Pruning the Home Orchard

Guide H-327

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Fruit trees are pruned to regulate growth, increase yield, improve fruit size and quality and reduce production costs. Pruning also shapes trees for convenience of culture and repairs damage. Many home gardeners prune for decorative purposes.

All pruning has a dwarfing effect and usually reduces fruit set but does not decrease yield when done properly. For maximum yield of high-quality fruit, prune only as necessary to establish trees with strong frameworks, capable of supporting heavy crops annually without damage and sufficiently open to allow penetration of sunlight, air and spray material for pest control.

Most pruning is done during the dormant season, just before active growth begins in the spring. At this time, pruning wounds heal fast, flower buds are easily recognized, and injury from low winter temperature may be avoided.

Summer pruning is done to train young trees to the desired shape, remove watersprouts and other undesirable growth and maintain smaller tree size.

Training Young Trees

In the first three to five years, permanent (scaffold) branches of a young fruit tree are developed. These scaffolds should have wide-angled crotches and be equally spaced around the tree, with 4 to 12 inches (10 to 30 cm) of vertical space between them. Prune young trees to develop these scaffold branches.

In pruning, cut as close as possible to the trunk, parent branch or lateral (fig. 1). Properly made cuts will heal more quickly, shortening the time that rot organisms have for entry. Wound dressing is not needed on cuts 1 1/2 inches (4 cm) or smaller, but larger cuts should be covered to prevent drying and entrance of insects and disease organisms. The most satisfactory sealing material is the asphaltwater emulsion type available under various trade names. Do not use material containing creosote, lead or turpentine. Plastic-base paints and household latex paints can be used, but these have no antiseptic properties.

It takes several years of proper pruning to develop a well-balanced apple tree with strong, evenly proportioned scaffold branches. After trees reach the desired size, a “mold and hold” system of pruning will maintain the size and shape for many productive years.

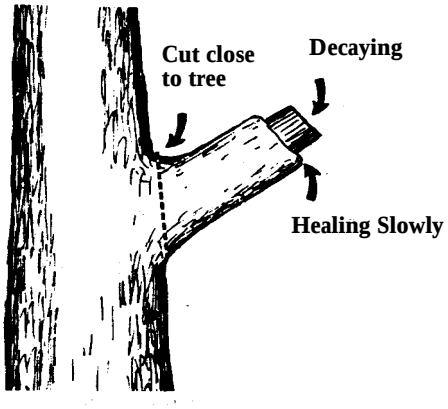

Figure 1. Cut branches to the limb or leader from which they grow or to a lateral growing from the one being cut. Avoid leaving nubs, which heal slowly and are subject to wood rots and insect infestations.

Pruning Apple Trees

Apple trees are usually trained to the modified leader system (fig. 2). Under this system, the leader, or main trunk, grows until the scaffold limbs have been established, usually by the end of the third year. Then the leader may be cut back above the topmost scaffold.

If you plant 1-year-old whips, simply head them at the desired height, about 40 inches (100 cm from the ground for trees on standard rootstock and 30 to 35 inches (76 to 91 cm) for spur-type and semidwarf trees (fig. 3). If trees are branched when they come from the nursery, the usual practice is to head the leader to the desired height, cut back about one-half the terminal growth of any wide-angle side branches

suitable for developing into scaffold limbs and remove all others.

When the topmost buds on the leader grow 4 or 5 inches (10 to 12 cm), remove all but the terminal shoot. This encourages bud growth in the lower portion of the tree, so that there is a better selection of shoots for scaffold limbs. During the first summer, you can remove the undesired shoots or let them grow throughout the season and prune them during the dormant season, as you select the scaffold branches (fig. 4).

