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# PRUNING YOUNG FRUIT TREES

COOPERATIVE EXTENSION SERVICE • MICHIGAN STATE UNIVERSITY

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Young non-bearing fruit trees are pruned to (1) give them a desired form and (2) develop a strong framework that will support the fruit in later years.

**Prune young fruit trees lightly**—Too much pruning tends to dwarf the tree and slow down fruit bearing. A tree that is pruned heavily each year will be smaller, come into bearing later, and bear smaller crops — at least for the first few years — than one that is pruned lightly.

Prune only enough to develop a strong framework of scaffold branches. After the framework is established, the trees need little pruning until they come into full bearing.

**Time to prune**—Prune in late winter or very early spring before growth starts.

**Tools you will need**—(1) A sharp pruning knife with a curved blade, (2) strong hand shears, and (3) a small fine-toothed pruning saw. You will also need long-handled loppers for fifth-year pruning. Keep tools sharp and clean.

**Making the cuts**—When removing a branch or shoot, make a parallel cut as close to the parent branch as possible. Use shears with the cutting edge next to the parent branch. Avoid bruising or tearing the bark. Use a saw to remove branches more than half an inch thick.

If two branches of about equal size and length start from the same point, head back or shorten one of them considerably more than the other so that it will become a side branch of the longer one. Take advantage of this “unequal cut” to avoid having forks and weak crotches develop.

## METHODS OF TRAINING

Young fruit trees are trained either by (1) the **modified leader** or (2) the **open-center** method.

Fruits pruned to the modified leader method are:

apples, pears, cherries, and European varieties of plums. Peaches and Japanese varieties of plums are pruned to the open-center method.

### Modified Leader Method

A well-developed modified leader tree is one with a central trunk or axis several feet long from which a number of main laterals or scaffold branches arise. These should form wide angles where they join the trunk, they should be spaced at least 6 inches apart, and none should be directly opposite or directly below another. Large 1-year-old nursery trees are best for developing this type of tree. Two-year-old nursery trees of apple, pear, plum, and sour cherry are often used.

The method used to develop a modified leader tree



FIG. 1



FIG. 2

Fig. 1. A vigorous young apple tree before pruning.

Fig. 2. Young apple tree after second pruning (first for a 2-year-old nursery tree) to the modified leader method. Two wide-angled laterals have been chosen to form the lower scaffold branches. The leader is then left longer than the lateral shoots.

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varies with different kinds of fruits. Starting with a 1-year-old nursery tree, the general procedure is as follows:

**First pruning**—At the time of planting. Head or cut back large 1-year-old unbranched trees to 3½ to 4 feet above the ground. Trees 3½ feet or less in height need no heading back. Prune well-branched 2-year-old nursery trees in the same manner as that described below for the second pruning.

**Second pruning**—In the spring, a year after planting. This is the first pruning of the 2-year-old nursery tree when planted in the orchard.

1. Save one of the most vigorous upright-growing shoots for a leader.

2. Select for permanent scaffold branches one or more, preferably two, well-placed lateral branches that form wide angles with the trunk. The lowest scaffold branch on apples should be about 30 inches from the ground. On other fruit trees, the lowest should be 20 to 24 inches above the ground. Remove all sharp-angled branches. Keep the scaffold branches 6 inches or more apart.

3. If the leader needs pruning, head it back to about 20 inches above the top scaffold. Shorten the laterals so that when you hold them upright their tips will be 6 inches lower than the tip of the leader.

**Third pruning**—Two years after planting.

1. Select the highest shoot developed from the leader the previous season to continue as the leader.

2. Save two or three lateral shoots from the leader for more scaffold branches. Head them back if need be, to keep the leader dominant.

3. During the previous season the branches saved for scaffolds will have rebranched, forming secondary shoots or laterals. On each scaffold, save two or three of these laterals that are 6 inches or more away from the leader. Remove or head back any that are longer than the leader or midrib of the main scaffold branch. Treat each scaffold as though it were a young tree.

4. Leave the several parts of the tree in balance. Do not let the lower branches outgrow the upper portions of the tree, nor the upper branches grow longer and "shade out" the lower ones.

5. Save short twigs and spurs that develop in the inside part of the tree. If these grow into vigorous shoots that tend to make the center of the tree thick and bushy, you can thin them out a year later.

**Fourth pruning**—Three years after planting. This pruning should encourage formation of more framework and keep a proper relationship among the present scaffolds. Choose two or three more scaffold

branches as described for the third pruning. Keep the leader dominant. Correct any tendencies to develop weak crotches. Save short twigs and spurs. If opposite branching occurs on the trunk or along the main branches, remove the poorer one.

**Fifth pruning**—Four years after planting. By this time, the main framework of four to six scaffolds will be set up and you will not need to encourage the further development of the leader. Do not, however, head back the leader at this time. If necessary, you can cut it back to a well-placed, outward-growing lateral 1 or 2 years later. Most varieties need no heading back and very little thinning out until after the trees are in full bearing.

