

Gardennote

Shaping deciduous fruit trees

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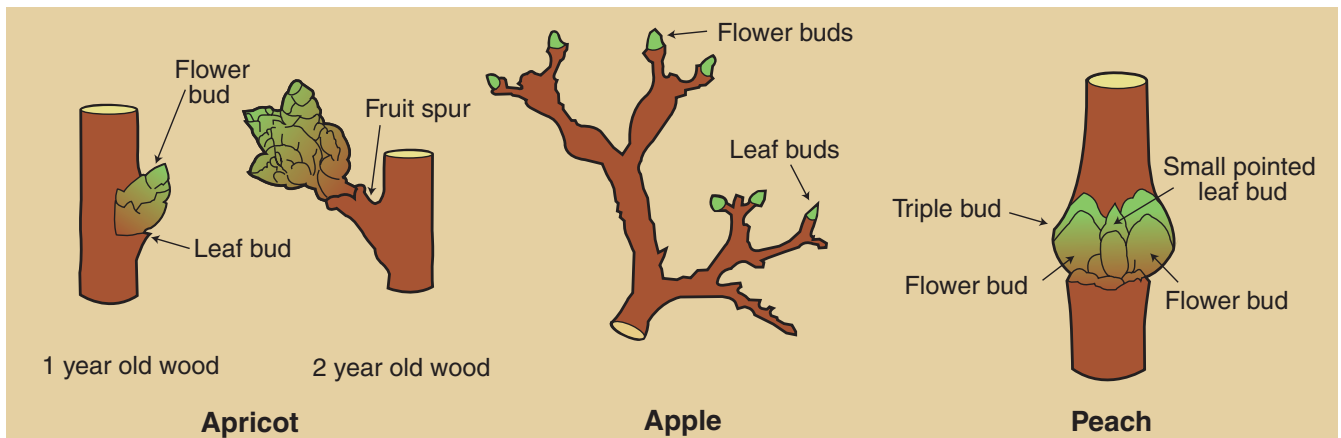


Figure 1 **Various types of fruiting wood**

When deciduous fruit trees are well-trained initially and properly pruned in following years they yield quality fruit much earlier and live significantly longer. They develop a strong framework that supports a good crop, with optimal fruiting wood continually being renewed. Training and pruning let light into the tree to maximise photosynthesis and allow air circulation which reduces the risk of disease. A well-shaped tree is easier to spray, harvest and thin out.

Different fruit species produce fruit on wood of different ages. To determine which type of wood to prune, you must distinguish between leaf buds and fruit buds. Leaf buds are single, thin and pointed, growing close to the stem (Figure 1). Fruit buds are plumper and often occur in clusters of flower buds capable of developing into fruit (Figure 1).

Traditionally pruning is done during winter dormancy. However, summer pruning is better for trees which need large branches removed, including those susceptible to gummosis such as apricots and cherries.

Training occurs between the first and fourth year. Once the framework is established and fruiting begins, maintenance pruning is introduced. In both training and pruning two cuts are used: heading back and thinning out. Heading back means shortening a branch or shoot (Figure 2) to

encourage branching. Older wood is headed back to an outward growing lateral. Thinning out means removing entire shoots or branches back to a lateral branch, scaffold branch or trunk (Figure 2).

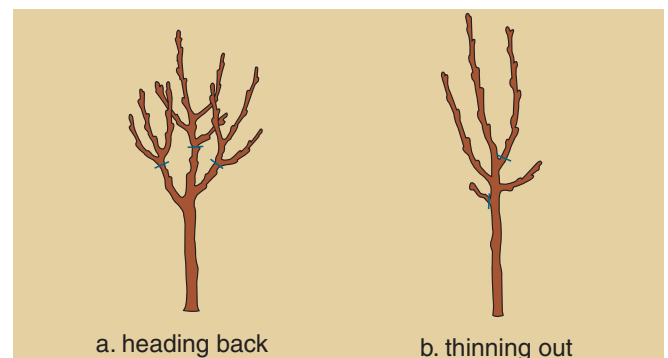


Figure 2 **Basic pruning cuts**

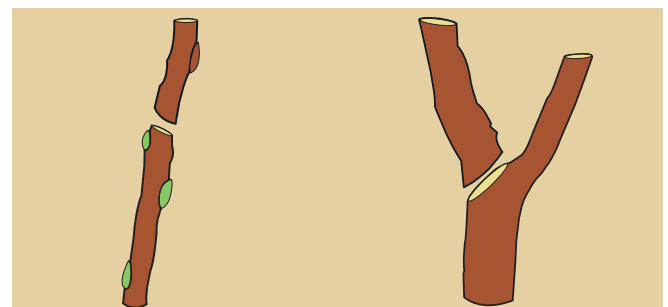


Figure 3 **Smooth cuts that are parallel with the remaining growing points will heal over rapidly.**

Important disclaimer

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Use clean, sharp, good quality tools. Prune in dry weather to prevent diseases spreading. Regular moderate pruning is better than infrequent heavy pruning. Make close, clean cuts because stubs encourage decay and canker in the parent branch or trunk (Figure 3). Undercut branches to prevent bark tearing. Seal cuts with fungicide.

