NEW CLONAL MATERIAL AND VARIETIES – PROSPECTS FOR THE NEW ZEALAND WINE INDUSTRY

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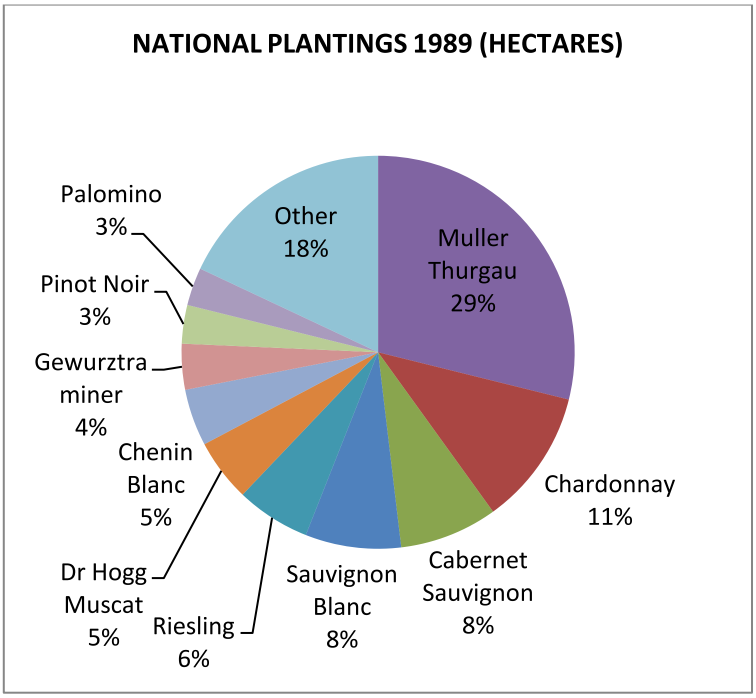
It has been over 20 years since the New Zealand wine industry first encountered a serious challenge in relation to the mix and volume of national grape resource. The industry surpluses of the mid 1980's precipitated the Government funded vine extraction scheme whereby growers were paid grants of $6,175 per hectare to extract vines from production. The response by the industry was such that 1,515 ha of wine grapes were removed at a cost of over $9M and the total industry planting was reduced from 5,800ha to 4,300 ha, a reduction of almost 26%.

While at the time this situation caused considerable angst for grapegrowers and winemakers, this was perhaps the first major nationwide opportunity to significantly shift the varietal mix of our industry, with Muller Thurgau making up over a third of all vines removed. Even less desirable varieties such as Baco 22A, Chasselas and Palomino were also removed.

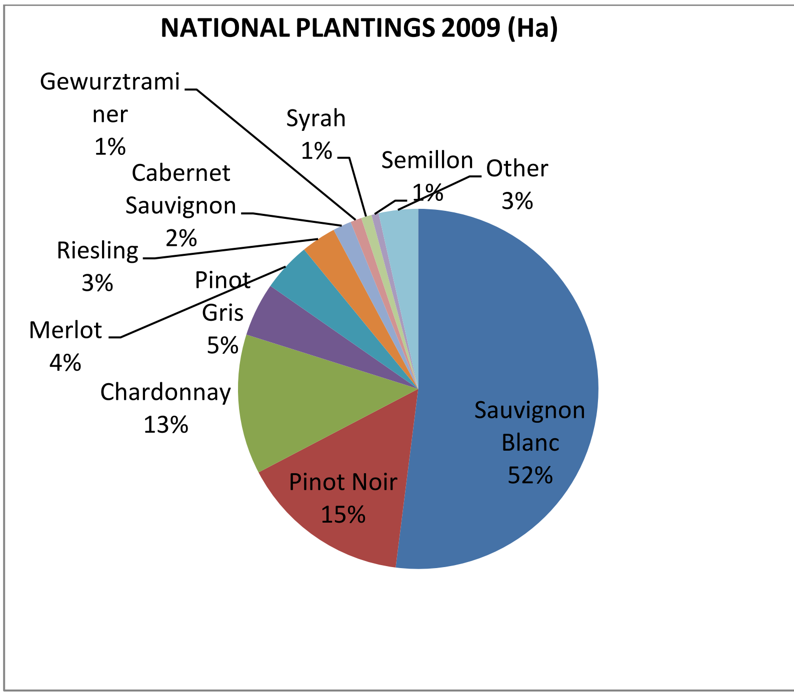
This event, and perhaps even more importantly, the march of Phylloxera throughout our major grape growing regions, allowed us to acknowledge changing consumer trends which led to a significant shift in the national varietal mix.

