

## Pruning citrus trees

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Citrus trees are pruned in order

- to allow light penetration into the canopy;
- to prevent crowding of main scaffold branches and to remove branches which cross;
- to remove or shorten water shoots to prevent them from becoming too dominant;
- to allow air circulation and access under trees (skirt pruning);
- to increase fruit size; and
- to prevent fruit damage due to limb rubbing.

Avoid over pruning. The leaves are the manufacturing part of the plant - removing too much of the canopy will reduce tree growth and crops. Citrus bark burns easily if over exposed to the sun.

### Hand pruning

*Initial heading* at planting will balance top growth in relation to the root system. Branching should not be allowed to occur on young trees until they reach a height of 500 to 600 mm. Young trees should have 200 mm of straight trunk above the bud union before branching occurs. Heading at this height will reduce the amount of time spent on skirting in later years.

*Main scaffold branches* should be staggered as too many branches initiated in one spot can cause crowding and weakening in later years. Aim to maintain about eight main scaffold branches as dominant limbs, once established. Prune subsidiary shoots from the main scaffold branches to reduce competition. Select the more horizontal shoots as fruiting wood.

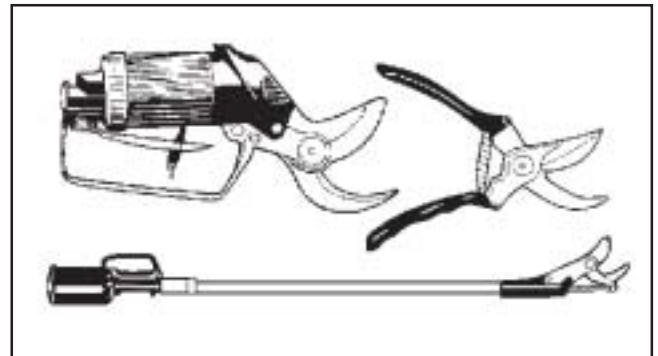
*Thinning out* of branches as trees get older allows light to penetrate into the centre of the tree. This helps to maintain fruit production inside the canopy, as well as on the periphery of the tree.

*Chunk pruning* on older trees allows light into the centre of the tree. In hedgerow plantings, remove a whole scaffold limb on opposite sides of alternate trees. This allows access for pickers into the inside of the tree. The extra light also improves the colour of internal fruit.

Some growers remove a large scaffold branch from a different section of the tree every two to three years. In other areas where trees are more widely spaced, a large

scaffold branch on the north side of every tree is removed to improve access and to increase light penetration.

*Skeleton pruning* is normally a last resort with old trees to get a few more years from them. Prune in autumn and cut back all shoots, leaving only the main scaffold branches. The scaffold branches should be whitewashed with a lime mixture or watered down white acrylic paint to protect the bark from sunburn until the tree refurbishes itself.



Three types of secateurs.

### Skirt pruning

Skirt pruning (removing low hanging shoots) has the following advantages:

- better air movement under the trees;
- easy application of below-tree herbicides and fertilisers;
- reduced access into the tree for insects and pests such as Fuller's rose weevil and snails;
- clear throw of irrigation water from mini sprinklers and ease of checking on the operation of mini sprinklers and drippers;
- no splashing of soil borne fungi into the canopy from rain or irrigation; and
- better access when harvesting.

Mature trees should be skirted to a height of at least 75 cm to allow for branches dropping when the fruit is on the tree. Machine skirting is quick and easy.

### Important Disclaimer

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Skirting is necessary only every two to three years and should be carried out straight after harvest on navels and mandarins. Skirting of Valencias is more difficult due to the time the trees are carrying two crops. Some crop loss is inevitable whenever Valencias are done. Skirting in October or November after fruit set is probably the best option.

## Machine hedging - side hedging and flat topping

With increased plant density and hedgerow plantings, machine pruning is becoming more necessary to save time. There will always be some crop loss from hedging. The benefits of improved access and increased fruit size have to be weighed against the crop loss and the cost of the operation.

*Side hedging* can be done at an angle of 15° to 25° from the vertical to allow better light penetration to the lower parts of the canopy.

Trees can be hedged at 25° to form a triangle shape and then *flat topped* (Figure 1).

If side hedging at 15° from the vertical, the trees also need to be topped from both sides at 30° from the horizontal to allow light penetration to lower parts of the canopy (Figure 1).