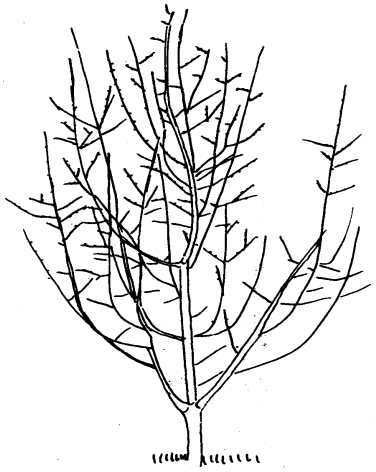

Figure 2. This young apple tree is trained to the modified central leader system and has strong, wide-angled branches evenly spaced around the trunk.

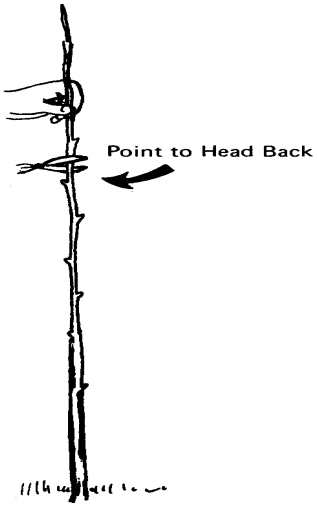

Figure 3. Head back newly planted, unbranched apple whips on standard rootstocks to about 40 inches (100 cm) above ground. If the whips are on spur-type or semidwarf rootstocks, cut them about 35 inches (91 cm) above ground.

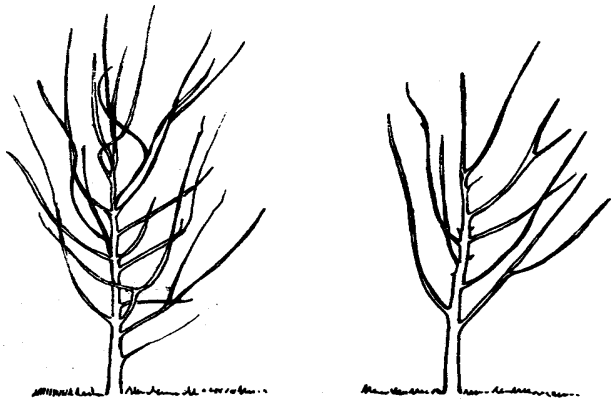

Figure 4. A vigorous apple tree, grown one year in the orchard, before pruning (left), should have ample distribution and branches from which to select scaffold limbs. After pruning (right), the principal scaffold limbs form a strong framework for later production.

The first branches developed by a young Delicious tree are often closely spaced and extremely upright, forming weak narrow-angled crotches that split easily. Secondary limbs usually have much wider angled crotches.

A well-trained, mature tree will usually have four to six scaffold limbs. They should be about 8 inches (20 cm) apart vertically, evenly distributed up and around the trunk, none directly above another and the lowest scaffold at least 16 inches (40 cm) from the ground. To be strong enough to support heavy crops of fruit, each scaffold should form an angle of about 65 degrees with the tree trunk (fig. 5).

Limb spreaders are used as aids in establishing strong scaffolds and encouraging earlier production. Spreaders are especially useful in training varieties like Red Delicious that tend to form branches with narrow angles, growing more upright than spreading.

Limb spreaders increase the crotch angle of scaffold branches. Cut 1-by-2-inch boards into varied lengths. Drive No. 8 box nails in each end, cut off the nailheads and sharpen. The sharpened nails hold the spreader in place.

Apply spreaders early, while the limb is still pliable enough to be trained in the desired position. Spreaders are usually removed after two growing seasons. After selecting tile framework of scaffold limbs, you will not need to do much pruning until the trees come into bearing. You may have to remove some branches that compete with selected scaffolds and occasionally do light corrective pruning. Remove “watersprouts.” But do not prune heavily.