To put this into perspective, 1989 was the first year that we had accurate survey data for our industry. The following tables and graphs rank the top ten varieties in 1989 compared to 2009.

1989	HECTARE	PERCENT
Muller Thurgau	1,257	29%
Chardonnay	487	11%
Cabernet Sauvignon	351	8%
Sauvignon Blanc	343	8%
Riesling	266	6%
Dr Hogg Muscat	224	5%
Chenin Blanc	204	5%
Gewurztraminer	164	4%
Pinot Noir	138	3%
Palomino	136	3%
Other	784	18%
TOTAL	**4,354**	**100%**



2009	HECTARES	PERCENT
Sauvignon Blanc	16,205	52%
Pinot Noir	4,777	15%
Chardonnay	3,911	13%
Pinot Gris	1,501	5%
Merlot	1,369	4%
Riesling	979	3%
Cabernet Sauvignon	517	2%
Gewurztraminer	311	1%
Syrah	293	1%
Semillon	201	1%
Other	1,101	4%
TOTAL	31,165	100%



These tables and graphs illustrate that from approximately 4,400 ha in 1989, today we have over 31,000 ha in production with four of these original varieties no longer making the top ten. Of particular note is the demise of Muller Thurgau from its number one position in 1989 and the rapid rise in prominence of Pinot Noir to the number two position today. Our industry has become much more focused with the top three varieties making up 80% of national production compared to less than half of our production in 1989.

While the impetus for production change has been driven by a number of events (vine extraction scheme, Phylloxera), the industry has responded well to changing market signals and over the course of many years has proactively pursued the importation and trial of new varieties and clones. This process has been driven by a handful of key people over the course of many years but as an industry we have had an interest in raising the bar in terms of vineyard performance and wine quality and providing stylistic choice for the consumer. There has been a healthy balance between production driven and marketing lead change.

In many cases, the work done to date has been by trial and error. A number of importations have been commercialised but have not been overly successful in terms of delivering what our industry needs (or what consumers want). In some cases the improvement has been incremental, whereas in others there has been a paradigm shift in terms of what we are producing and the subsequent improvement in the quality of the grapes and wine. The Pommard and Dijon clones of Pinot Noir replacing Bactobel clone are good examples of this.

The National Variety Collection today has a comprehensive selection of more than 300 varieties (including hybrids) with many more private importations not recorded. While this sounds impressive, this number needs to be put into context of the estimated 1000 plus grape varieties relevant to wine consumers which are in existence around the world. I would suggest that with only

10 varieties making up 96% of current plantings, it also begs the question as to how well we have evaluated the other 290 importations.

While our own varietal mix is not expansive by world standards, it is interesting to note that globally there has been considerable homogenisation of the main commercial grape varieties.

A quote from Jancis Robinson's book "Vines, Grapes and Wines" states,

"*This systematic inspection of the vine types grown internationally has thrown up a worryingly high number of varieties capable of producing good-quality wine with real character which have effectively become endangered species."*

She goes on to say..

"*This applies particularly to some of the more traditional varieties of Portugal, Spain and Italy".*

So in a number of ways our narrow varietal focus is a risk, but it also provides an opportunity. The chances out there must be good for us to find other varieties, or clones of existing varieties, which are well adapted to our growing conditions. There is an increasing volume of literature which describes these varieties and the climatic conditions to which they are best suited. Research into homoclimes can take some of the guesswork out of this selection process. However, it is all very well to grow new varieties but it can become a significant challenge to sell them as finished wine.

So from an industry perspective, where does our industry need to focus? I believe there are three key areas:

1. Continued experimentation with new varieties
2. Continued importation of new clones
3. Vine breeding

1) NEW VARIETIES

Most of the important varieties we are pursuing successfully today have been described by various people as being part of **the "classical" group of nine.** The varieties making up this list are:

- Cabernet Sauvignon
- Pinot Noir
- Syrah
- Merlot
- Riesling
- Chardonnay
- Semillon
- Sauvignon Blanc
- Chenin Blanc

The NZ Winegrowers Statistical Annual lists the expected producing area from these varieties in 2012 at just over 29,000 ha or 87% of all plantings – so we fit neatly within the global view of production. The only major local variety not listed in this group is Pinot Gris. To me this suggests two possibilities;

-the other varieties do not make wines that are appealing to the consumer

OR

-there is something about the way we present these wines or varieties to the consumer that is not appealing, i.e., a marketing challenge.

