

## How to write your own pruning rules

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It is important that growers are able to communicate clearly and concisely to all staff on how to prune their orchard. Pruning is a skill that develops the more time one observes and studies trees. In today's economic environment, we often don't have the time needed to properly learn these skills and therefore training becomes even more important. It is easy for experts to call in to an orchard and prune one tree and think everyone watching has grasped the concepts of pruning. This often isn't the case and when I drive around the districts, I see large variations in pruning styles and successfulness. This hand-out is designed to help you to write your own pruning rules and give you some useful examples of pruning rules that you can adapt or use for your orchard and staff.

### Why have pruning rules?

Having a different pruning style is okay providing you achieve a consistent pruning job that meets your needs. Anything less than consistent hinders the ability of the orchard to grow the desired fruit quality, quantity and sized required. Rules can easily be adapted to suit varieties and growing conditions. Often the most difficult task in pruning is making sure all staff understand exactly what is required of them. Many pruning staff may be new to orcharding itself and not have the necessary skill or experience to complete the task to the standard and consistency required. Often staff only stay a short while and are replaced with new staff that need training. Keeping this training simple makes it easier and more productive for all concerned. Language barriers can also make pruning training difficult. Providing them with simple pruning rules lessens the room for error and assists them to gain confidence and speed quicker, making them more productive.

Experience has taught me that if I can get staff to prune to 95% of how I would like the job done and quickly, then that's acceptable. I have found that trying to achieve the last 5% causes all the heartache and is the hardest to achieve. Some orchardist/staff are capable of achieving the final 5% and I can spend time with them to do this, but mostly as orchards get bigger and the pressure comes on to prune more cost effective, and time runs out, achieving a consistent 95% of the targeted pruning is acceptable most times. I have found trying to get everyone to achieve the last 5% often costs more than the first 95%. Many staff can get confused and loose the initial goal, therefore simpler is better.

### How to make them memorable

The fewer the rules, the easier they are to learn and uptake by staff. Over the years I have learnt that memorable pruning rules tend to stick in staff minds where as complicated explanations on how a tree will react to a pruning cut should be pitched more at the owner or orchard manager, as they are responsible for formulating the pruning plan. They will have the bigger picture in mind and once they agree on the desired pruning strategy for each block and variety, they can then sign off on the overall pruning plan. Many pruning staff are only there to earn money and are mostly not concerned about the wider principles involved in the art of tree pruning. Also if staff are inexperienced, it is easy to overload them with detail that they are not ready for and this detail distracts them from their job of pruning. Any staff interested in the wider pruning principles can be taught once the basics are mastered. So to save time and money, keep the pruning rules simple.

## Examples of successful pruning rules

I try to keep my pruning rules to no more than five, and often I can cut these down to three or four key rules in some blocks and for some varieties. The fewer the rules, the better, as they can be learnt and followed. This also avoids confusing staff with too much information.

The following are just some of the rules I use for pruning. Not all are required but each has their place depending on the type of trees I encounter.

1. Pruning rules for a calm intensively planted spindle orchard (2850 trees/ha)
  - a. Variety Jazz
    - i. Cut out the 3 strongest branches (targeting 19 left in tree)
    - ii. Cut out all 12 and 6 o'clock shoots
    - iii. Make all branches long and skinny (remove side wood longer than secateurs). Don't cut if no buds
    - iv. Paint all cuts on trunk
2. Pruning rules for Gala tree planted on vigorous rootstock (4.5x 2.5m)
  - a. Bottom tier
    - i. Cut out all 12 and 6 o'clock shoots
    - ii. Keep fruiting wood in one layer
    - iii. Cut one big side branch per quarter
    - iv. Space grey wood to secateurs
    - v. No shortening
  - b. Tops
    - i. Cut out all shoots on trunk up to 1.0 metre above bottom tier
    - ii. Cut out 2 largest branches,
    - iii. Cut out all 12 and 6 o'clock shoots
    - iv. Remove 2/3 of all annual shoots from the top trunk (spiral them and space them around trunk)
    - v. Cut out 50% of biggest side branches (aim to make branches skinny and pointing at the ground) don't cut if no buds left.

Final check is to count the buds to see targets are being met. Adjust pruning to achieved targeted bud numbers. Bud counts can be entered into the OrchardNet program for easy tracking and comparison in the future (see Figure 1).

Company: Sunpeach Property: Sunpeach Te Aute Block: Jazz Te Aute		<b>Winter Pruning Report</b> Season Ending 2013									
Blockname	Ssn	Gross Kg/ha	Class1 Kg/ha	Fruit Harvested Weight (g)	Fruit /Tree	TCA Harvested Fruit /TCA	Buds/ Fruit	Target Buds/Tree post-prune	Monitor Buds/Tree	Actual Buds/Tree post-prune	
<b>Sunpeach Te Aute</b>											
<b>Jazz</b>											
Jazz Te Aute	2013	69,565	59,006	165	170	-	-	2.0	339	-	
	2012	53,739	49,977	160	135	17.0	7.9	2.1	284	260.00	
	2011	42,062	35,700	157	108	15.6	6.9	1.9	205	210.00	
	2010	45,217	35,981	156	117	10.0	11.8	1.5	175	65.00	

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Figure 1 Pruning Plan Jazz TeAute



## Pruning Rules

Of course before you start to prune, a thorough explanation of what these rules mean must be given to all pruning staff.