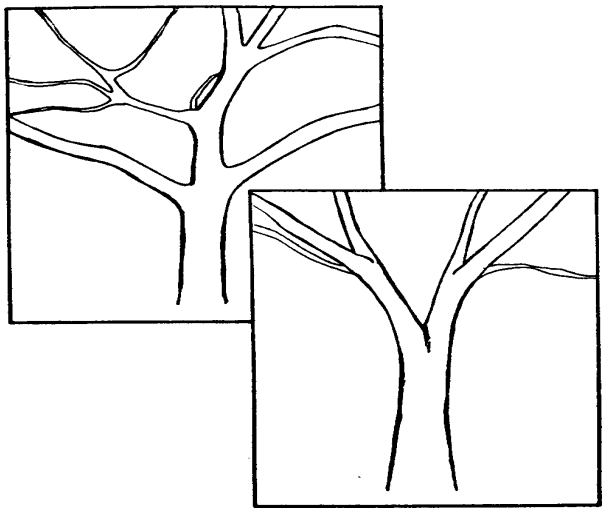

Figure 5. Scaffold branches with wide-angled crotches (left) are strong and capable of holding a heavy fruit crop. Branches with narrow-angled crotches (right) are weak, and they split off easily under fruit loads or heavy wind. Note the strong modified central leader in the left diagram.

In general, prune bearing apple trees to remove watersprouts; diseased, broken, and insect-injured branches; and weak, low-growing and shaded branches. Try to open up the top to allow sunlight to filter through the tree's center by judicious removal of higher branches. Keep the tree under 20 feet (6.3 m) tall by heading the top limbs to strong out-growing laterals.

Pruning Pear Trees

In general, pear trees are trained like apple trees. The average young pear tree tends to become tall and leggy. Tipping or heading back the long shoots slightly encourages the development of side branches.

Limb spreaders are especially useful in developing scaffolds in the young pear tree.

After you have developed the framework, do not head the branches back because pear trees tend to produce vigorous, soft terminal shoots, which are highly susceptible to fire blight. Limit pruning to thinning-out cuts.

Pruning Cherry Trees

Sweet cherry trees are trained to the modified leader system recommended for apple trees. Select scaffold limbs carefully because sweet cherry is subject to winter injury and splitting where the limbs join the trunk. Choose limbs with the widest crotch angles to ensure a strong framework.

Head newly planted trees to a height of about 40 inches (102 cm). If the trees have wide-angle lateral branches when you set them, select those suitable for scaffold limbs and head them back slightly, leaving the leader several inches longer than the laterals. Four to six main scaffold limbs, (8 inches 20 cm) or more apart vertically and evenly distributed around the trunk are desirable. The lowest scaffold limb should be not less than 16 inches (40 cm) from the ground.

After the first year, head back as little as possible. You may have to cut back the leader and upright growing scaffold limbs to strong outward-growing laterals to keep the tree low for convenience in spraying and harvesting. Pruning the mature sweet cherry is usually limited to removal of diseased and damaged branches.

A sour cherry tree, with no strong side branches at the time of planting, should be headed to about 24 inches (61 cm) above the ground. Lateral branches can be selected at the beginning of the second year's growth. If the tree has some good laterals at planting, remove any below 16 inches (40 cm) from the ground. Select about three permanent lateral or scaffold limbs along the leader. They should be 4 to 6 inches (10 to 15 cm) apart and not directly over one another. Do not head them back, as this tends to stunt terminal growth.

In the following years, select five or six scaffold branches well distributed along the trunk. The leader is then usually modified by cutting to an outward-growing lateral. After fruiting begins, pruning consists mainly of thinning out excessive and crowded growth each year to allow sunlight to filter through the tree.

Plum Trees

Plum trees are also pruned like apple trees. Prunes and other European plum types generally develop into well-shaped trees, with little pruning. At planting, head back the leader to 30 to 36 inches (76 to 91 cm). After that, pruning consists mainly of thinning out excessive growth. Japanese plums are usually more vigorous than European varieties and need some heading back as well as some thinning of branches after they come into bearing.