I suspect it is the latter and this possibly raises implications for the potential success of new varieties

In spite of this observation, the continued importation of new varieties is vital, albeit unlikely to lead to a major market discovery in the short-term. However we need to be mindful of how quickly Syrah and particularly Pinot Gris have come from nowhere and even more dramatically, how quickly a mainstream variety such as Pinot Noir has increased in importance to our industry, especially when we have identified the need for some degree of diversification from our industry flagship variety, Sauvignon Blanc.

When contemplating where to start, we should be mindful that many of the major success have not been market lead initiatives initially and the creative side of production people- the viticulturists, winemakers and of course the nurseries- must be encouraged to give things a go. This marketing/production collaboration is important, especially in medium sized to larger operations where the marketing person is unlikely to be the winemaker or viticulturist or vice versa.

This creative streak however, needs to be tempered with some commercial realities. Past imports with names such as Bastardo di Menudo, Goldburger (imported 1972) or Jubilaeumsrebe (1972) present significant marketing challenges and would be unlikely to be sought after by consumers. Obviously the consumers' ability to pronounce the name is important. Even more recent imports such as Gruner Veltliner, which could be interesting from a winemaking perspective, may need a marketing makeover and sold under branded rather than varietal labels. There are a few successful non varietal labels/brands in the market place already.

2) **NEW CLONES**

It is through the introduction of new clones of existing varieties where our industry will gain the greatest benefit in the short-term. There has been huge progress over the years with new clones from both a productivity and quality perspective. These clones will most likely come from importation but we should not exclude the option of vine selection in our local vineyards, particularly from older plantings.

Some thoughts on areas of clonal focus include:

- Pinot Gris: There is an abundance of Pinot Gris clones in circulation currently. As this variety increases in importance for the New Zealand industry, further feedback on viticulture and winemaking performance on these clones is required. To date, work done by Riversun Nurseries suggest that ENTAV clone 457 and the Italian M2 clone both have interesting attributes (looser bunches, smaller berries, less disease pressure).
- Syrah: There has been huge interest in domestic Syrah with some very notable success and some excellent wines being made.

- Bordeaux reds: - Cabernet Sauvignon, Merlot, Cabernet Franc, Malbec. We need to continue to explore ways of continuous improvement and over recent years, these varieties have suffered from lack of gene pool improvement focus. There is a good range of high performing clones available internationally. One which could be an interesting example (and has been imported recently) is the Argentinean clone of Malbec. This is a very old clone but is still widely used. While the physiological expression may be climatic, the very small berry size contrasts dramatically with our local selections, even when grown on the low vigour soils such as those found in the Gimblett Road area of Hawke's Bay.
- Gewurztraminer: The clones of this variety are not widely understood in terms of performance and some scope may exist for better material.
- Sauvignon Blanc: Did we stumble upon the best clone with our original import – UCD1. To date the few imports that have occurred have not proven to be superior but we should be pursuing continuous improvement for this variety given its strategic importance to our export market.
- Pinot Noir: Already the multi-clonal blends have had a significant impact on wine quality with winemakers seeking a full "spice rack" of flavours. The Dijon Clone 828 is showing promise in California and is definitely one we should look at (it is now in NZ).

3) BREEDING

Given the current stigma around the use of hybrids, whether they be intra or inter species crosses, there will need to be a shift in consumers' attitudes and wine buying behaviours before hybrids will find market acceptance. This assumes of course the wines are of appropriate quality in the first place. Alternatively, the market will need to become more responsive to branded wines which reflect a style not predicated on a varietal name.

Past experiences with non classical varieties have not enhanced our winemaking reputation (think of the Giesenheim crosses). However this does not mean that a breeding programme could not bring benefits in future, especially if the focus shifts from yield attributes to wine flavour or disease resistance. While the work is long-term and there is no guarantee of success, especially when compared to the quick hits of variety or clone importation, it is an area of science which could deliver solutions tailored to our industry's specific needs over the longer term.