One rule that makes up as much as 60% of most pruning cuts in many apple and pears trees is the first rule, “cut out shoots growing at 12 and 6 o’clock”. By this I mean if you look down the end of a branch, any shoots that start growing on the top (or directly underneath) should be cut out. These 12 o’clock shoots are normally too vigorous and if left cause layers to form in the branch which increases shading and decreases fruit quality. The same can be said about the 6 o’clock shoots or buds as they generally suffer from shading and are usually poorer quality fruit come from.

The following table gives some of the rules I use that you might find useful and an explanation of what they mean. There is space left to write any new rules you can think off at the end.

Pruning rules	Explanation
<b>Cut out 12 and 6 o’clock shoots</b>	Remove all shoots growing on the tops and underneath of branches
<b>Leave in the grey wood</b>	Particularly useful when targeting the annual shoots for removal as they are often red or greener in colour. The best fruiting wood is often greyish in colour and has more fruit buds.
<b>Cut out ..... (number) of the biggest branches in the top of the tree</b>	Specify how many big branches are to be removed. Target biggest strongest branches with the most growth/shading
<b>Cut out branches holding hands</b>	If a branch is touching a branch from another trees in the top, this shade affects fruit below, therefore cut one of them out. Don’t only prune the tree but also how it interacts with its neighbour.
<b>Aim for 18-20 branches left in tree</b>	The number of branches required in each tree. Cut out surplus branches using a spiralling technique.
<b>Maintain V of sunlight into the middle of the tree</b>	Remove bigger branches in the top so that sunlight can get into the lower tiers. An open V must be maintained to about half the tree height.
<b>Lazy man pruning</b>	Often one big cut with a saw to remove a large vigorous branch is better than doing many smaller cuts
<b>Cut out all shoots on the trunk</b>	Specify the height .....(m) from the base tier to the next tier that all shoots should be removed on the trunk.
<b>Only leave 1/3<sup>rd</sup> (or specify no.....) of the annual shoots in the top</b>	Not all shoots are required for replacement branches, therefore eliminate the surplus shoots.
<b>Aim for calm tree</b>	Long wood pointing at the ground with plenty of fruit buds
<b>Prune for .....number of fruit buds</b>	Specify how many fruit buds to leave in on the tree and or branch
<b>Fruit growing business -not the firewood business</b>	Aim for fruit buds instead of empty wood that has had all the buds removed
<b>Prune branches long and skinny</b>	Remove shoots and side growth longer than secateurs. This reduces shading lower down in the



	tree
<b>Spiral branches around and up the tree</b>	Branches need to be spread evenly around and up the tree to ensure dappled sunlight gets to all buds and fruit in the tree. Think about the neighbouring tree as well.
<b>Space wood to secateur length (150mm)</b>	Use the secateurs to measure the spacing of fruiting wood for small fruited varieties e.g., Gala
<b>Space wood to a hand span</b>	Use a hand span to measure the spacing of fruiting wood for varieties that suffer biennial bearing, e.g., braeburn
<b>Shorten wood no more than 1/3 from the bend to the end</b>	This stops aggressive shorting of branches
<b>Only shorten wood pointing at your feet/boots</b>	Eliminates shortening of horizontal and/or upright wood.
<b>Big and strong doesn't belong</b>	Remove the strongest shoots and branches to reduce vigour
<b>Paint all major cuts</b>	Use suitable pruning paint to protect major cuts

Blank space for notes or additional rules.

**Write your rules and definition here**

**Block and variety**

#1.

#2.

#3.

#4.

#5.

**Block and variety**

#1.



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#2.

#3.

#4.

#5.

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## Conclusion

As with any rules, it is the owners or managers responsibility to choose the correct ones, and then see that staff are trained properly and then supervised to see they are carried out correctly. One problem I often face when training pruners is to break experienced pruning staff of bad habits they have acquired over many years. These bad habits often create more problems (e.g., aggressive branch shortening creating excessive shoot vigour). I have found that having a few simple rules makes it easier to rein in these staff by reiterating that only prune as per the simple rules you have provided them. Any pruning cuts that are not in the rule sheet are not allowed. Again targeting a 95% pruning job is often better and more easily achievable than aiming for 100%. Hopefully if you choose the correct rules that suit your orchard, varieties and growing style, you will also find that pruning becomes more enjoyable and easier for everyone.

