

Pruning Stone Fruits

Peaches, Cherries, and Plums

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THE PEACH

Methods of Pruning Based on Bearing Habits.—A knowledge of the fruiting habits of the peach is fundamental to profitable and intelligent pruning practices. This is more true with this fruit than with other deciduous fruit trees because the peach bears only upon wood or growth of the past season. Therefore, the pruner must know, and be able to locate, the one-year-old or fruiting branches. These are found, of course, as terminal growth or as shoot growth from the larger branches and main trunk.

Since most of the fruiting wood will be found as growth extension from the ends of the branches or on the periphery of the tree-tops, the fruit produced each year will be farther and farther from the main stem or trunk. Thus in a few years without renewal pruning, or cutting back, the tree branches are likely to become greatly extended and may break in storms or when heavily loaded with fruit. To keep the fruiting wood within bounds prevent the breakage of branches, and renew the fruiting wood yearly, the trees must be properly pruned annually. Such pruning tends to produce trees of long life and with fruiting wood close to the ground and near the trunk.

Heavy and Light Pruning.—Heavy pruning of peach trees has been discontinued because it has proven unprofitable. The tendency is toward lighter pruning. This has been especially true in young orchards during the first five to six years after planting. The change has been brought about through a study of the performance records of both young and old orchards. It has been found that greater production per tree may be had by lighter pruning and the trees come into profitable bearing earlier and develop more fruit-bearing wood.

Lighter pruning practices, however, have been made possible through the intelligent and profitable use of other aids. Some of these have been the judicious use of readily available nitrogen fertilizers, the



Fig. 1.—Old peach trees cut back to two- and three-year-old wood after their fruit buds were killed by late freezes. The vigorous growth following lessens the chances for a crop the next year.

control of peach tree borers by the employment of paradichlorobenzene, and the plowing under of leguminous cover crops to build up the nitrogen and humus content of the soil. Cultivation for early spring and summer and cover crops for late summer and fall have also given good results.

On rather light and impoverished soils, smaller crops will naturally result. The trees will require heavier pruning to reduce the amount of fruiting wood needed, in turn to develop fruit of marketable size, and to maintain new growth. To build up the fertility and organic matter of such soils, the proper use of suitable orchard cover crops is strongly suggested. Crops best adapted to the different soil types and climatic conditions of the peach-growing districts should be found most profitable.

Pruning at Planting Time.—Successful orchardists generally prune peach trees soon after planting, taking into account the grade and character of the tree growth. It is usually unwise to prune strictly according to a definite standard of severity and height, regardless of all other factors. Trees are generally headed back to a height of from 16 to 24 inches, the greater height being used for large vigorous trees and the smaller for less vigorous trees which may be headed back close to the ground. The open head system is most often preferred, although the modified leader head should prove satisfactory.



Fig. 2.—The same peach trees showing a vigorous growth two years after treatment.

With a good grade of one-year-old peach trees, it is usually advisable to remove near the main trunk all but three to five of the strongest and best placed scaffold branches. These main branches should be spaced alternately up and down and around the tree trunk, and if possible, from six to twelve inches apart. After these main branches are selected, they should be headed back to stubs about two or three inches long. If the peach trees used for planting are small, all the branches should be removed and the trees headed back to a height of eighteen or twenty inches from the ground.

Method of Training.—The open-center or vase form is generally adopted because the peach lends itself well to this type of head development. The trees are usually started with from three to four scaffold branches placed if possible about 5 to 10 inches apart and arranged up and down and around the trunk. The central stem or leader is removed close to a side branch. Lateral branches are headed back less severely than with the modified leader type of training.

From time to time, shoots or branches that begin growth in the center and give promise of developing into leaders should be removed.