INTERESTING VARIETIES

The following list provides a selection of varieties that may be interesting for the New Zealand wine industry from a viticulture and winemaking perspective. The list is by no means exhaustive but features varieties I have encountered either in my global travels, or have read about and like the attributes. I have rated them as follows:

*** Best bet

** In with a chance

* More of a long shot

Altesse (Rousette) *: Native to the Savoie, a cool climate French alpine region on the border with Switzerland. Some describe it as the finest white grape variety of this region and has been described as being exotically perfumed. Some references claim it is the same variety as Furmit which was imported many years ago.

Alvarinho (Albarino)**: From the cooler Atlantic coast in north-west Spain and Portugal, this productive thick skinned variety can, if the cropping level is managed, produce aromatic wines with citrus and stonefruit aromas and vibrant acidity.

Muscats**: An opportunity exists for a moderate cropping high quality Muscat variety – options include Alsace Pink Muscat or Muscat Petite Grains.

St Laurent*: Grown on a limited scale in New Zealand – this Pinot Noir related variety is described as producing highly aromatic, deeply coloured, velvety wines. Originating in France, it was taken to Germany and other north-eastern parts of Europe where its early ripening suited the cool conditions. In New Zealand, it appears to ripen just ahead of Pinot Noir and could be a variety well suited to the cooler southern regions.

Verdejo*: From the cooler Reuda region of north-west Spain this variety is regarded as one of the better white Spanish varieties. It can produce wines with good structure and complexity and pleasant aromatics.

Marzemino**: From north-east Italy, this variety tends to produce (under New Zealand conditions), quite firmly structured medium weight wines with good colour. The fruit aromatics tend to be in the darker fruit spectrum, brambly berryfruit and plums but also with a quite floral lifted character in some instances. It ripens up to two weeks after Merlot with low acidity. Unlike some of the very shy cropping Italian varieties, it crops moderately with some crop thinning often required. Like many Italian varieties, it produces very long internodes, even in low vigour sites. It has no major disease susceptibility.

Arneis**: Some plantings are now found around New Zealand. An aromatic grape variety from Piemonte in north-west Italy. Good examples can be rich and viscous in texture and exhibit almond and peach characters but dry, light bodied styles with grassy notes can also be produced. Be warned by its local dialect translation however (little rascal) reflecting its temperamental nature. It has moderate tolerance to Botrytis.

Sauvignon Gris***: In spite of the name, this variety has more of a pinkish tone than the grey hue of Pinot Gris. This variety has limited plantings in New Zealand and appears capable of producing interesting wine. At one time, it was thought to produce wines with greater aromatic than Sauvignon Blanc and the wines were highly prized. Long cultivated in Bordeaux, it was not replanted after phylloxera because of low yields. It is now finding some favour again in France and under New Zealand conditions it has no problems with cropping levels and behaves very similarly to Sauvignon Blanc. When describing the wine, its nose shows some of the more herbal, grassy notes you associate with Sauvignon Blanc – cut grass / green pepper. It also shows some beany

characters. To a degree these characters follow through on the palate but the main palate attributes are an oily texture – the broadness and pear flavours we associate with Pinot Gris. The wine's strength is the palate weight and texture, but the aromas also give the wine freshness.

Tempranillo***: One of the most noble indigenous varieties of Spain from the famous Rioja region. In New Zealand, this variety is already being produced and wines made, albeit on a very small scale. Under Spanish conditions it is thick skinned and gives good colour. It can produce large yields and crop thinning may be required. It has low acidity and should ripen ahead of Cabernet Sauvignon.

SUMMARY

When contemplating the future varietal direction of our industry, we need to be realistic in terms of the potential for success with new varieties, especially given that over 90% of our production comes from the "classic" nine varieties listed previously. While we have made huge progress in a relatively short timeframe (since the days of Muller Thurgau, Palomino etc), the chance of a new variety becoming a major commercial success is not high and it is likely that bigger strides will be made with improved clones of existing varieties.

There is no roadmap but during our very short history we have shown that we have the ability to be innovative and responsive and as an industry we need to continue to introduce and evaluate new varieties and clones so that we can look back in 20 years time and reflect on the progress with equal satisfaction.

It is important however that we temper viticultural and winemaking aspirations, with our ultimate judge of success, the global wine market.

References: Robinson, J, Vines Grapes and Wines, Mitchell Beazley Publishers, London 1986