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PRUNING SUGGESTIONS FOR FRUIT TREES

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Tree Pruning An Old Question: As regularly as the autumn leaves fall from the fruit trees, the aged subject of fruit tree pruning is brought out, "Dusted off," and discussed, understood by some and misunderstood and misapplied by others.

Pruning is one of the oldest of orchard practices; varying according to the age and vigor of the trees, soil conditions, fertility, moisture supply, and the fruit which it is desired to produce. There are many systems, so-called, of pruning. We have the Modified Central Leader, Long Renewal System, Central Leader, Thin Wood, and others. Any system to be successful is one that includes light annual pruning and avoids heavy cutting of essential bearing wood. Heavy, needless cutting stimulates growth which must be removed later.

GENERAL CONSIDERATIONS

Pruning Cannot Replace Soil Management: Pruning cannot take the place of a well planned orchard soil management program. Trees which are not making sufficient annual growth because of poor soils cannot be brought back to normal vigor and production by heavy pruning alone. The soil must supply the fertility needed for tree and crop growth. The orchard soil management practice must, in turn, keep the soil fertile.

Trees Often Planted Too Closely Together: Many of the older orchards in the Willamette Valley and in the other fruit growing sections of this state are crowded. The trees are planted too closely together and sunlight is excluded from parts of the trees. To grow and bear properly sunlight must reach all parts of the trees. Pruning cannot remedy the conditions found in overcrowded orchards.

It takes resolution to remove trees in closely planted orchards. There are instances in the Willamette Valley of orchards thinned by removing one-third to one-half of the trees where the yields at the end of three years reached those before the trees were removed. The trees were more vigorous and fruit and nut quality improved.

Pruning Tools: Of late years lighter and better made pruning tools are being used. Pruning tools should be kept sharp. Dull tools make poor, uneven cuts which do not heal properly. Pruning operators can work more rapidly with sharp, properly adjusted tools.

Time of Pruning: In regions of mild climate, pruning can be done almost any time after the leaves fall. In the colder climates there is evidence that when severe or cold weather follows the December pruning, the trees are damaged sometimes beyond recovery. Injury is said to be more severe when large cuts have been made.

Time of pruning will depend somewhat upon the amount of pruning the grower must do. When pruning can be delayed until just before the growing season conditions are more favorable for the healing of wounds and the recovery of the tree.

Protecting Tree Wounds: Tree wounds an inch or more in diameter when made on the trunks and scaffold branches should receive a coating of tree paint after the wound has had time to dry out for a month or six weeks. When oil paint is used on fresh wounds, killing back of the bark and cambium layer may occur. After drying takes place, the kill back from oil paints is negligible, especially after a callous has started to form. One of the more successful tree paints is raw linseed oil and bordeaux powder mixed to the consistency of house paint and applied to the cut area without spreading over the adjoining bark. Bordeaux paint for tree wounds has been effective in keeping out wood rotting fungi.

Occasional Heavy Cutting Unsatisfactory: Severe pruning at three or four year intervals is not constructive pruning practice. The annual removal of surplus wood by well distributed small cuts over all parts of the bearing tree is a good procedure. The number of cuts and amount of wood to be removed will depend upon the variety and growth conditions of individual trees. The cutting of large scaffold limbs low down on the trunk is best avoided at all times.

An eastern horticulturist recently remarked, "The trends in pruning are distinctly toward more hunting and fishing." This comment deserves consideration. A grower might better be hunting or fishing than spending time overpruning an orchard.

Pruning Practices Vary: The condition of the individual trees, and the variety, have much to do with the amount of pruning to be done. The objective of pruning is to place the tree in a position to produce a maximum crop of marketable fruit. Overpruning the bearing area of the tree defeats this purpose.

Pruning heavily to avoid the thinning of the fruit crop is impractical, reduces total bearing area and production, and does not properly thin or distribute the fruit load when there is a full fruit set.

Pruners who would be successful must learn to recognize readily the differences in the nature of bearing wood which grows in the different parts of the tree. The greater vigor of wood in the outer area of trees is easily noticeable in comparison with less vigorous and less productive wood found inside and in the shaded parts of the tree.

Hasty Pruning Source of Errors: Hasty cuts often result in the removal of bearing wood that should be left in the tree. The wood which is removed from the tree bears no fruit. Any removal of vegetative growth will be at the expense of production. Very light pruning may slow down the current season's vegetative growth. Small sized fruits may result in heavy crop years unless careful fruit thinning is practised. There is a middle ground between too heavy and too light pruning. The amount of wood to cut away annually can be determined through practice and observation of tree condition.

Buying the Nursery Stock: Commercial orchardists quite generally buy the one-year-old nursery whip. A tree of this age recovers quickly from the shock of digging and replanting, and can be trained more easily to the form the grower desires.

Older Nursery Trees Undesirable: When trees two or three years old are purchased from the nursery, scaffold branches may have already formed. The grower must study this kind of tree. Select scaffold branches which are wide

angled if possible, and spaced widely apart vertically on the tree trunk. All things considered, the more desirable tree for planting is a one-year-old whip.