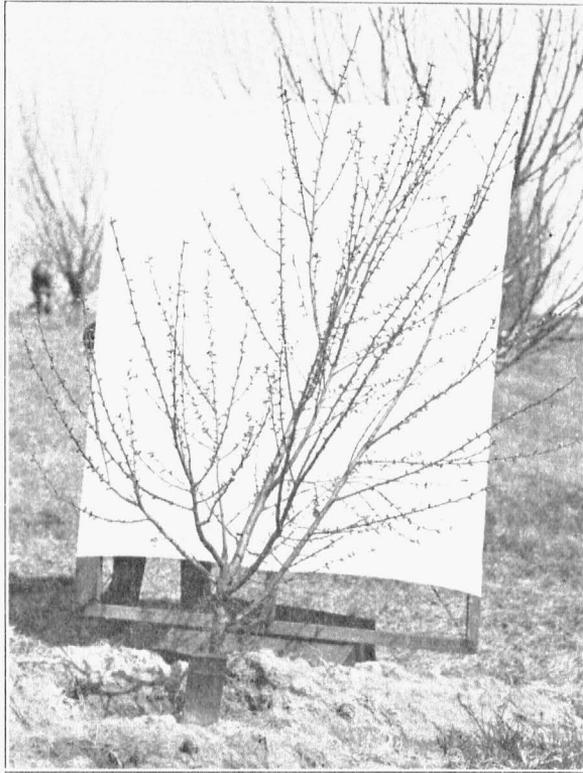


Fig. 3 —A young peach tree before pruning.

A spreading tree top is developed with a sufficient number of lateral branches arising from the main scaffold limbs to properly occupy the central area and prevent sunburn to the large branches. Sufficient light, however, should be allowed to enter for good fruit and new wood development.

Pruning Until of Bearing Age.—Very little if any pruning is done during the first summer. In the succeeding dormant season, three or four lateral shoots should be left for framework branches. These should be spaced at approximately equal intervals around and up and down the trunk, and should consist of branches having about the same vigor. Since limbs with wide angles are strongest at the crotch, these should be given preference—other factors being equal—in building the frame work of the tree.

In the following dormant season, the second after planting, vigorous misplaced limbs should be removed to induce growth in the proper

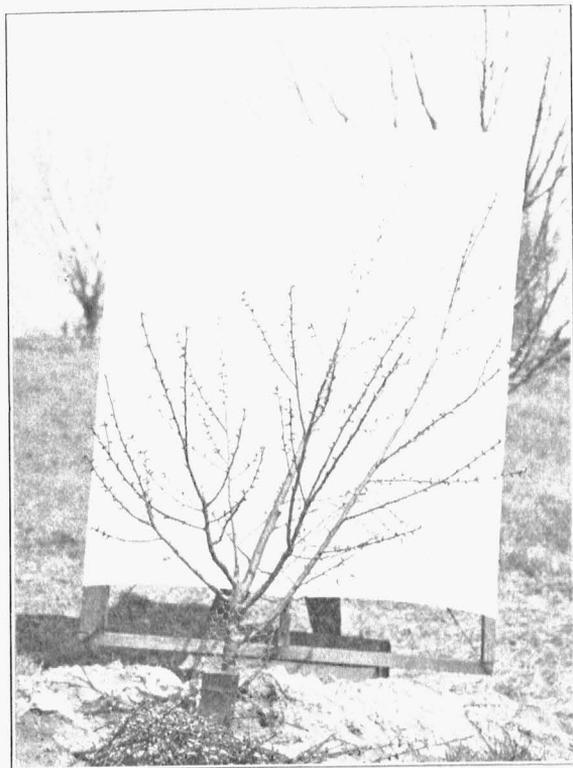


Fig. 4.—After the pruning. Note judicious thinning and cutting back.

direction and limit the number of secondary framework branches. Each scaffold branch may now be pruned to leave one or two strong limbs for the permanent secondary framework. If these arise as much as 18 inches or more from the trunk all the better. The less vigorous interior shoots are thinned but all are not removed. Some should remain because they add to the total growth and the first fruit is borne upon them.

For the next pruning season, the third after planting, the same general procedure as in the second dormant period can be followed, removing misplaced vigorous shoots and thinning the interior ones where necessary. If, due to poor growth in the first season, secondary framework branches were not selected, such a choice can be made at this time.

In the third year where growth has been very rapid, it may be necessary to start heading back the strongest framework limbs to good growing laterals, developing in a horizontal direction. This is true because peach

trees which make a vigorous growth may in three years approach a stage demanding treatment more like that given mature trees.

In this formative period of three to four years, the object is to develop a strong, well-balanced framework. The general appearance of the trees should be spreading and bowl-shaped, in order that high colored fruit can be produced. More danger arises from too much pruning than too little. Trees making a poor growth are pruned heaviest while those producing strong shoots and laterals are pruned least.

