

## Basics of Pruning Fruit Trees

Fruit trees require pruning to be strong and productive. Some fruit trees, such as peaches, require extensive pruning each year while others, such as pears, may need very little. Gardeners may be reluctant to prune without understanding basic principles and objectives. The goals of pruning are to

- Develop a strong tree structure, which is why pruning is especially important when trees are young.
- Provide for light penetration. Sunlight is required to produce fruit buds for the following year.
- Control tree size. Smaller trees are easier to thin, harvest, and prune. Smaller tree size allows for easier, more effective pest control.
- Remove damaged wood. High winds, ice storms, heavy fruit loads, diseases, and insects can damage fruit trees. Pruning speeds recovery and prevents further damage.

## Pruning Tools

Gardeners should assemble the proper tools before pruning. The basic tools every fruit gardener needs are shown in figure 1.

**A. Pruning shears** for making small cuts. Scissor-type shears cause less wood damage than anvil-type shears.

**B. Loppers** are similar to hand shears but have longer handles and will cut larger limbs. Loppers can prune wood up to 1 inch in diameter depending on their size.

**C. Pruning saws** are used to cut wood larger than 1 inch in diameter or branches that cannot be reached with loppers. Some pruning saws can be folded down for storage.

**Pole pruner** (not shown) enables removal of high limbs by a user on the ground.

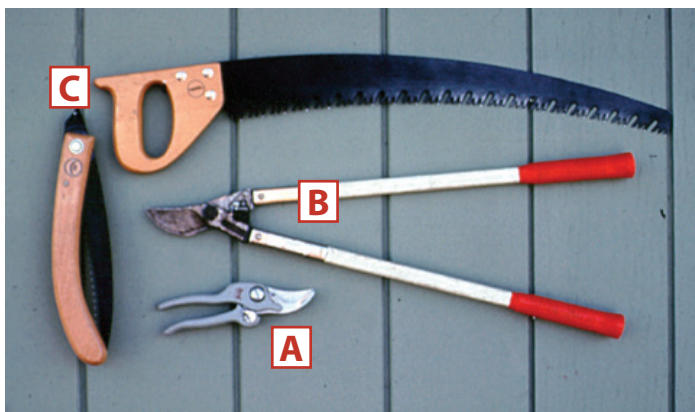


Figure 1. Pruning tools should be sharp and well-maintained.

## When to Prune

The best time to prune is late winter or early spring just before active growth begins, normally March in much of Kansas. In southern Kansas trees may need to be pruned earlier, from Valentine's Day through early March. Trees should be pruned in early summer to remove water sprouts and suckers. Water sprouts are shoots that grow straight up from a larger branch or the trunk (Figure 2). Suckers arise from the base of the trunk or the roots (Figure 3).

## Types of Pruning Cuts

The three basic pruning cuts are the thinning cut, bench cut, and heading cut. A thinning cut removes a shoot or branch back to where it originates (Figure 4). A bench cut prunes a vigorous upright shoot back to a more horizontal side branch (Figure 5). Thinning and bench cuts open up the tree to improve light penetration and allow air to move through the canopy. A heading cut removes part of branch back to a bud and encourages side branch



Figure 2. Water sprouts growing on an apple tree.



Figure 3. A sucker growing from the base of a fruit tree.



Figure 4. Thinning cut.



Figure 6. Heading cut.



Figure 5. Bench cut.

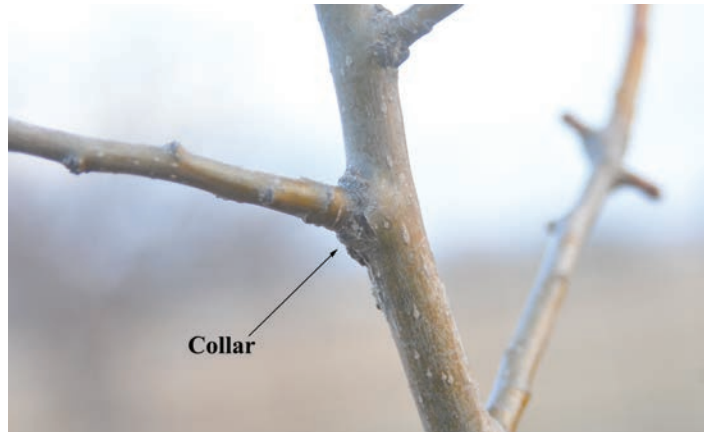


Figure 7. Collar.