Training

This Gardennote discusses two common training systems: central leader and vase.

Central leader

A central leader tree has one main trunk (the "leader"). Branching from the leader begins 75 to 100 cm above the soil surface. In the first year select three or four branches to retain as a scaffold whorl. Scaffolds should be uniformly spaced around the trunk and set at 50 to 60 cm vertical intervals. In between, the areas where branches are removed allow light into the centre of the tree (Figure 4a-e). A central leader tree is pyramidal, with the branches of the lowest scaffold whorl being longest and the higher

scaffold whorl branches becoming progressively shorter to allow maximum light penetration.

Vase

Here the central leader is removed at an early age, leaving the middle of the tree open with three to five major limbs around the trunk. Light can then penetrate the centre, minimising the shading problems which otherwise are prevalent in high vigour trees. Saplings destined for vase training may be bought branched or unbranched and, depending on their form, require different planting methods.

At planting, set the tree with the graft union at least 10 cm above the soil surface. As the buds swell, the unbranched tree (the "whip") should be headed back to 75 to 85 cm above the soil surface. Buds 15 to 25 cm below the cut will form branches.

With trees which are already branched remove very low branches. If there are three or four uniformly spaced branches around the tree select these as leaders. Head the tree back just above the highest selected leader and remove any other branches (Figure 5). If there are less than three leaders, remove side branches and cut the tree back to a whip.