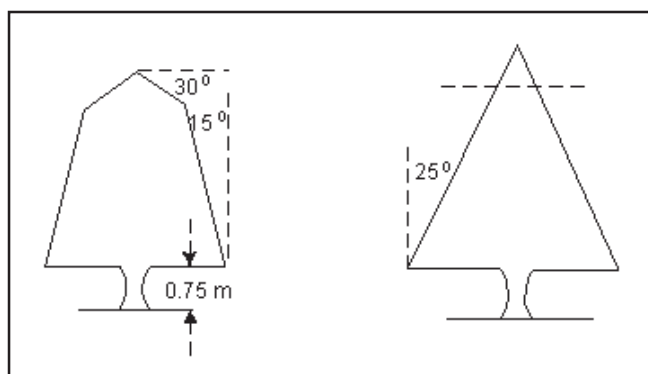


Figure 1. Two styles of side hedging and flat topping.

Machine pruning can be carried out over a three-year period - prune one side one year, the other side the following year and the top the year after. This reduces crop losses in any one year.

Alternatively, hedging of entire trees can be carried out in one year, on every second row.

Some growers carry out side hedging and topping on the entire block in the on-crop year and skirt pruning in the off-crop year.

It is important to begin machine pruning in good time, otherwise, the cuts will be too large and crop losses too high.

## Equipment

Hand or air operated secateurs are ideal for pruning out smaller branches on citrus. Air or hydraulic secateurs on extension poles are also available for pruning large trees and to reduce ladder work or cherry picker work.

Small circular saws or chain saws which are air or hydraulically operated on the end of poles are also ideal to save ladder work and when removing heavier wood.

Banks of circular saws are used for heavy cutting of sides and tops of trees. Figure 2 shows a bank of circular saws for hedging. Figure 3 illustrates a bank of circular saws in the skirting position.

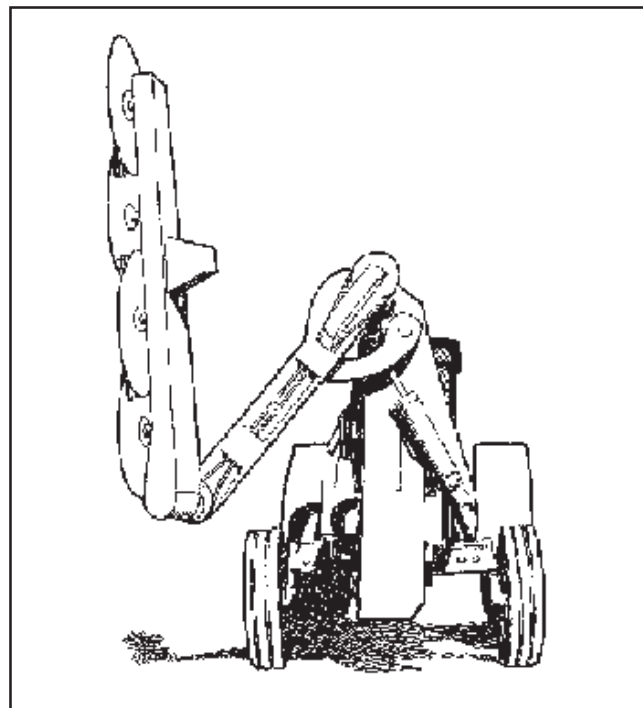


Figure 2. A bank of circular saws for hedging.

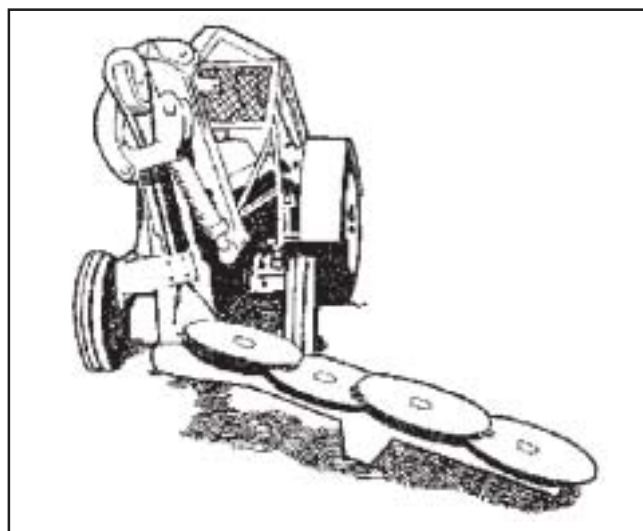


Figure 3. A bank of circular saws in the skirting position.

## Further reading

- Moulds, G. 'Pruning citrus trees' (Agdex 220/23) Department of Agriculture, South Australia.
- Gallasch, P. 'Controlling citrus tree size and shape' (Agdex 220/25) Department of Agriculture, South Australia.