## Open-Center Method

This method is used mostly for training young peach trees. It differs from the modified leader method in that you remove the central leader at planting time and choose the branches for scaffolds along a fairly short space on the trunk.

Steps in training a tree to the open-center method are as follows:

1. Head back the 1-year-old tree to 18 to 24 inches at planting time.

2. Choose two or three scaffold branches that are well arranged around the trunk and that are as near as possible to the place where the tree was headed back. If the branches are large and uniform in size, you can leave them 10 to 12 inches long. If slender and uneven in size, cut them back to short stubs with

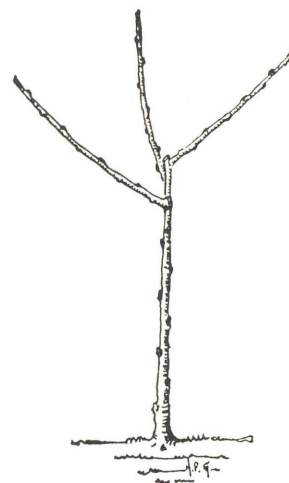


FIG. 3

**Fig. 3.** Newly-planted peach tree pruned to the three-scaffold open-center method. When three branches of sufficient vigor and uniformity cannot be found, the branches are cut back to short stubs.

one or two basal buds. Choose shoots which develop from these buds for the main scaffold branches.

3. Inspect the trees 2 or 3 weeks after planting and remove all shoots with a sharp knife except those to be saved for scaffold branches. Make another inspection and a light shoot removal 2 weeks later. Rub off all new growth from the trunk of the tree.

4. In the spring of the second year, remove any shoots other than those you have chosen to make the framework; head the three scaffolds to equal lengths so they will grow to be as near the same size as possible. Usually the trees need very little other pruning.

## PRUNING FOR DIFFERENT FRUITS

### Apples

The modified leader type of training is used. Take special care in choosing branches for the main framework of the tree. There should be at least 6 inches (8 to 10 inches is better) between the main scaffolds along and around the trunk. Do not try to save too many scaffold branches in one season. That will crowd the branches on the trunk. Branches that look well spaced on a 2- or 3-year-old tree may grow together and become crowded in later years. In general, prune by thinning out, and do as little heading back as possible.

### Pears

The modified leader method is best. Pear trees tend to form narrow-angled crotches and to grow upright more than spreading. Use outside buds and outward growing laterals whenever you can. Keep the leader dominant and the scaffold branches in balance, and try to develop strong, wide-angled crotches throughout the tree. Severe heading back to keep the trees from becoming too high is not good. Remove blossom spurs that develop along the leader or within 12 to 18 inches of the base of the main scaffolds.

### Peaches

The open-center method of training is used most. Developing the trees properly by the modified leader method takes skill and much attention. Trees trained by the two or three-scaffold open-center method, however, usually have less winter injury and live longer.

Peach trees are sometimes trained in a manner known as the side-leader method. Only the most experienced growers have had success with this method, and it is not generally recommended.

No matter how you train the trees, prune them very lightly during the second and third years. Leave any small wood in the center of the tree. By leaving it, you can harvest a fairly good crop of peaches the third growing season. Remove the small wood in the center of the tree in the fourth year.

### Sour Cherries

The modified leader tree is best. A 1-year-old nursery tree sometimes has a number of lateral branches from which to choose permanent scaffolds at planting time. If the lateral branches are not well spaced with wide angles, wait until the second year before choosing the scaffolds. Cut the laterals 6 to 8 inches and leave the leader at least 8 to 10 inches longer than the scaffolds.

During the second year choose 2 to 3 laterals for the permanent scaffolds. These will probably need some heading back and thinning out to keep them from overgrowing the leader.

In the spring of the third year, choose more scaffold branches to complete the framework of the tree. There should be four to six main branches arranged along about 3 to 4 feet of central axis or leader. Remove crowding or interfering secondary branches at this time and again suppress the scaffolds, so that the leader will remain dominant. Prune very little after the framework is well established.

### Sweet Cherries

Modified leader training is best. Sweet cherry trees usually need less pruning than other fruit trees. Give special attention to growing a strong framework of scaffold branches, since the trees tend to have weak crotches. Wide spacing of the scaffolds is important. Head back to the outward-growing laterals those long pole-like branches which often develop in trees 3 to 4 years old.

### Plums

European varieties such as Italian Prune, Stanley, Green Gage, and others are trained by the modified leader method. They need less pruning than varieties of the Japanese type. Most varieties will form good tops even though you do little pruning. Thin centers lightly to let in sunlight and to develop a healthy spur system. Head back little if at all. Heavy heading back results in long upright growths and high dense tops.

Japanese varieties such as Burbank and Abundance are trained to form an open-center tree although the modified-leader method is good for most varieties. Varieties such as Burbank make a low-spreading growth and need more corrective pruning than others, to develop and keep a well-shaped top.

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