Modified Central Leader Tree in Favor: In Oregon, training to the "Modified Central Leader" tree is more often preferred. At the beginning of the second year's growth three to four scaffold branches are selected for the permanent top. These scaffold branches should be spaced widely apart vertically, and located on the sides so as to give a balanced top. Three, four, or even five scaffold branches should be selected early in the life of the tree. Five scaffold branches may prove to be one too many unless they are well placed.

Wide-angled branch attachments are selected if possible because of the stronger unions compared with the narrow sharp-angled branches. There is no serious objection to the central leader tree if care is used in selecting well placed scaffold branches. Then cut away surplus limbs. There comes a time in the life of the central leader tree when the extreme top must be changed to the modified form by pruning. Otherwise the tree may grow too tall.

Correct Sharp Angles and Double Heads: Scaffold limbs on young trees often form sharp angles and double heads. Sharp angle branches and double heads develop weak, easily broken-down trees. Such defects should be rectified by pruning as soon as they appear.

With apples, pears, filberts, and peaches the scaffold branches selected to form the trees are not cut back at the end of the first season's growth, unless branches have made a growth of thirty inches or more, or unless the lower branches are long enough to take the lead, in which case equalizing is accomplished by cutting back the longer branches so that the extreme upper branch has a slightly favorable position.

PRUNING YOUNG TREES

Heading Young Trees: When young trees are removed from the nursery, much of the root system is destroyed. The tops of these young trees should be cut back at the time they are set in the nursery, to equalize the tops and root systems.

Proper Head Height: The height to which a newly set tree is headed depends often upon the whim of the grower. The height of the head can vary except that extremely high heads should be avoided.

Trees are often headed high to allow more ease in working about them. The result is a slower developing tree, a more expensive tree to prune, thin, spray, and harvest. The lower headed trees make a somewhat faster growth, and pruning, spraying, thinning, and harvesting the fruit are easier, more efficient and less expensive. There is less sun scalding and winter injury of trunks of low headed trees.

Apple, cherry and pear trees are headed at about 26 to 30 inches high and ultimately three to five scaffold branches are selected for the permanent tree. With the young apple and pear trees the scaffold branches are not cut back unless the growth is very long, then these scaffold limbs may be shortened to 25 or 30 inches.

Severe Cutting Delays Development: Study the young tree and make the corrective, shape forming cuts the first and second years after planting in the orchard. Excessive cutting back of scaffold branches of young trees dwarfs the tree and delays fruit bearing. Unnecessary shoot growth is forced which must be removed later.

It is not good practice to remove the small twigs and branches in the center or bowl of young trees, except such branches as have a tendency to lead out in growth to the detriment of the selected scaffold branches. These small twigs and branches should be left to shade the trunk of the tree and to provide extra leaf surface to feed and develop the young tree. Early fruit is borne on such wood.

When long scaffold branch growth occurs during the first and second growing seasons the tips may be pinched out when a length of about 25 or 30 inches is reached. Branching will follow on limbs so treated. Sweet cherry trees need close watching in this regard, and trips of inspection should be made through the orchard every ten days or two weeks for this purpose. Otherwise summer pruning is generally to be discouraged on young trees.

Pruning Young Cherry Trees: Young sweet cherry trees have a tendency to form scaffold branches too close together immediately below the cut made to head the tree back. The tree should be closely watched during the first growing season and limbs and scaffold limbs not properly placed or spaced pinched back or removed. Three or four scaffold limbs as wide angled as it is possible to secure and spaced widely apart on the tree are sufficient.

There is a tendency of the sweet cherry, at times, to grow long limbs without branching. The primary scaffold limbs should be pinched back on the young growing tree when they have reached the length of about 30 inches. This will cause branching of these limbs on the young tree.

Only corrective and shape-forming cuts are made on the sweet cherry. Heavy pruning has no place on the sweet cherry.

The sour cherry is usually headed low and the side limbs are removed with the exception of four to six, which are retained for scaffold limbs. Follow the modified leader type of training. Practice light corrective pruning rather than heavy pruning.

Young sour cherry trees have a tendency to form thick tops. Carefully studied thinning cuts only should be made. It is easy to over-prune the young sour cherry.

Starting Filbert and Peach Trees: Filbert and peach trees are headed at 24 to 30 inches. Side branches on peach and filbert trees are often cut back to one bud at planting time. Thus must be followed up by early removal of the extra branches or shoots which grow out of the trunk because of the close pruning.

Pruning Walnuts. There is difference of opinion among growers regarding the best height to head a newly planted walnut tree. One method is to cut walnut trees six and eight feet long to a height of about four to six feet at planting time. Three or four strong angle branches spaced as widely apart as possible up

and down the tree are selected, as they appear, for the tree head. This method is not as popular as the following.

A second group of growers head the young walnut trees to about 24 to 48 inches from the ground. One vigorous shoot is trained upward by tying it to a stake during the first few years of its growth. From three to five widely spaced scaffold branches are selected for the permanent tree and these may be spread over a space of two feet from the ground to as high as eight feet.