Young trees do not require general cutting back of branches to obtain open heads. Only those branches that are more thrifty and that grow in the wrong directions or interfere with other limbs should be tipped. During the first two or three years, trees trained to four or five scaffold branches may need only thinning of shoots in the center. An abundance of renewal wood for fruiting purposes can be secured by removing upright branches and by thinning shoots, without cutting back the main limbs to upright stubs.

The chief problem in pruning a young orchard is to extend the framework and bearing surface of the trees so heavy loads of fruit may be carried without breaking of branches. The center of trees should be fairly open, allowing a few shoots to grow inward and upward. It is important that young trees be headed low and that fruiting wood be kept near the ground and not too far from the main trunk in order to facilitate picking, spraying, and pruning operations.

Pruning Bearing Trees.—Pruning of bearing peach trees may be briefly summarized as follows: First, during bloom or as soon after as danger of late frost is past, the trees should be pruned moderately, the branches thinned out sufficiently to admit sunlight, and the most vigorous new wood headed back to a distance of about $\frac{1}{4}$ to $\frac{1}{2}$ of its length. Second, if the bloom is heavy, the pruning may be more severe, the thinning out greater, and the heading back more general. Third, if the bloom is very light, very little thinning should be done to procure a crop.

Fourth, when there is no bloom as a result of low temperatures during the winter, late spring freezes and frosts, or for other reasons, the branches of the trees may be cut back into two-year-old wood. This will invigorate the trees and a strong growth of new fruiting wood should be produced for the next year. The height of the trees will also be lowered and fruiting wood may be caused to develop lower down on the larger branches, and closer in toward the main stems or trunks. If the pruning is too severe, however, a heavy growth of water sprouts or succulent wood may be produced with few or no fruit buds for the next year's crop. When the shoot growth is thick and heavy, light summer pruning and thinning in June may be helpful in the development of fruit buds.

A combination of light winter heading and thinning, done either at the same time as the heading or postponed until early in the summer, permits regulation of the size and shape of the tree. At the same time, it insures an open tree that allows sunlight to penetrate to the center where it aids not only in the development of hardy fruit buds but also in coloring the fruit and in reducing susceptibility to brown rot. In heading, the branch should be cut back to a side branch if possible. In thinning, the entire branch is removed from the base, cutting close to the main limb and leaving no stub. Peach trees require pruning to secure more uniformly strong, well-developed trees, to give better distribution of fruiting wood, to assist in the maintenance of vigor, to renew growth and keep the trees in bounds, and to remove weak, injured, dead, or pest-infested branches.

THE SOUR CHERRY

Bearing Habits.—The sour cherry, apricot, and the Japanese and American plums have a fruiting habit similar to that of both the peach and the sweet cherry. In fact, these fruits bear on both spurs and shoots. Some varieties however, tend toward developing lateral fruit buds on one-year-old shoots while others develop most on short shoots or on spurs one or more years old. As sour cherry and plum trees grow older and less vigorous, fruit bud production on shoots gradually gives way to production on spurs or short stocky growth.

Long, vigorous shoots, such as characterize strong growing young trees of both the sour and sweet varieties, possess only vegetative buds and are unfruitful. With less vigorous growth a smaller percentage of buds form shoots and a larger number develop into spurs or short growth.

Light pruning of young trees usually result in the formation, on comparatively short shoots, of fruit buds instead of leaf buds. But heavy pruning tends to reduce or prevent fruit bud formation on shoots and to decrease the number of fruit spurs formed. A more moderate type of growth induced by light pruning promotes fruit bud formation on shoots, and increases the number of fruit spurs.

