

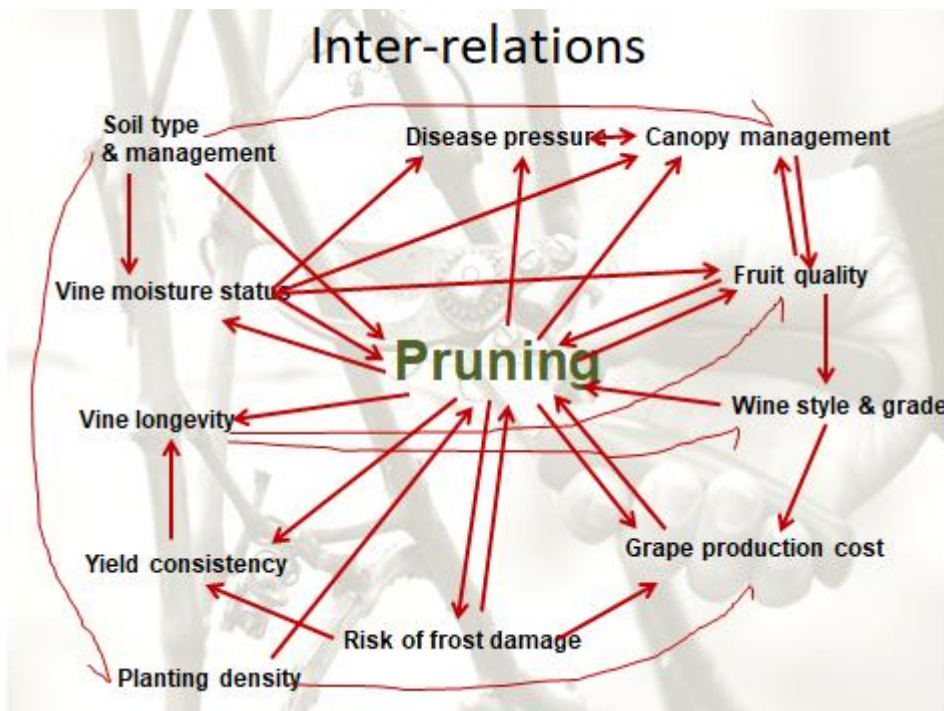
## Winter Pruning Of Grapevines – Fact Sheet

### Background:

Winter pruning of grapevines is a task that must be carried out every year during the dormant winter period. It is considered to be the most important task carried out during the vineyard year, because the way in which the vines are pruned has a strong influence over the following:

- The level of vigour with which vegetative growth is produced during the following summer season
- The potential level of crop produced
- The potential ripeness grape levels which can be achieved
- Level of pressure from fungal diseases during the summer season
- The cost of grape production
- The risk of crop loss through spring frost damage
- The productive lifespan of the grapevine

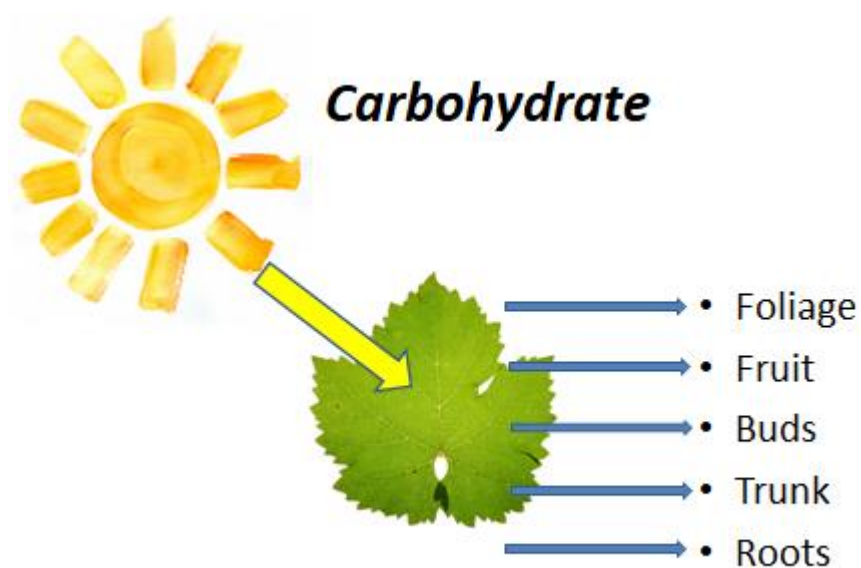
Winter pruning is very closely linked with most other tasks carried out during the vineyard year, and this should be taken into consideration when making decisions about how to prune your vines. The diagram below shows the lines of influence between the numerous tasks and the issues which prevail in a vineyard every year:



## Grapevine Physiology

In order to understand the implications of the way we prune grapevines, it is important to understand a little about the physiology of the plant. This refers to the basic biological functions that the vine performs.

