

Root pruning and covercrops combine to control vigour

In its regular viticulture column, the AWRI offers the latest advice on how to keep Chardonnay growth down, and identify the difference between clones, mass-selection and late-season hedging.

There appears to be more interest in mass-selected clones than imported clones in my region because they are claimed to produce better wine. What is your opinion?

It is incorrect to describe these mass selections as clones. A clone, by definition, must be able to be traced back to a single source vine, i.e., every single vine of Chardonnay I10V1 can be traced back to a single source vine in California. Mass selections are most often the result of an initial collection of cuttings from one or more vines in a vineyard of good reputation; for example, the so-called 'Reynella clone' of Cabernet Sauvignon or the so-called 'Lovedale and Drayton clones' of Semillon.

The reputation of the original source vineyard, in these cases, may be entirely the result of a good site – the genetic status

of that vineyard may not be superior to another vineyard.

True clones are the result of a clonal selection program that has verified the genetic superiority of the clone during the evaluation process. Some will claim that they use local mass selections because they are better suited to local conditions than a clone originating from another region. However, there is no evidence to support this assumption.

Whether mass selections produce better wine than selected clones or unselected material is a matter of opinion. There appears to be no evidence that supports this proposition. In summary, the use of one or more 'true' clones for a given variety is likely to consistently result in better productivity and wine, and pose less

risk of harmful virus diseases, than the use of mass selections.

As my Shiraz vines have had a severe downy infection with defoliation and bunch damage, I am considering hedging the current shoots back to the basal one to three buds in the hope that they will reshoot and produce a crop later in the season. Will this work, since it is now early January?

I would not recommend this for several reasons. The latent buds at the base of the current shoots are now likely to be in a state of 'organic dormancy'. This means that it doesn't matter what you do to them, they will not burst. Had you done this in early December, the latent buds would have been in a state of 'conditional dormancy' and, thus, could have been forced to burst if the shoot tips, bunches



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and lateral shoots had been removed – this is the principle behind the practice of double pruning.

Hedging in January may stimulate lateral shoot growth and you may get some 'second crop' bunches developing on those lateral shoots. However, the yield is likely to be low and it may not ripen before the end of the season. Furthermore, this second crop will impose an added stress on these vines and further diminish the carbohydrate supply that has probably been impaired by the defoliation. For further information, refer to the Vitinote on bud dormancy at www.awri.com.au/industry_support/viticulture/grapevine_phenology/.

What is the best way to control vigour in a block of Chardonnay on a site with deep fertile loamy soil in the Alpine Valleys? I have heard that root pruning may be worth trying. In many regions in Australia, a deficit irrigation strategy is usually the best method to control shoot vigour. However, in your environment, this is unlikely to be successful in most seasons due to the combination of high growing season rainfall and soil with high water-holding capacity. Either root pruning, or a covercrop, or even a combination of both may be worth trying.

For root pruning you need to use sharpened blade(s) attached to a tool bar. In our trials in the Barossa in the late 1980s, we found that it was best done at or soon after budburst when soil is moist. Root prune about 30-40cm out from the vine row on both sides of the row and as deep as possible – you are unlikely to get much deeper than 40cm, even with



a weight on the tool bar. You may have to repeat every season because the effect may be short-lived.

Before applying root pruning, use a soil pit to determine root distribution because the effectiveness of the technique is likely to depend on the proportion of roots that access water from the mid-row. Also, there may be a risk of fungal infection via the root wounds in some soil types.

Covercrops that persist well into the growing season may also be useful because they compete with the vines for water and nutrients. Deep-rooting perennials are likely to be most successful. A cocksfoot/ryegrass mixture and chicory have both been trialled on a deep black clay soil at

Coonawarra with some success (Proffitt, T. (2000) Aust Vit. 4(6):45-61). The cocksfoot/ryegrass mixture developed a dense root mass close to the soil surface whereas the chicory developed a deep taproot system. However, chicory should be used with caution because it is an aggressive species and may be difficult to eliminate from vineyards. It may also act as host for unwanted insects. Other vigorous grasses such as phalaris could be considered.

Ask the AWRI is a monthly column, which focusses on viticulture and oenology issues, in alternate months. AWRI winemaking and viticulture specialists are available to help Australian wine and grape producers. Call on 08 8313 6600 or email at winemakingservices@awri.com.au **GW**

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