



Pruning: The right cuts to improve vine health and longevity

Pruning

Sam Bowman reports on the Guyot/Poussard and Soft Pruning techniques, exploring the origins from Frenchman Charles Guyot 150 years ago and the recent work of Italian Marco Simonit (pictured above).

VINEYARD OWNERS, managers and all those involved at the hands-on level in Australian vineyards are well aware of the effects of grapevine trunk diseases, having watched firsthand the available spurs on prized vineyards decline over the years. Many vineyards planted in the 1990s boom are either being pulled and replanted, or undergoing a form of remedial surgery to restore them to a more viable commercial production.

But, what if there was a method of pruning that could minimise the impact of this decline and possibly double the life expectancy of the vineyard?

First popularised by Frenchman Charles Guyot in the 1860s and later by Raymond Lafon in 1927 (later named Guyot/Poussard after the original developers), pruning in regard to sap

flow or 'soft pruning' is nothing new by any stretch.

Soft pruning more recently gained prominence through Simonit & Sirch, a group of Italian self-proclaimed 'pruning guys' who offer a Masters degree in grapevine pruning and consult to many producers around the world.

Simonit & Sirch promote their own version of the Poussard method which they claim can double the life of a vineyard and dramatically reduce the incidence of grapevine trunk diseases. I highly recommend looking up their YouTube channel (not only are the videos informative, but I could bet no-one has ever seen a man caress a grapevine quite like Marco Simonit).

While there is no concrete scientific evidence on the sap flow theory, the

method has shown to reduce the effects of Esca dramatically (Geoffrion et Renaudin 2006, saw a 50% reduction of Esca-affected vines using Poussard pruning versus standard double Guyot).

The use of small cuts where possible, leaving enough wood to account for desiccation at the wound site and respecting the natural flow of sap through the vine all contribute to less restriction on sap flux and, in theory, create a healthy vine with less entry points for grapevine trunk diseases pathogens.

The Guyot-Poussard method adapts a horizontal growth pattern along the cordon wire which maintains the same sap flux every year by developing cuts on the upper part of the cordon only. Research has indicated that each cut made creates a 'cone of desiccation' 1.5 ▶



The Place of Changing Winds, a close-planted vineyard in Victoria's Macedon Ranges.

times the size of the cut itself (Crespy 2006). With this in mind, much of the decline on tightly wrapped spur pruned cordons could be a combination of both grapevine trunk diseases, and desiccation of xylem vessels brought on by large cuts made at pruning.

AUSTRALIAN EXAMPLES

On the home front, a handful of Victorian producers are adapting the principles of promoted and even sap flow pruning to their young vineyards in the hope that they won't run into the same issues that have troubled the majority of the wine-producing regions in Australia.

Beechworth growers Tessa Brown and Jeremy Schmolzers' site in Thorley, close to the town of Stanley, comprises Shiraz, Chardonnay, Riesling and Nebbiolo closely planted at 5350 vines per hectare. Setting the vineyard up in a unilateral Guyot style, Brown has begun using the Poussard methods in her own vineyard due to her exposure to international winemaker Tom Myers, who splits his time between Victoria, Burgundy and Barolo, regions synonymous with these pruning techniques.

Brown has developed her own view on pruning over the years. Spending some time working with the 30-year-old

vines of the Sorrenberg vineyards in Beechworth got her thinking about sap flow management.

"Pruning there got me to think about assessing a vine carefully before making big cuts; thinking about the vine patterns of sap flow and looking where the fresh wood was coming from an encouraging it in the right shape," Tess Brown said.

"I still made big cuts where I felt necessary I guess, but we were also about painting wounds twice a day, and thinking about sap flow pattern. And we never pruned on drizzly or rain days. That thought process, along with the Poussard principles, is now shaping how I set up vine form in our own vineyard."

The Poussard method emphasises the bilateral flow of sap through a vine. Working unilaterally as is the case in Brown's vineyard, this still needs to be accounted for.

"Poussard has brought into sharper focus looking at the vine as a thing with bilateral sap flow, even if we are working unilaterally," Tessa Brown said.

"Where a few years ago I may have not left a replacement spur if one wasn't in an attractive spot, and simply let a basal bud on the fruiting cane make the replacement cane in a more desirable zone, now I'm more careful to ensure leaving replacement spurs regardless of attractive location to keep the sap flow balanced, and I'm leaving ones that are preferably outward facing as per the Poussard philosophy".

Discussing desiccation at wound sites and leaving protective wood, Brown opted for clean cuts and painting twice daily to mitigate the risk of infection, rather than leaving protective wood as per the Poussard/Simonit & Sirch method. She admits she is ready to be proven wrong in time as to whether painting and clean cuts will mitigate the amount of dead wood which could accumulate and inhibit sap flux.