growth (Figure 6). Nearly all cuts should be thinning or bench cuts. Heading cuts are performed on young trees to encourage the main, or scaffold, branches to form so they can be selected. Scaffold branches provide the framework to support the weight of the fruit.

### Making Thinning Cuts

Thinning cuts should be made at the collar and not flush with the branch (Figure 7), which results in a smaller wound that heals more quickly. Do not leave a stub as it can rot, leaving an opening for insects and diseases to enter. When making larger cuts use a three-step process to prevent bark from tearing (Figure 8). First, cut about a third of the way through the branch from the bottom

starting about 6 to 12 inches from where it attaches. Then cut down from the top to meet the first cut so the branch drops away. Finish by removing the remaining stub at the collar region.

### Planting Time Pruning

A tree that already has side branches needs little pruning at planting time except to remove damaged branches or to remove rubbing branches. If a tree is a whip, meaning it does not have side branches, prune to 36 inches tall (Figure 9). This is the heading cut mentioned earlier, which should be made just above a bud to encourage side branches to form.

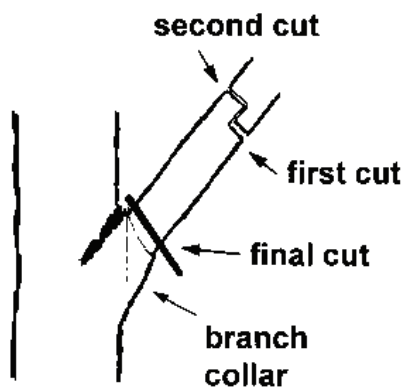


Figure 8. Make three cuts to remove large limbs.

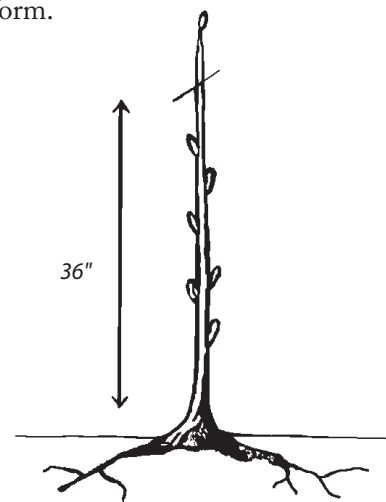


Figure 9. Pruning cuts during the first year.

Peaches, nectarines, and plums are trained to an open-center framework as shown in Figures 10 and 11 below. Recommended pruning practices for cherries, apricots, and other species are noted separately.

### Second-Year Peaches, Nectarines, and Plums

The year after planting, select two or three scaffold branches to form the framework of the tree (Figure 10). The first branch should be at least 20 to 24 inches above the ground and the rest at least 6 inches apart on the trunk and attached at about a 45-degree angle. Remove all other branches to encourage growth of those that are kept.

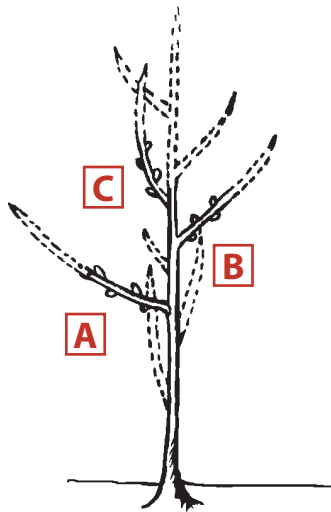


Figure 10. Open center peach tree pruned to three scaffold branches, A, B and C. Dotted lines show branches to be removed.

