

# Pruning Fruit Trees Workshop

## Okeover Community Garden

15<sup>th</sup> August 2006

### Overview

Pruning is a critical horticultural skill. To ensure healthy, well bearing fruit trees you must train them and maintain healthy fruit bearing wood. Each species grows and produces fruit on specific types and ages of wood.

### Today will cover

Why prune, hygiene, equipment, pruning systems (central leader verses vase shape) with a specific focus on pip fruit (apples, pears, nashi) & stone fruit (peach, plum, apricot, and nectarine, cherry). Need to identify what are pip and stone fruit because they have different growth habits.

### Why prune

1. plant health - dead, diseased, damaged wood to remove (easy to remember - the 3 Dees)
2. plant shape - need good light to ripen fruit, air movement to minimise disease, access for harvesting
3. strong tree structure to carry the crop, therefore need to know what are leaders, laterals, spurs
4. Crop management - manage yield, need to encourage the right type of wood to bear fruit and ensure that the tree isn't over cropped.
5. Tree size management – primarily done through rootstock choice and scion variety but understanding things like apical dominance ensures appropriate growth habit and less pruning (particularly important for plums and pears).

You need to think ahead, i.e. if I make this cut how will the plant respond, where will it grow from.

### Hygiene

Need to disinfecting pruning equipment between trees. Hygiene is particularly important to reduce the risk of spreading viruses and diseases like silver leaf to healthy plants. Clearly identified diseased wood usually, recommended, to burn, particularly for viruses, silver leaf current clear wing insect control.

### Equipment

secutares

loppers

saws

chainsaws – do not recommend the use of these unless you are trained and have the right safety

equipment

hedge shears – are for hedges not fruit trees

With tools you get what you pay for. A good quality tool has replacement parts, keeps a good edge, ergonomic design making it safer and more comfortable to use.

Pruning pastes etc – 1980s research has negated the need for such products, more important to make the cut in the right place, that is leave a collar on because this is a significant area of the plants immune system.

### How to make cuts.

choose the right tool

larger branches i.e. use a saw and take off in sections

angle and position of the cut

### Seasonal differences

winter pruning – strong growth, major structural development, replacement of old wood

summer pruning – fine tuning, retain light to centre, remove growth that will only be cut off next winter, regrowth is much weaker compared with winter pruning.

### Demonstration

To take a group discussion approach to pruning pip and stone fruit trees. Grapes can be pruned right back to a single leader. The pruning of raspberries depends on whether they fruit once or twice a year. If they fruit twice then cut the fruiting canes back to below the wood that has fruited then they will produce a second crop in autumn.

A multi-leader/vase shaped tree is similar to treating each leader in a similar way to the central leader except you remove any inward facing branches.

### Figure 1. Pruning a central leader tree

#### At Planting

As the buds begin to swell, head the tree at 75-90cm above the soil surface.



#### Dormant Pruning

Head the tree at 60-75cm above the highest branch of the first scaffold whorl.

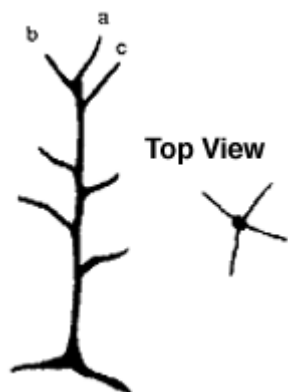


#### Top View



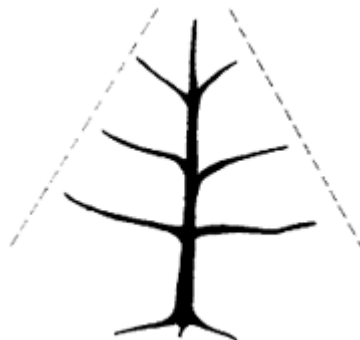
#### First-Year Summer Pruning

Summer prune when new growth is 75-100mm long. Leave **a** as the new leader, and remove **b** and **c**. Select four uniformly spaced laterals for the first scaffold whorl, and remove the remaining lateral branches.



#### After pruning the third year

Three scaffold whorls have been developed with three to four branches uniformly spaced around the tree in each whorl. A light slot of 50-60cm is left between each scaffold whorl. Note the Christmas-tree shape that allows light penetration to the lower branches and interior of the tree.