Methods of Pruning.—The sour cherry therefore requires comparatively light pruning until bearing begins. In fruit production, severely pruned trees may be delayed from three to five years behind lightly pruned trees. On the other hand, no pruning or very light pruning may lead in a few years to very thick, bushy growths which cause the fruit to ripen unevenly, limit bearing largely to the periphery, and necessitate several pickings. With corrective pruning, the trees usually make more shoot growth, produce greater trunk diameter, come into profitable bearing earlier, and bear heavier crops than similar trees more severely cut. Furthermore, summer pruning usually has a dwarfing

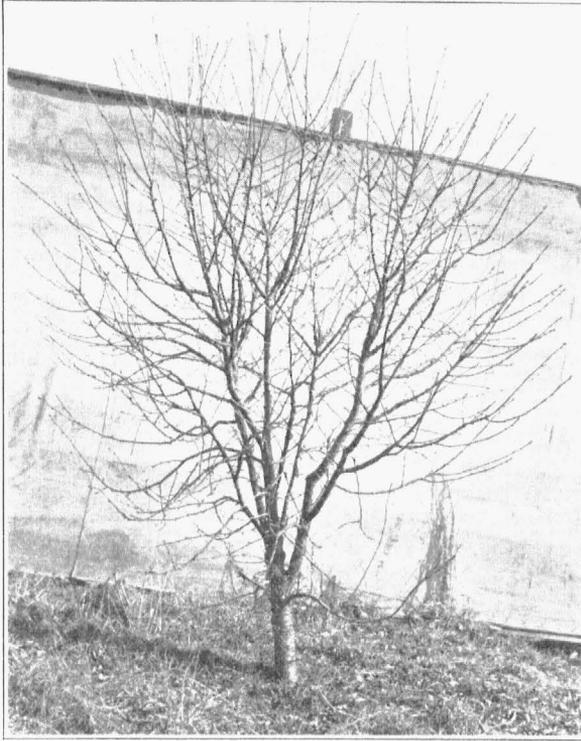


Fig. 5.—Five-year-old Montmorency cherry tree before pruning.

effect upon the trees and reduces yield when compared with winter or dormant pruning.

At planting time, the branches of sour cherry trees should not be cut back since many trees may die and others are likely to make poor growth because of injury. In many sections the tree seems to make a much better start if the terminal buds of the branches left for the scaffolds are not removed. This is apparently true because the sour cherry does not start growth from lateral buds readily in the drier and warmer climates. The leaving of terminal buds gives better growth. The young tree may be pruned without injury by the entire removal of those branches not required to form the main framework of the tree. Through their proper selection therefore, well-placed main limbs may be secured and, with no cutting back of the branches, growth should be rapid and satisfactory.

Methods of Training.—The sour cherry is pruned to both the open head and modified leader. Either system may give satisfactory results

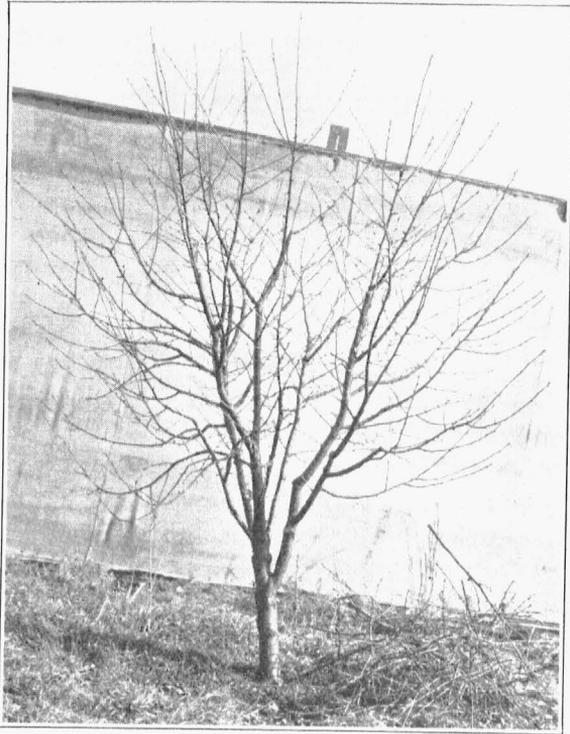


Fig. 6.—Same Montmorency cherry tree after pruning. Note the comparative small amount of wood removed, making the tree more open and thus admitting a greater amount of sunlight.

if carried out properly. In general, the modified leader type of training is preferred, although the open or vase form is used by many producers. The object should be to train and grow spreading tree-tops, sufficiently open to allow sunlight to enter. In fact, the tree-tops should be kept open enough to admit sunlight to all parts of the interior; otherwise the fruiting branches and spurs die out toward the center and fruit production is confined to the outer portions of the trees.