Those who want to sacrifice the low headed tree for ease in cultivation may space such limbs from four feet to eight feet in height.

Severe cutting back of new growth on the scaffold limbs is not practiced except where a limb may have gotten out of balance by making a long seasonal growth.

PRUNING MATURE TREES

The practice of pruning the mature trees varies from making heavy slashing cuts beyond all reason to no pruning at all.

Pruning of the bearing tree should be a process of making small cuts here and there throughout the tree to secure a proper distribution of fruiting wood, and to admit sunlight to all parts of the tree.

A set method of pruning is not recommended for all trees, because individual trees vary in their requirements. Study of the tree to be pruned will often indicate to the grower the cuts that should be made.

Avoid Large Pruning Wounds: Avoid pruning which removes large scaffold branches at the trunk. Such large cuts seldom heal, and leave the tree permanently disabled. Pruning cuts should be made close, and no stubs left to cause decay. Those cuts which are more nearly vertical heal more rapidly. Large horizontal cuts, especially low down on tree trunks, heal slowly, if at all. Heading back of upright growing limbs as a practice is to be avoided at all times, except that the occasional high upright limb may be cut back to a side limb.

Apple Trees: Pruning operations on bearing apple trees will vary according to the vigor of the tree and the variety. Experiments show that apple yields are greatly decreased by heavy pruning.

Older trees which are not making the desired amount of terminal growth annually may need pruning to force new growth. Numerous cuts of small wood may be made throughout the tree to remove the wood which produces the lower grade apple, and the ineffective wood which is shaded by the tops and sides of the trees. Enough wood should be removed in the tops of the trees and sides to allow sunlight to reach into the trees to promote new growth and fruit bud formation. This wood removal should not be such that scaffold limbs will be so exposed to the elements as to cause sun scald and winter injury.

Pruning Pear Trees: In general, directions for pruning apples may be followed with pears except that there is a wide variation in pear pruning due to the difference in varieties. Blight control enters the picture and modifies

pruning practices in some locations. Pears have an upright growing habit which often leads growers to cut heavily, assuming that the tree will be prevented from growing too high. This results in numerous new upright shoots forming below the pruning point. These must be later removed and the total result is dwarfing and delayed fruiting. The sooner cutting back of upright limbs is discontinued the more quickly fruit spurs and laterals will form and upright growth cease to be excessive. Fruit loads will spread the tree when surplus inside wood has been properly removed. Pear pruning, especially the Barlett variety, should be by a few well distributed cuts over the entire bearing area.

Pruning Bearing Cherry Trees: A mature sweet cherry should be pruned very lightly, which in final analysis means thinning cuts except that the tree should be pruned to keep it from growing too high in the air. The top should not be butchered but cut back to side branches which will pull the scaffold limbs to their own side of the tree.

Thinning cuts on mature sour cherry trees should be made to allow sunlight to shine into the tops of the trees, and as the trees become older, the small wood on the bowls of the trees, where light colored cherries are often produced, should be removed.

Extensive cutting on sour cherry trees has reduced total yield in Oregon without increasing the quality of remaining fruit.

Pruning the Italian Prune: The pruning of bearing Italian prune trees while the trees are young should be light. Sufficient wood is taken out to allow sunlight to reach the inner parts of the tree. The top is kept open and the scaffold limbs trimmed so the fruit load will pull the limb to its own side of the tree.

Old prune trees will form new bearing wood and produce better fruit when the devitalized wood found on the underside of the limbs is removed. This wood is broken off easily with a pole saw, lopping shears, or gloved hand. Avoid cutting back vigorous upright growing limbs except the occasional limb out of control.

Cuts made next to the tree trunk or scaffold branches should be close and smoothly made so that they will properly heal. The breaking of the small wood out of the tops of prune trees, however, need not give the grower any concern.

Pruning Peach Trees: Following the first season's growth in the orchard three or four permanent scaffold branches are selected and only surplus wood is removed during the next two or three years.

After about the third year the wood in the peach tree must be cut back in earnest. The peach bears its fruit on the previous year's growth. As the tree becomes older the bearing area is forced out from the center of the tree. To correct this condition the outer limbs are cut back to side laterals and crotches, and the tops opened. New growth will form toward the central part of the tree from which new bearing wood is selected. It is not advisable to cut back upright growing terminal peach shoots or twigs except to side shoots or twigs.

Pruning Bearing Nut Trees: During the first four or five years of growth of the young filbert tree only occasional thinning cuts should be made after the

three or four scaffold branches have been established. It is not advisable to cut or head back side and top branches of young filbert trees while the trees are still producing well filled nuts.

When filbert trees approach mature age, devitalized and fruited-out wood in the center of the tree may be removed and occasional limbs throughout the tree cut back to side branches.

In aged walnut orchards the tendency now is to allow scaffold limbs to hang lower than formerly. This allows a wider spreading tree and a larger fruiting area.

As walnut trees grow older the fruited-out, devitalized wood throughout the center and top of the tree is removed to allow the light to penetrate through the tree and to promote new wood growth.

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