons in order to develop a strong scaffold limb structure. Prune only enough to develop good tree structure and to space fruiting wood in the light. Pruning more than is necessary will delay the onset of cropping. Remove low and horizontal shoots.

Develop fairly upright main scaffold limbs, at least within 2 to 3 feet of the trunk. If they spread at too low a point, they won't be strong enough to support the crop.

To develop strong secondary scaffolds within 1.5 to 2.5 feet of the trunk, head the primary scaffold limbs 2 to 2.5 feet from the crotch. Select two secondary scaffolds—no more. Leave the topmost scaffold longest to maintain its vigor.

In the second dormant pruning, head the secondary scaffold limbs 2 to 3 feet above their crotch, thin out the shoots, and remove most low shoots.

In high-density plantings, trees that you'll grow as central leaders need not be headed at all after planting, provided there will be sufficient irrigation to support the tops while the roots develop. Remove all side limbs entirely, to compensate for roots lost during transplanting.

The main problem with the central-leader system for peaches is the tendency of the upper limbs to overgrow and weaken the lower ones. If you wish to maintain a central leader, you must prune hard enough in the tops that this does not happen.

Sometimes, nursery trees do not have enough good buds close to the ground that they can be planted and not

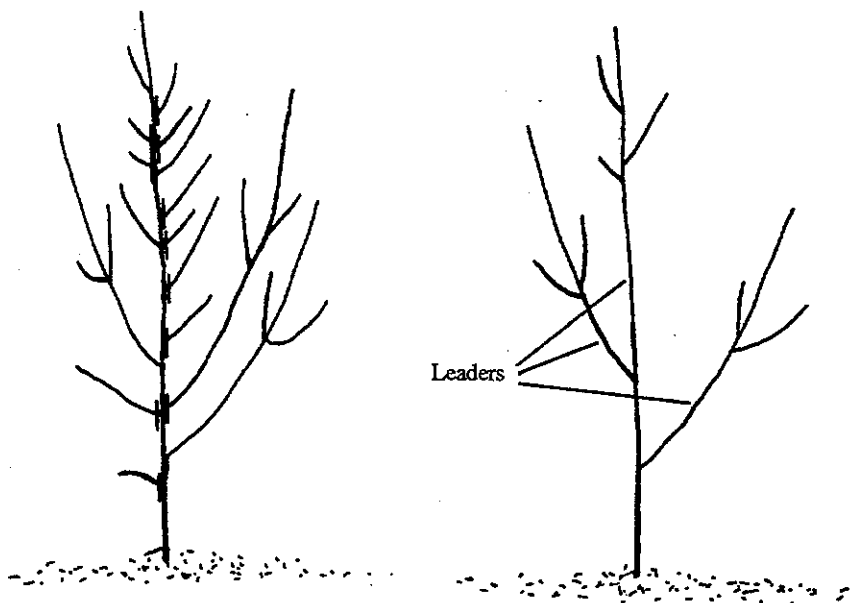


Figure 1a.—For the first dormant pruning, select three well-spaced leaders. (Here and in Figures 1b and 1c, “before” is on the left and “after” is on the right.)

headed. In this case, head the trees about 1 foot above ground and allow only one shoot to regenerate the tree.

To develop trees with two leaders in specific positions, you'll need some kind of training wire or trellis down the row. Head the trees very low, and train the two leaders in the desired directions while they're still limber enough to bend without strain or risk of breakage at the crotch. Usually, this is during the first growing season.

## Pruning bearing trees

The tree may be permitted to bear a small crop in the third summer. After the fourth dormant season, there should be enough fruiting wood on the older portions of the scaffold limbs to produce 30 to 50 pounds of peaches.

You can prune a peach tree at any time of the year, usually without any serious adverse effect. An exception might be pruning in late autumn, which makes the just-pruned trees more vulnerable to damage in an early freeze. Overall pruning in midsummer would reduce not only the yield for the current crop, but also the number of flower buds for the coming year.