On one-year-old trees, which are usually straight whips, little or no pruning is required. However, since sour cherry trees do not start growth readily from lateral buds, under Missouri conditions, heading back should be avoided. If two-year-old trees are planted all but three or four of the strongest and best distributed branches are removed. Those left are the permanent ones and should be well distributed around and up and down the trunk with as much as 5 to 10 inches between them if possible.

In training trees to the modified leader type, they are grown for the first few years as typical leaders. To produce this type of head, the main stem or the highest branch located near the center is allowed to grow a little faster than any of the lateral or side branches. The modified leader is thus formed by adding a length of about 15 to 18 inches each year to the main stem. When the trees have reached sufficient height the leader or main stem is removed, if necessary, by cutting to a side branch about the same size.

After the first three to five years, they are treated as open center trees. Consequently the term "delayed open center" is frequently used in this connection. A comparatively large number of scaffold limbs are developed but the trees are not so tall as to prevent thorough spraying or economical harvesting and pruning. Splitting at the crotch is practically eliminated and all the advantages claimed for the open center or vase form may be claimed here.

Pruning Bearing Trees.—After the trees come into bearing, care should be taken to keep the tops and sides thinned sufficiently to allow the fruit spurs to develop properly and be productive. The tendency of sour cherry trees is to form a canopy of twigs and branches so thick that little sunlight penetrates to the interior. Without thinning and opening up the tops, much of the fruiting wood toward the center dies from a lack of food materials manufactured by the leaves in sunlight.

With a somewhat heavier type of pruning for bearing trees, supplemented by fertilization, cultivation, and other good cultural practices, a stronger growth throughout the whole tree may be produced. Thus a large number of new fruiting spurs may be formed, the old spurs are invigorated, and more blossoms set fruit.

Contrary to the information that was prevalent a couple of decades ago, it is now known that sour cherry trees respond as favorably in fruit production to proper cultivation, cover crops, pruning, fertilizing, and spraying as do other deciduous fruit trees.

SWEET CHERRY

As in the case of sour cherries, the sweet cherry may be pruned to either the open head or the modified leader type. Some modification of the central leader is required as many varieties tend to grow rangy upright branches. The trees usually attain somewhat larger size than sour cherries, but at planting time are pruned and trained like the sour cherry. The pruning practiced for the first three to five years after planting is not materially different from that suggested for the sour cherry.

When the trees come into profitable bearing it is not necessary to thin out or cut back much to admit sunlight and air, because the largest

percentage of the crop is borne laterally on spurs. As trees grow older, however, they become less productive and vigorous. To stimulate the growth of new branches and new fruit spurs then and for general invigoration, somewhat heavier pruning may be done. This should consist of thinning out the tops and sides and cutting back the upper limbs to outward growing branches of about the same size.

THE PLUM

Usually young plum trees produce fruit buds on shoots which gradually give way, as the trees grow older and less vigorous, to the development of fruit buds on spurs. The Japanese plum, however, is more like the peach in that it also produces fruit buds laterally on one-year-old wood. This is true to a greater extent on Japanese than on other kinds of plums, though all have a tendency to bear considerable fruit on spurs.

In plum culture, it is better to err on the side of under-pruning than over-pruning. Apple trees may recover from severe cutting while plum



Fig.—7. Six-year-old Shorpsore Damson plum tree before pruning.



Fig. 8.—Same plum tree after pruning. Note small amount of young wood removed. The tree, however, is much more open for sunlight and proper spraying.

trees may never recover. Trees should be pruned when young so that well-arranged scaffold branches may be developed as in the case of peach trees. Bad crotches should be prevented and symmetrical tops encouraged.

European varieties are usually trained to the central leader type while the Japanese sorts follow the open center system. The usual methods of training, pruning, and shaping the young trees should be practiced to develop branches able to carry heavy loads of fruit without breaking.

After bearing age is reached, pruning should become much like that for sweet cherries. Japanese plums are usually pruned a little heavier than other plums. This seems necessary to produce better-shaped trees, prevent breakage of branches, and to encourage the profitable production of fruiting wood. The heavier cutting consists of thinning slender weak branches and cutting back strong upright growths to produce more spreading trees. This may be especially helpful with the Burbank variety.