- 1) Carbohydrate Distribution. The grapevine leaves are like solar panels. They absorb sunlight (solar energy) and convert this into carbohydrate. The vine then distributes this carbohydrate internally, apportioning it to its various organs, such as trunk, roots, buds, grapes etc. The diagram below shows the main organs which use the carbohydrate generated, and in which order – starting with the foliage:



We can see from the above diagram that the more permanent organs within the vine are the last to receive carbohydrate energy. If there is too much demand from foliage and fruit, then the buds, trunk and roots do not receive enough – and this has a negative effect on long term yields and on longevity of the vine.

- 2) Drying out of internal vascular tissue, after pruning cuts are made. Whenever a the vine is cut during pruning, an area of 'die-back' tissue forms at the face of the cut and extends down into the vine. This is unavoidable as vines must be pruned every winter. If the cuts are made in a random pattern over a number of years, then a large area of internal tissue will die off and thus prevent the sap flowing from the roots, up the trunk and into the green shoots. If the vine is pruned carefully and cuts are restricted to 'younger' wood, then the level of die-back will be much reduced. This will help ensure a longer productive lifespan. More detailed information on this method of pruning can be found at [www.simonitesirch.com](http://www.simonitesirch.com)



The vine on the left has been pruned in a random manner, and a large area of die-back tissue has formed on the left hand side. No sap can flow through this area now, as it is dead tissue. The vine on the right has been pruned in such a way that only small cuts have been made, and restricted to young wood (max 2 yrs old) into.

This is known as the Simoni & Sirc pruning method, and maintains an uninterrupted flow of sap from the roots, up the trunk and into the foliage.

### **Pruning During The Establishment Phase**

Year's 1 – 3 are a vitally important time for the young vines, as they concentrate on growing the root system that they need to produce fruit over the coming years.

Very often, growers attempt to force the vine to produce too much fruit too early in the life of their vines. This is understandable, as they wish to generate a financial return after the initial capital outlay of planting a vineyard. Over the long term it is far wiser to introduce the vines into cropping gradually:

- Winter of Year 1 (Entering Season 2) – cut the vine back down to a 2 bud stub
- Winter of Year 2 (Entering Season 3)– Form the trunk of the vine. Allow 3 – 4 shoots to grow from the top of the trunk during season 3. This will generate a small first crop, and allow the vine to continue growing its roots and building up a reserve of carbohydrate energy in it's newly formed trunk.



Left: This vine was cut to form a trunk at the end of Yr 2. It has grown strong shoots and produced a good crop. This photo taken during summer of Yr 3

It offers excellent quality fruit bearing canes for it's 4<sup>th</sup> season. A single cane will be laid down, and two renewal spurs (of 2 buds each) will be retained also.

By not laying down a fruit bearing cane at the end of Yr 2, the vine has been gradually introduced into cropping.

- Winter of Year 3 (Entering Season 4)



The grey / brown vertical trunk was formed at the end of Year 2, and has matured during the Season 3.

The top three shoots on the trunk were allowed to grow during Season 3. The top shoot has now been used to form a fruit bearing cane. The bottom shoots have been used to form renewal spurs on the left and right hand side of the trunk

### **How Many Buds To Leave At Pruning Time**

Once your vines are established, the simplest way to gauge how many buds to leave when pruning is to count the number of strong shoots which have grown the previous season. This is the best indicator of the vine's capacity for growth.

For example: If you can count 10 strong shoots on your vine, then aim to grow 10 shoots again during the next season – as this is what the vine is showing it has the capacity to produce. This



requires approximately 12 buds to be retained – allowing for some being removed during shoot thinning in early summer.

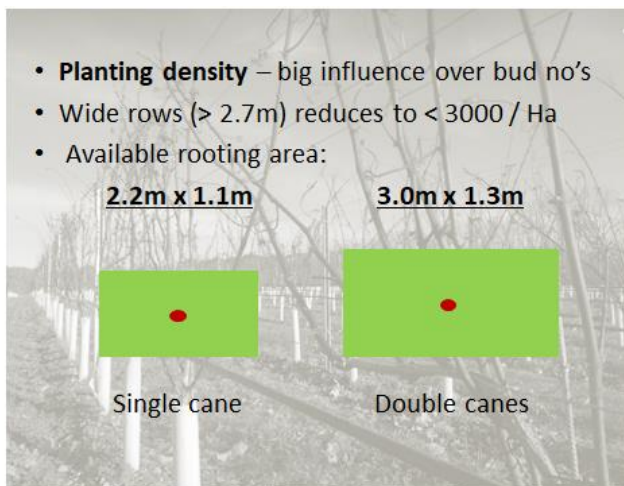
This is a simple method which very quickly becomes second nature when pruning.

It is known as '**Charge Counting**'

Avoid at all costs any method of calculating bud numbers which involves a 'blanket treatment'. By leaving the same bud number on all vines, the weak vines will get weaker and the stronger vines will become over vigorous.

### **Single Cane or Double Canes?**

A fruit bearing cane should be no longer than 12 buds. An important decision (after having performed a Charge Count) is whether to leave 1 or 2 fruit bearing canes. A good guide is the density of plantation – as this determines how much area of soil each vine's root system has to exploit. The diagram below shows how wider row vineyards with longer intervals between plants can sometimes carry two fruiting canes, whilst more densely planted vineyard are generally better pruned to a single cane.



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