#### Steps in Pruning:

- Leave only one trunk for the central leader.
- Remove branches with crotch angles less than 60 degrees.
- Remove all branches directly across from one another on the leader.
- Space lateral branches uniformly around the leader to prevent crowding as the limbs grow in diameter.

### Open Centre or Vase Training - Peach, Nectarine, Plum

With the open centre system, the leader is removed, leaving an open centre. Instead of having a central leader, the open centre tree has 3 to 5 major limbs, called scaffolds, coming out from the trunk. This training system allows for adequate light penetration into the tree, which minimizes the shading problem prevalent in higher vigour trees such as peach.

#### At Planting

At planting, peach trees should be set so that the graft union will be 50mm above the soil surface. As the

buds begin to swell, the unbranched trees (whips) are generally headed approximately 75 to 85 centimetres above the soil surface. As discussed with the central leader system, new branches will come from the buds that are 15-25cm below the heading cut.

Trees that are branched at planting are handled differently than the whips. The work that needs to be done under the tree determines the appropriate height for branching, which is usually 60-80cm. Remove branches that are too low. If there are 3 to 4 uniformly spaced branches around the tree that can be selected as scaffolds, the tree is headed just above the highest selected scaffold. Any remaining branches not selected as scaffolds should be removed. However, if there are less than 3 scaffolds the tree should be cut back to a whip and the side branches removed. See Figures 10a and 10b.

### Summer Pruning

After the new vegetative growth is approximately 75-100mm long, it is time to select the shoots that will become the major scaffolds. The lowest scaffold should be 60-80cm above the soil surface to avoid interfering with cultural work under the tree, such as harvesting and weed control. It is best to select 3 to 4 scaffolds that are uniformly spaced around the tree, with wide branch angles, and not directly across from another scaffold. See Figure 10a.



**Figure 10a. Training and pruning young peach trees.**

**Left: Well-branched peach tree to be trained to an open-center system**

**Right: 3 to 5 well-spaced scaffolds re selected and the tree is headed above the highest scaffold.**

---

During the summer, these shoots should be spread out to a 45 to 60 degree angle and held in place with a toothpick or clothespin. All other upright growth should be removed. It is best to come back through every month during the summer to remove upright growth that is shading the primary scaffolds and to make sure that the scaffolds have been spread to a proper angle. Many times the crotch angle is proper initially, but as the scaffolds grow, they turn upright. A spring clothespin placed on or near the end of a shoot will pull the scaffold down to a proper angle. Extreme care must be taken when using the clothespins as weights. Periodic checking is essential to assure that the scaffolds are not too flat.

---



**Figure 10b. Training and pruning young peach trees.**

**Left: Tree after heading, branches lower than 24 inches are also removed.**

**Right: Top view of uniformly spaced scaffolds.**

---

### **Succeeding Years**

After the first year of growth, the primary scaffolds should be selected and properly trained outward. Scaffolds should be headed during the dormant season of the first three years to promote continued lateral branching on the scaffolds and to stiffen and strengthen the scaffold. Scaffolds should be headed to outward growing shoots similar in angle to those being removed. Bench cuts should be avoided. See Figure 11a.

---



**Figure 11a. Dormant pruning a mature open-centre peach tree.**

**Left: Tree before pruning.**

**Right: Heading a scaffold to an outward growing shoot.**

---

If summer pruning is being practiced, undesirable shoot growth can be removed as soon as growth is 10 to 15 cm long. Summer pruning can also be used to direct scaffold growth outward to the desired growing points instead of waiting until the dormant season.

For bearing trees, the goal of dormant pruning is to remove vigorous upright growth on the scaffolds and trunk that was not removed during the summer. See Figure 11b.

---



**Figure 11b. Dormant pruning a mature open-center peach tree.**

**Left: Removal of vigorous upright shoots in the center of the tree.**

**Right: Tree after pruning.**

---

The upright growth left in the tree during the growing season may shade out lateral growth near the trunk. This shading causes lateral fruiting wood only on the ends of the scaffolds, which results in broken scaffolds under a heavy fruit load. It is best to keep the fruiting wood on the scaffolds as close to the tree trunk as possible to reduce tree breakage and to produce the highest quality fruit.

Also, during the dormant season, damaged, dead, and diseased wood, such as cankers, should be removed from the tree. Shoots with shrivelled and dried fruit from the previous season, called mummies, should also be removed from the orchard to reduce disease pressure for the coming season.