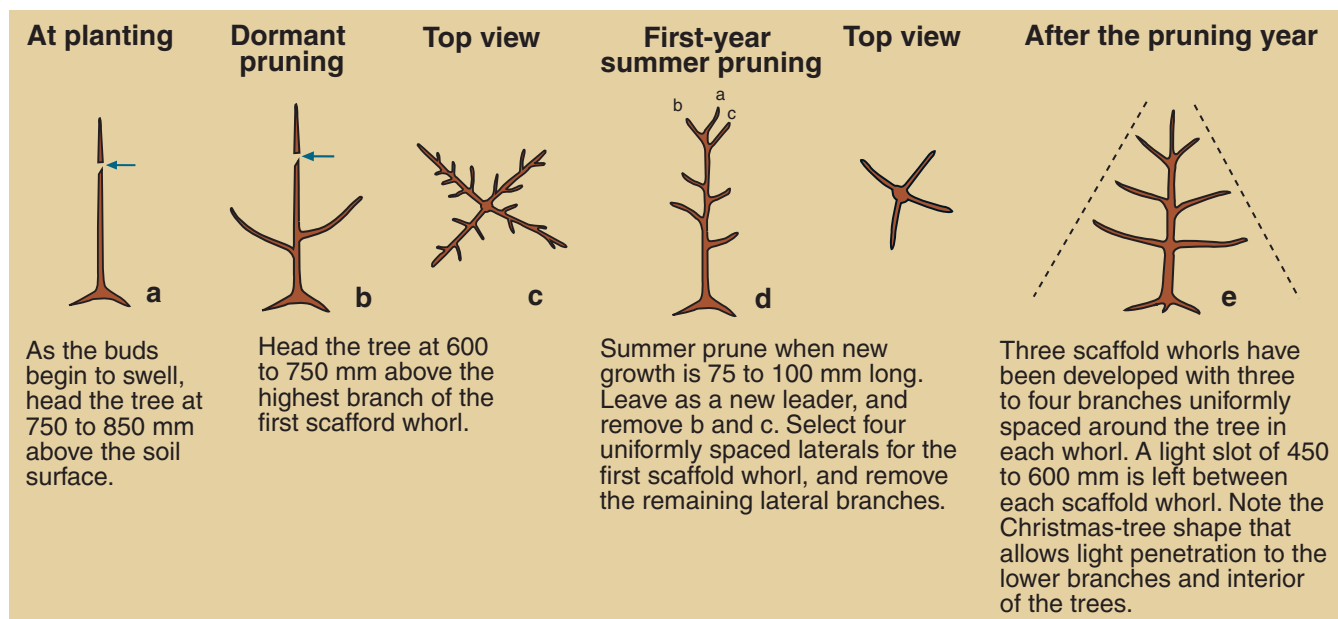


Figure 4 **Central leader training**

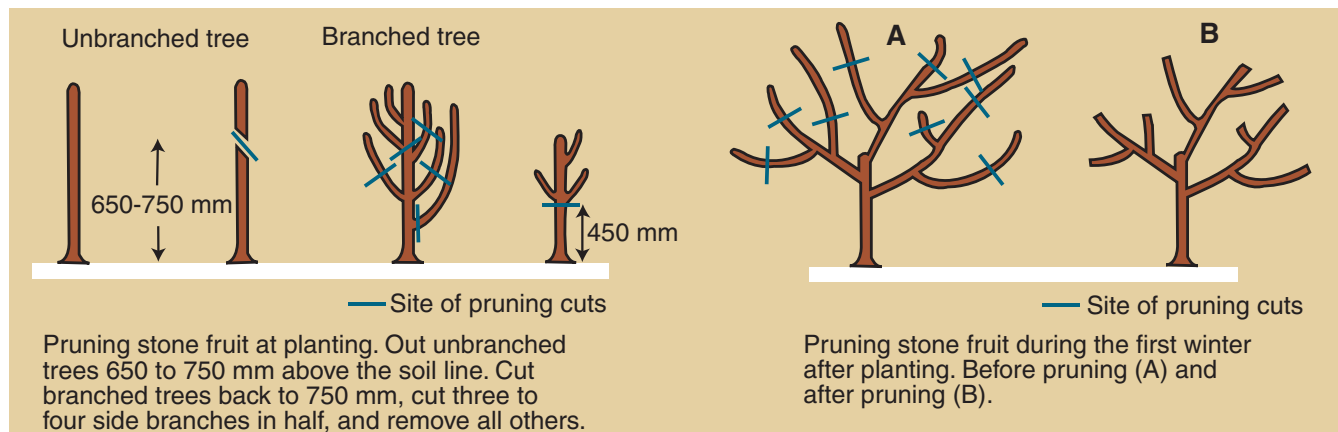


Figure 5 **Vase shaped training**

Pruning

Central leader

Dormant pruning

Dormant (winter) pruning aims to maintain the structure of the tree and prevent limb crowding or crossover. It also removes dead, diseased and broken branches and older, less productive wood.

Ensure that no branches are allowed to grow more than one-third the diameter of the central leader as these will threaten its dominance. Remove any such branches. Shorten any whorls that become too long. Maintain the pyramidal shape.

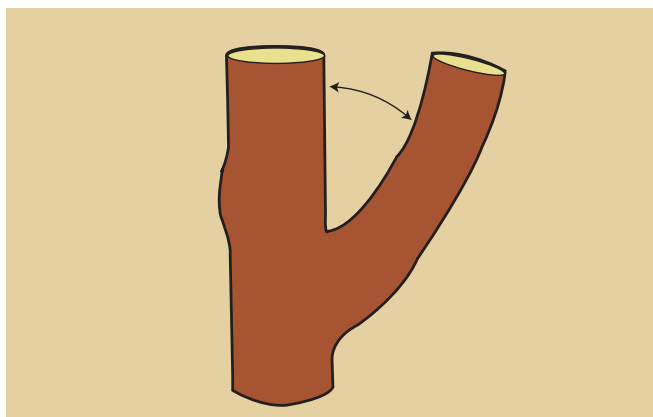


Figure 6 **Crotch angle**

Remove branches with crotch angles of less than 60 degrees (Figure 6). Space smaller fruiting laterals uniformly around the leader and the whorls to prevent crowding as the limbs grow in diameter.

Summer pruning

Summer pruning is used to remove vigorous upright shoots which are growing in the wrong place and to allow light into the tree. This stimulates the remaining shoots and reduces the amount of pruning that needs to be done in winter.

Vase

Dormant pruning

The primary leaders should be maintained and trained outwards. During the first three years head back the leaders to promote continued lateral branching and to stiffen and strengthen them.

Head back the leaders to outward growing buds or shoots similar to or greater in angle than those which are removed, to maintain an open centre.

Summer pruning

In summer remove any undesirable shoot growth as soon as it starts. Summer pruning can also be used to direct the leader growth outwards to the desired growing point instead of waiting until the winter.

General pruning guide

Pears, plums and cherries

Fruit is produced on spurs, and often lateral growth is minimal. Japanese plum bears fruit on spurs one to three years old. European plums bear fruit on lateral spurs from wood two to three years old. Pruning is mainly restricted to occasional thinning of spurs. Reduce laterals to 20 cm in length to encourage new spurs. Old spurs become unproductive.

Avoid the removal of major limbs or heavy pruning which induces water-shoots (vigorous upright shoots) and excessive terminal growth. Develop six to eight limbs to maintain a vase framework with even distribution of laterals and spurs (Figure 5) to allow the entry of air and sunlight.

