

## Cava and Penedès – the old and the new

I was very fortunate to visit the wineries of Freixenet and Torres and be given detailed insight into both companies, by Toni Domenech at Freixenet, and Montse Torres at Torres, to whom I am grateful for their time and patient explanations.

I was struck by how both producers use ancient viticultural and vinicultural practices alongside very modern technology to create the wines they want on a large scale which at the same time does not feel mass produced.

This is obvious immediately in the vineyard. Each producer has their own vineyards and also sources grapes from an army of farmers and growers, in Freixenet's case from 2000 different growers. Freixenet insists that their growers harvest the grapes by hand in order to maintain highest possible quality, while Torres' growers have to follow a strict environmental protocol; they are regularly inspected to make sure they adhere to the Torres green code. At Morlanda, the tiny DO Priorat estate owned by Freixenet and overseen by just one grower-winemaker Judit Llop, vines are planted in terraces and have to be tended by hand due to the delicate nature of the *llicorella* soil in which they are grown, but in a nod to progress the Cariñena vines are now planted in trellis rather than the traditional bush to avoid mildew.

Torres, despite being a global company producing recognisable wine brands that are sold all over the world, is absolutely committed to rediscovering native Penedès grape varieties. At every vintage they place adverts in the local press to ask if anyone has any unusual vines ("For example, some old vines in their back garden that their grandparents used to tend", explains Montse) then send an ampelographer to check their provenance. The leaves are examined first, as each vine has a different leaf shape and most can be identified like this. If there is any doubt, the vines are then DNA tested: there is a DNA database of all grape varieties. If they do discover an interesting variety, the vine is stripped down using a heat technique to get rid of any viruses (they are usually riddled with viruses) then the remaining healthy cells are grown in vitro. I was very fortunate to visit the in vitro labs, where tiny, tiny green shoots were bravely growing in their glass tubes. Once they have reached a manageable size, they are acclimatized in a heated and humidified nursery for several months, before being transferred to an outdoor nursery where they will grow for two years or more before being transferred to a specially selected vineyard. It is staggering to think of the investment of time, effort, technology and funds that Torres makes to preserve these ancient grape varieties of which hardly anyone has ever heard, nor ever will.

This mixing of the old and the new continues in the winery itself. At Freixenet the traditional Methode Champenoise is used to produce their famous cavas, and depending on the particular cava being produced, the process is either done by hand (for the very top cuvees), or by enormous automatic robots which slide around the winery performing very precise tasks at exactly the right moments. Pneumatic presses are used with a soft membrane which creates a pressure similar to that of traditional foot treading. The wine is fermented and kept in huge temperature controlled stainless steel tanks, except for the dosage wine for the top cava which is aged in an ancient solera system using old chestnut barrels. In an interesting clash between the old and the new, Toni told us that shiny modern gyropalettes were purchased to automate and speed up the process of riddling, however the machines took up too much space, and so now the old riddling racks requiring patient twisting of the bottles by hand are preferred!

Torres also make use of robots, for example in their mechanised grape reception where each grape is tested for ripeness and quality. Automatic racking is used and wines are kept, as at Freixenet, in enormous refrigerated silos until the time that they are needed for blending or bottling. The team in

their analysis laboratory measures the sulphur levels, colour, tartaric levels and precipitation of proteins of each wine, as well as what happens to the wine at certain temperatures (e.g. for shipping to Iceland), alcohol levels, acidity, sugar levels and volatility. All this is measured every single day and before each wine is bottled. In the preparative lab they analyse corks, flavour and aroma profiles.

Neither producer uses wild yeast, preferring instead to cultivate exactly the right strains for the desired styles of wine. Each producer has a team of microbiologists creating and testing yeasts, and Freixenet asked NASA to invent a machine to count how many yeast cells were present at any one time in a fermenting vat, in order to be absolutely in control of the wine-making process.

Alongside the mechanisation and modernity, the wineries of both producers have systems of recycling and re-using in place, making the old the new. The tartaric acid added to the wines at Freixenet comes from the tartrates that are stripped from the wines themselves: the crystals are sold to a company which sells them back to Freixenet as tartaric acid. At Torres the skins left over from pressing are used for fertiliser, they reuse water and make use of rainwater, and organic material from the vineyards is burned in huge *calderas* to generate electricity.

This regeneration seems to be the key to the future of wine-making. Torres keeps a collection of vine varieties growing in different conditions to compare how different sunlight levels, different CO<sub>2</sub> levels, different temperatures and different levels of humidity affect the vines – experimenting with the vines to see how possible future changes in climate and environment will affect them, and rediscovering old grape varieties that may turn out to be future brands. Both producers test and experiment daily in the winery and laboratories, checking blends, testing yeasts and analysing the composition of each wine. They are constantly investing in the future, challenging tradition whilst at the same time preserving it. Torres in particular are passionately committed to sustainable wine-making, using solar power where possible, working towards organic certification, recycling water, and re-using organic waste. As Montse Torres puts it, wine is an “exchange of history”, a product of ancient artisanal tradition, and modern knowledge and new techniques. As long as this exchange continues, we can continue to enjoy good wine.