Pruning at full bloom or at petal fall will hasten fruit maturity, but it may

reduce yield more than dormant-season pruning. Topping or side hedging a few weeks before harvest may increase fruit color, but it will decrease fruit size. Topping after harvest will help to maintain vigor of lower fruiting wood.

Summer pruning for control of tree size is often a requirement in high-density plantings. Pruning wounds made during the rainy season are much more likely to be invaded by disease organisms than those made during the dry season. If you are experiencing difficulty in controlling canker diseases, pruning in late summer may help.

You can increase the spread of the tree by cutting secondary and tertiary scaffold limbs back to outward-headed side shoots. Be careful with this “bench cutting” because it can lead to a very weak limb if the angle of the leading side shoots is wide.

If you cut too close to the branch point, leaving an outward-pointed shoot, the weight of the fruit may split the wood at the cut. Cutting a node higher can avoid breakage.

When thinning out limbs, do not cut them so close to the side limb that the wound is larger than it would be if you cut about 0.5 inch away from the side limb. Leaving the “branch collar” by cutting a short distance out from

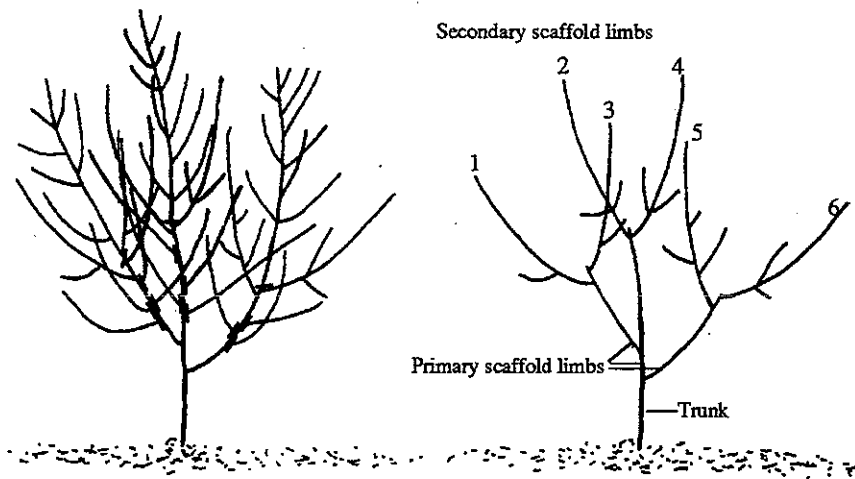


Figure 1b.—For the second dormant pruning, select about six secondary scaffold limbs.

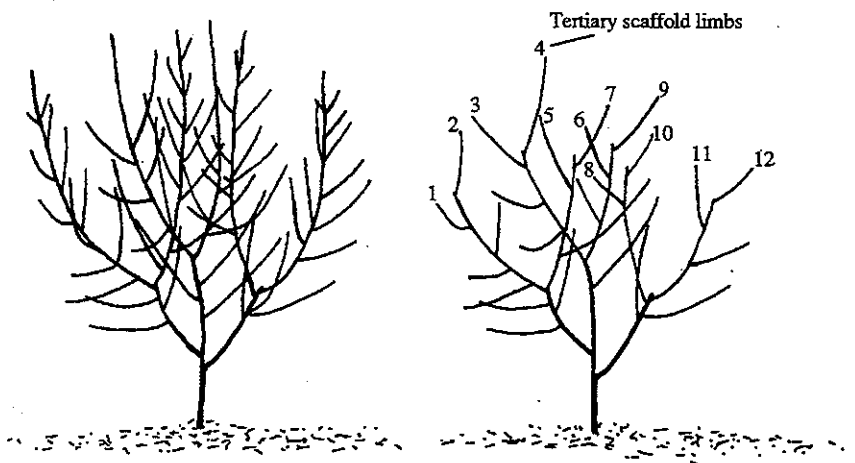


Figure 1c.—For the third dormant pruning, select about 12 tertiary scaffold limbs.

the side limb will allow the tree to employ its natural defenses against fungi that are prone to invade the wound.