### Third-Year Peaches, Nectarines, and Plums

The following year, select one or two more branches to serve as the main scaffold branches for a total of about four. If branches are not attached at the suggested 45-degree angle, use a plastic or wood spreader to separate the young limbs into a wider angle (Figure 12). The wider angle strengthens the branch attachment and encourages fruiting at a younger age.

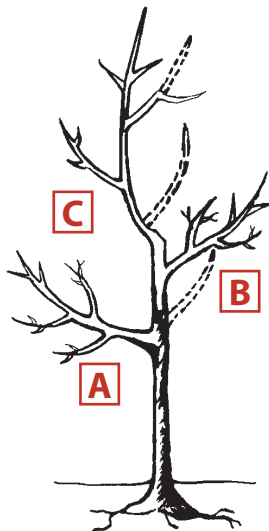


Figure 11. Pruning cuts to be made at first or second dormant pruning on three scaffold branches A, B and C.

## Pruning Older Trees

Follow this checklist when pruning, stopping when 30% of the tree has been removed at most. Do not count dead branches in the 30%. Although this rule applies to most trees, peaches and nectarines are an exception. More than 40% of the branches can be taken if desired.

1. Remove all dead, dying, or diseased branches.
2. Remove all suckers and water sprouts that were not removed during the growing season.
3. If two branches form a weak angle, remove one of the two branches.
4. If two branches rub, remove one of the two branches.
5. Reduce the length of the long branches, cutting them back to a shorter, smaller branch.
6. Remove branches growing toward the interior of the tree.
7. Thin the interior of the tree.

## Pruning Practices by Species

**Peaches and nectarines:** Peach trees only bear fruit on wood that grew the previous season and are pruned harder than other fruit trees to encourage more fruiting wood. Prune to keep branching short, height down, and prevent branches from drooping, which often means cutting a larger shoot back to a smaller one. If side branches are not kept short, heavy fruit loads can create enough leverage to break the tree apart.

**Cherry:** Cherry trees tend to have brittle wood and narrow crotches, so it is important to choose branches with wide angles or to spread limbs when trees are young. Select about three main scaffold limbs for a sour cherry. The year after planting, remove any new growth that is not on the scaffold branches. Thin shoots growing toward the interior to allow sunlight to penetrate deeper into the tree. Older trees often need little pruning.

**Plum:** Plum trees bear on 2- to 4-year-old wood. Mature trees need very little pruning except to remove



Figure 12. Limb spreader.

dead, diseased, and broken branches, or to correct other problems.

**Apricot:** Apricot trees do not need much pruning, but a light thinning helps encourage younger growth.

## Summer Pruning of Peaches, Nectarines, and Japanese Plums

Peaches, nectarines, and Japanese plums grow vigorously and benefit from summer pruning. Start by removing problem shoots or branches such as those that are dead, damaged, or diseased. If two branches cross, remove one of them. Then strengthen current growth by pinching back long, weak growth, removing about 3 inches from the end. Growth should be soft enough to remove with your thumbnail.

## Thinning Fruit

Most stone fruits should be thinned when the crop is heavy, except for cherries, which do not require thinning. Removing excess fruit promotes development of larger,

sweeter fruit. Having too many fruit increases the risk of limb damage, especially on peaches and nectarines. Thinning helps keep branches from breaking under the weight of the maturing fruit crop. The amount of thinning varies by crop with the following guidelines:

- Peaches and nectarines: 6 inches between fruits
- Apricots: 2-4 inches between fruits
- Plums: 4 inches between fruits

These numbers are averages. Having several fruit closer than this is not a problem as long as the branch average is close to the recommended spacing. Start with the removal of damaged, small, discolored, or malformed fruit, knowing that some perfectly good fruit may have to be removed. Thinning is done by cutting the fruit stem or snapping fruit off with the fingers. Start the process when fruit is about the size of a nickel. As long as basic principles are followed, how a tree is pruned is up to the individual. No two people will prune a tree in exactly the same way.

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