Cherries are susceptible to bacterial canker which is most active in wet conditions. Heavy pruning during winter increases the risk, so summer (post-harvest) pruning is recommended.

Plum

Lateral to shorten and encourage fruit spur development.

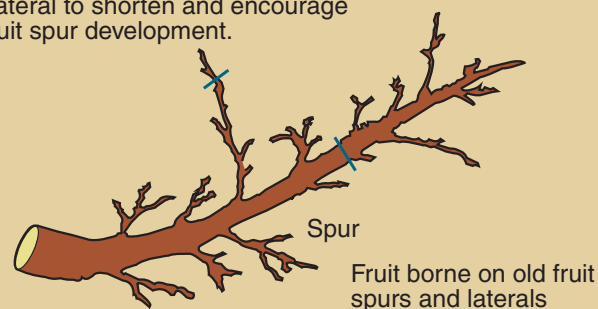


Figure 8 **Reducing plum laterals**

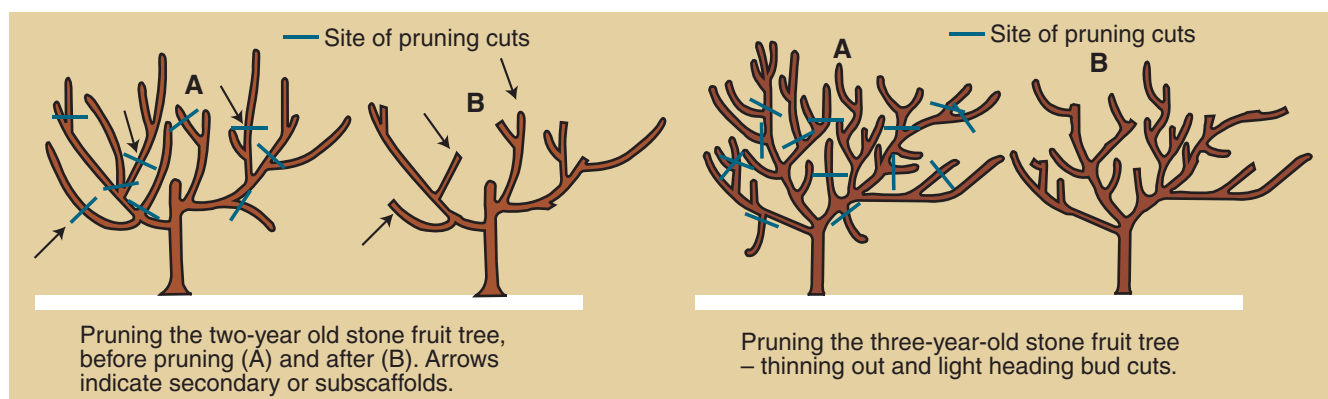


Figure 7 **Pruning open centre trees**

Peaches and nectarines

Fruit is produced on the new season's fruiting wood. Prune lateral growth annually. Remove water-shoots from the centre of the vase. Reduce by half any vigorous laterals near the framework. Remove side shoots from laterals to obtain a spacing of 6 cm between fruit-bearing shoots. Remove weak and overcrowded laterals.

Figs

Figs normally bear two crops a year. The early, light crop is borne on the previous year's wood; the main crop is borne on the current season's wood. To avoid decreasing fruit production, restrict pruning to lightly thinning excessive growth. Tip-prune selected old leaders to promote fruiting wood.

Spreading trees may require occasional attention to maintain a compact framework. Prune large branches back to shooting wood after the March harvest. Avoid cutting into barren wood with no leaf shoots.

Mulberries

Mulberries do not normally require pruning. If necessary prune in winter, as for figs. Remove occasional old, overcrowded, thick laterals.

Apples

Fruit is produced on spurs and laterals. All varieties bear the best fruit on two-year and older wood (Figure 1). Some varieties, such as Cripps Red (Sundowner TM) also bear fruit on one-year wood.

Granny Smith and Delicious varieties are spur-bearing and require only light pruning. Shorten old fruiting laterals by half and thin out old, crowded fruit spurs. Where necessary remove weakened laterals to encourage more vigorous ones to develop spurs. Avoid tip-pruning young fruiting laterals as this promotes overcrowding which spoils the vase shape.

Apricots and Almonds

Regular crops of quality fruit are produced on unpruned trees grown in good conditions. Apricot trees are very susceptible to fungi entering cuts, so prune in summer after harvest.

When sending or delivering samples, the following information is required:

Specimen identification requirements

When sending or delivering samples, the following information is required:

- Collector's name, location (where the specimen was found), full address, telephone number and e-mail address, description of the damage and date collected.

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