If you try to spread the trees to fill a 20-foot space, you will need to provide some kind of artificial limb support. A common support system uses a strap or rope around the outer periphery of the secondary scaffold limbs. Limb props and center wiring have also been used. Recently, most growers have planted the trees closer together and spread the limbs less.

The maximum height of peach trees after pruning need not be more than 10 or 12 feet. Some growers prune to only 6 or 8 feet. Provided there is enough space between limbs for light to reach the lower shoots, the taller trees will be more productive. Of course, the labor required for their maintenance will also be higher.

You can maintain the desired height with a topping saw or mower, but you should consider topping only as a starting place for pruning. Much more hand work must be done after topping to space limbs far enough apart to allow light penetration down into the tree.

There is a tendency for topped trees to produce all of their new, most vigorous fruiting wood in the tops. When these are removed in the winter topping, they

leave only weak fruiting wood. Spacing branches far enough apart can avoid this problem.

Peach and nectarine trees differ from most other kinds of fruit trees because they bear fruit only on shoots that grew the previous season, as shown in Figure 2, and never on spurs. Because of this, it is necessary to keep the trees in a high state of vigor through adequate pruning and with nitrogen fertilizer, so that plenty of new wood is formed each year.

On the other hand, it is easy to overstimulate the trees with heavy pruning, large doses of nitrogen, and frequent irrigation. Moderate vigor, with most new shoots averaging about 1.5 feet in length, generally gives the best yields and fruit quality.

You can remove broken, diseased, or dead branches while you're pruning for other objectives.

In the bearing peach tree, the weight of fruit and the tendency of the tree to grow toward light lead to an upward and outward migration of the fruiting wood. Unless you counteract this trend by pruning, the tree will develop only a thin layer of fruiting wood in the upper, outer portions. Prune harder in those upper, outer portions than on the lower, inner parts. This will help to maintain shoots on heavier structural wood, which can best support it (see Figure 3 on page 4).

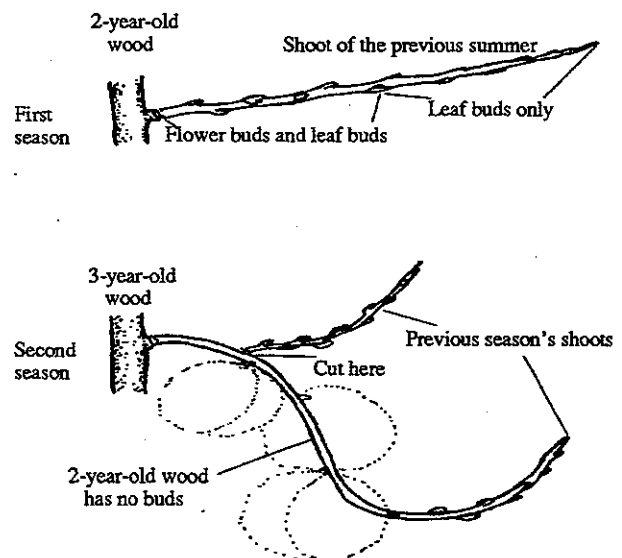


Figure 2.—The peach tree fruits only on last season's wood.

Peach trees have luxurious foliage that easily shades out shoots below, resulting in their death. As you prune, keep in mind the need for light to penetrate to the center of the tree. In trees trained to the vase system, remove all shoots that are growing toward the center of the tree or that are upright in the center. Leave moderately vigorous shoots well spaced along the scaffold limbs.

Remove most 2-year-old wood back to the scaffold limb structure so that the majority of the fruiting wood, formed the previous summer, comes from the scaffold structure.