Pruning Peach Trees

Peach trees are usually trained to a more open center than are apple trees, although a delayed modified leader system is desirable for the high light-intensity areas of the Southwest (fig. 6). Head newly planted trees to about 40 inches (102 cm) in height, making the cut just above a lateral branch or bud. If the tree is branched when it comes from the nursery, select three or four branches well-spaced up and around the trunk for the permanent scaffold limbs. The lowest limb should be no lower than 15 inches (38 cm) and the highest 30 to 40 inches (76 to 102 cm) from the ground. Cut these back to two buds each and remove all other laterals.

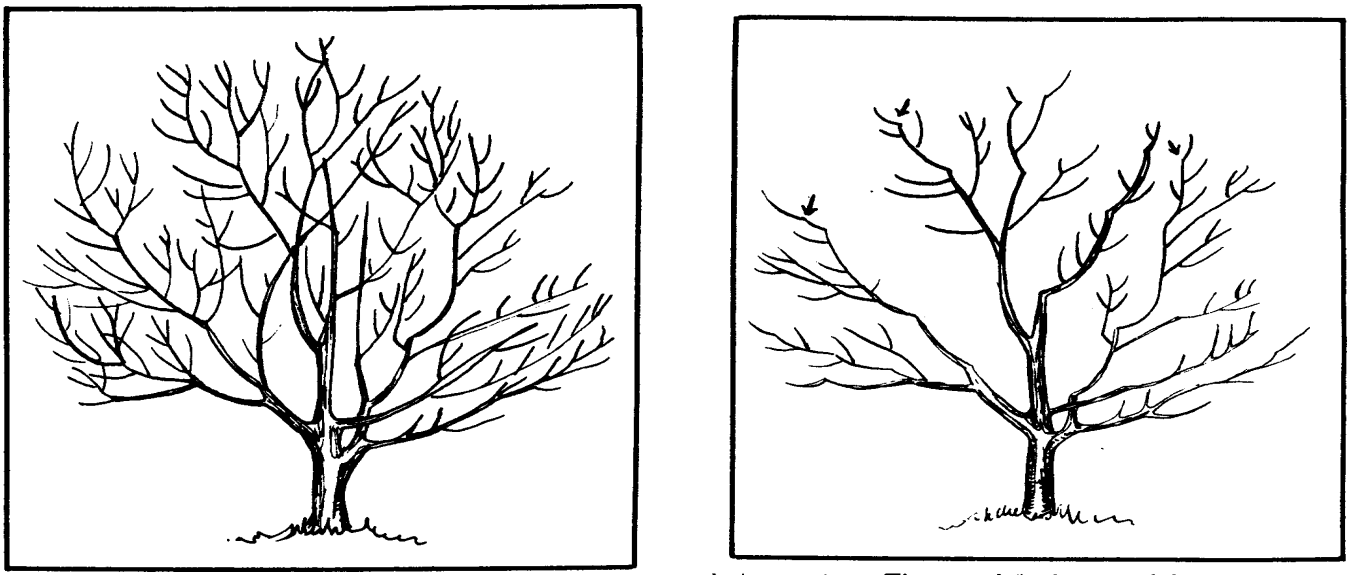

Figure 6. A bearing peach tree before (top) and after (bottom) pruning. The modified central leader has been developed and maintained. Thinning to induce development of new fruiting wood throughout the tree is the main objective of pruning bearing peach tree.

Once the scaffold system is established, prune as little as possible until the tree begins to bear. Choose one centrally located upright shoot and remove all others. The main purpose of this shoot is to prevent sunburn to the north and east scaffolds. Lightly head back terminal growth on the scaffold limbs to outward-growing laterals. This develops an open, spreading tree.

Since peaches are borne on wood of the previous year's growth, prune the trees annually to stimulate new growth and maintain production near the main body of the tree. Pruning the mature peach tree consists mainly of moderate thinning and heading back to outward-growing laterals to keep the tree low and spreading.

Nectarines, apricots and almonds are pruned as peaches are, except the pruning is less severe.