NOT YOUR AVERAGE AUSTRALIAN VINEYARD

In the tiny area of Bullengarook just outside the township of Gisborne in Victoria, is The Place of Changing Winds. Owned and run by Bibendum Wine Company managing director Rob Walters, it is not your average Australian vineyard. Planted exclusively to Pinot Noir and Chardonnay at density ranging between 12,000 to 33,000 vines per hectare, organically cultivated and dry grown save minimal amounts of irrigation in extreme heat events, the site is as close as possible to the Cote d'Or in Australia.

Not surprising, Walters' pruning



One of Tessa Brown and Jeremy Schmolzers' vineyards in the Beechworth region.

ideology and cultivation principles were developed through his travels to Burgundy, influenced in particular by Olivier Lamy, a pioneer of the Poussard method in the region and, later, through the writing of Francois Dal.

"I realised immediately that this technique had enormous benefits both in terms of the health of the vine, but also in terms of preventing wood disease which, in recent times, has been treated purely symptomatically rather than addressing the cause of the problem which is the build-up of deadwood in the plant and the blockage of sap flow," Walters said.

Two methods of vine training are employed in Walters' vineyard: unilateral Guyot for the lower density parcels (12,000 vines/ha); and a vertical bush vine configuration for the higher density parcels (33,000 vines/ha).

The pruning method for both is a traditional Poussard method, as Walters explains:

"We are looking to structure the plant to minimise dead wood or dieback and allow a continuous flow of sap along the external edge of the plant.

"To this end, we are only cutting one-year-old wood with the spur position always on the exterior of the trunk, so there is a smooth exterior flow of sap.

"When we make pruning cuts we always aim to maximise the distance from the cut to the retained bud to allow for the injury site to be clear of the retained bud.

"We look at the vine as a whole and work out what is the best way for it to be pruned to this end – the maximum sap flow from the roots all the way to the top of the plant."

Although it is too early for Walters to discuss the long-term effects on vine health and the mitigation of grapevine trunk diseases on his own vineyard, the evidence in both Rob's own observations throughout France and many European studies on the decline in Esca virus is clear.

THE BATTLE AGAINST GRAPEVINE TRUNK DISEASES

Establishing a vineyard from year zero to minimise the effects of grapevine trunk diseases and promote natural sap flow is a less overwhelming task than trying to retrain the habits of a gnarly old 'boom era' vineyard already suffering the effects of mechanical manipulation.

There is, however, another part of the Poussard method that is a little more drastic than the pruning itself, 'Curettage'. The method, traditionally employed on vines affected with the Esca virus involves sawing out the desiccated central sections of the vines trunk and leaving the external cambium (which contains the vital xylem and phloem vessels) allowing the vine to return to a more fluid sap flux and engage conversion to a traditional Poussard treatment.

The battle for large scale vineyards in the fight against grapevine trunk diseases rages on, as Walters observes:

"The challenge is going to be the requirement to treat each plant individually, as is required with this approach."

Viticultural consultant Tim Brown, who has been instrumental in promoting the Poussard method in many Victorian vineyards including Rob Walter's site, emphasises the usability in established

sites. Brown attended the recent visit in Australia by Simonit & Sirch and he sees their soft pruning methods for mature vineyards as "simple and logical".

"We have been using this system for a couple of seasons at Balgownie, in Bendigo, (48-year-old spur pruned vines) and at Ten Minutes by Tractor, in Mornington," Tim Brown said.

"It's too early to draw any definitive conclusions, however, it's an easy system to use and requires only slight adjustments to technique. The main change we made was one of mindset.

"We are not too focused on always selecting the lowest spur site. This avoids the larger pruning wounds with the added benefit of simplification of shoot thinning due to slightly taller spur cordon as, over time, the spurs tend sit on top of short stubs of older cordon pruning wood rather than hard against the cordon," Tim Brown said.

Looking comparatively at the fight against Esca in European grape production areas, it is reminiscent of our own industry's struggles with Eutypa and Botryosphaeria. Using Poussard methodology at pruning time and giving some thought to sap flow could go a long way for Australian vineyards.

I tell all my clients that in viticulture, there are no silver bullets to cure any problem. But any small gains that can be made in different areas will not only improve vine health, but also the quality of the fruit you are producing.

A combination of existing practices in mitigating the effects of grapevine trunk diseases, with some tweaks to pruning technique could be the extra one per cent your vineyard needs. Happy pruning. **GW**