Thin out the shoots formed the previous year, in most cases removing entirely at least half of them. Shoots of pencil thickness or a little greater are preferable to thin, spindly ones because the buds of thicker shoots are more likely to produce large fruit. In climates where fruit thinning is usually needed, heading the remaining shoots to about 8 inches will reduce thinning costs. Because inadequate fruit set is a common problem in rainy spring weather, growers west of the Cascades usually leave many shoots unheaded so that there will be more flowers.

The longer shoots may be headed back to about a foot, but this leaves a larger number of shoots than is the case where a good fruit set is more likely. Replace outward, downward-hanging wood with more upright wood as the scaffold limbs spread. Remove shoots that grow vertically or toward the center of the tree. Remove all dead, diseased, or broken wood as you prune.

Don't allow the tree to branch beyond the level of tertiary scaffolds.

The first branching should be about 2 feet from the trunk, or 3 to 4 feet above ground, and the second branching at 5 or 6 feet. This would allow 12 tertiary scaffold limbs in a tree with

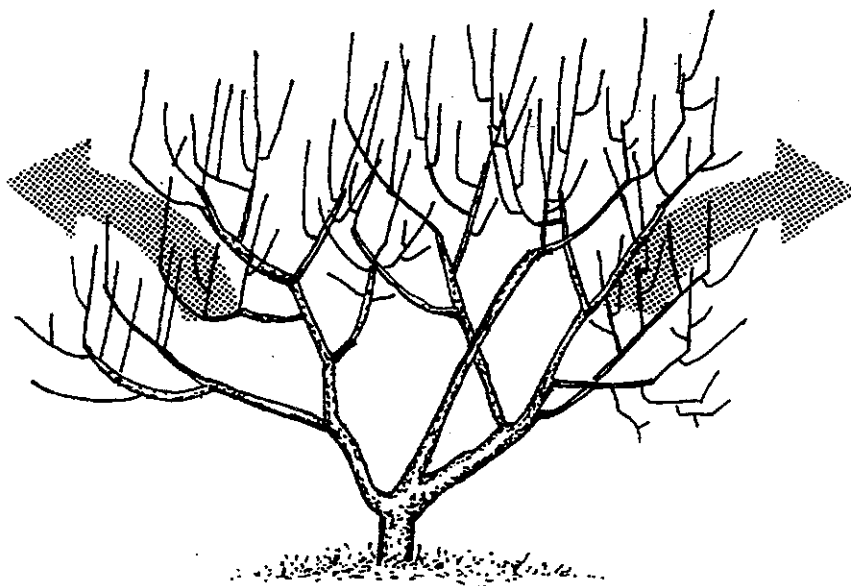


Figure 3.—Bearing peach trees tend to grow upward toward the light and to bend outward under the weight of crops. Prune hardest in the upper, outward portions of the tree to control height and spread.

three main scaffolds. When there are too many limbs in the top, all of the fruiting wood moves to the top of the tree. This limits production, leads to breakage, and makes the fruit harder to pick.

## Summary

Develop only a small number of primary, secondary, and tertiary scaffold limbs so that they will be strong enough to hold heavy crops and far enough apart to allow adequate light penetration.

Train the tree in summer and dormant season by pinching unwanted shoots. To increase early production, leave as much wood as you can, consistent with developing a good tree structure.

Prune bearing trees hardest in the upper parts, removing almost all of the wood that has fruited and leaving well-spaced shoots 1 to 2 feet long.

Remove about 50 percent of last year's shoots entirely, and head the

remaining lightly or severely, depending on the number of good flower buds and anticipated fruit set. Mechanical topping and hedging are useful in reducing the time for pruning, but thinning out by hand is a necessary follow-up. Don't top so severely that there isn't enough good fruiting wood below.

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## Use pesticides safely!

- **Wear protective clothing and safety devices** as recommended on the label. **Bathe or shower** after each use. **Read the pesticide label**—even if you've used the pesticide before.
  - **Follow closely the instructions on the label** (and any other directions you have).
  - **Be cautious** when you apply pesticides. Know your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from pesticide use.
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