

Codorníu : Great wines are born in the vineyard

Viticultural Aim: to use sustainable and precision techniques, minimising the impact on the environment and maximising wine quality

The Codorníu family started making wine in 1551 and are today one of the oldest family-owned companies in the world. On a recent study trip I visited four wineries: Legaris in Ribera del Duero, Bodegas Bilbaínas in Rioja, Raimat in Costers del Segre and Codorníu in Penedes. The company has long been a pioneer in the wine trade: it was the first to produce Cava in 1872. Their ethos has not changed much since. Their commitment to sustainable viticulture is admirable combining cutting edge precision viticultural techniques with traditional methods.

Lutte Raisonnée is a fairly new viticultural approach based on the scientific concept known as integrated pest management or IPM. The aim is to maintain a balance with nature and minimise the impact on the environment. This sustainable viticultural technique has been adopted with gusto by the Codorníu group and is employed in most of their vineyards. There are many systems in place. Of most notable mention is the use of pheromone cordons as a sexual confusion technique against the lobesia botrana moth.



Pheromone cordons

Small wires are fixed manually to each vine and emit a strong scent that fools the male into thinking there are literally thousands of female moths on that one vine. The male moth cannot cope and dies. An effective IPM method.

Another technique evident was the use of cover crops, such as clover and grasses, which are left to grow in between the vine rows. This helps to promote soil life, prevent soil erosion and enhances beneficial insect populations. In Bodegas Bilbaínas cover crops are even used in hilly areas to reduce vigour of the vines and improve quality. In Raimat they also try to avoid compaction of soil by using alternative rows every year for their tractors.



Cover crops and sprinkler system at Bodegas Bilbaínas

Weather monitoring can also help to minimise chemical inputs by forecasting when pests and diseases are likely to be an issue, as well as predicting bad frosts. Raimat established the first weather station in a European vineyard and the use of agrochemicals has been reduced by around 80%. For Legaris frost is a problem two thirds of the year as there is a high diurnal temperature range with temperatures as low as -15° at night. Predictions are therefore vital when using the state-of-the-art anti-frost sprinkler systems they have in situ. The system is that advanced that even a phone call can activate the system.

Precision viticulture or ‘PV’ is an agricultural idea that has been around only since the 1990s. Viticulturists in Australia and California began to study the variations that naturally arose in their vineyards. Examples include variations in grape ripening, vine vigour and yields. Making accurate maps and monitoring every inch of the vineyard can hugely improve quality. Codorníu were among the first in Spain and even Europe to utilize these new techniques and Raimat was the first Spanish vineyard to use satellite imaging and GPS systems.

‘Remote sensing’ is where data is collected by gathering aerial images, either by means of satellites or by flying planes over the vineyards. In Raimat vigour maps show the intensity of plant growth in the vineyards. In Bodegas Bilbaínas they take infrared photos at the time of véraison, which shows the different levels of photosynthesis. Soil types are also mapped out to aid in vineyard management. Yield monitors, such as the Greenseeker in Legaris and Raimat, also help to collect data. When used with a global positioning system (GPS) these yield monitors can help to create yield maps. In Bodegas Bilbaínas, the number of bunches and weight of bunches are also measured. This information is essential and can tell the viticulturist where and when to greenharvest.

Codorníu have also developed an A to E quality grading system for their vineyards: ‘A’ vineyards represent healthier, more concentrated grapes. Quality can be measured using a refractometer to measure the phenolic ripeness of the grapes but of course the most important practice is to taste the grapes. Experienced viticulturists know their vineyards inside out and analytical monitoring of ripening can help to determine the optimum time for harvest.

The main aim of PV is homogeneity of the vineyard and to enable selective harvesting. By crosschecking the vigour maps with the quality maps, Codorníu

viticulturists can make changes to very specific parts of the vineyard to improve future quality. For example they use canopy management techniques to achieve optimum leaf and fruit exposure to the sun, while reducing the risk of disease and increasing quality. Other methods include green harvesting, shoot removal, cluster thinning and removing the leaves of the north face of the rows. In Raimat, the soil maps are useful as they plant vigorous vines on less fertile soils to help control vigour.

Along with pruning and canopy management techniques, trellising can be used to reduce vigour and improve quality. In Legaris the Smart Dyson system is used. This means vines are 1-1.2 metres above the ground, which gives them more exposure to the sun (essential in the extreme conditions of the Ribera del Duero). This form of trellising also ensures lower yields, which in turn improves grape quality.



Legaris trellising system

Irrigation is essential for many of the Codornú vineyards because drought is a major concern for many regions in Spain. There are many ways to irrigate including drip irrigation and irrigating using canal water as they do in Raimat. Raimat also uses regulated deficit irrigation (RDI) systems, which monitor the vines every 15 minutes. This applies water stress at specific times during the vine growth cycle that enhances concentration of colours, aromas and flavours. This method works best if water supply is cut just after flowering and berry set and then restored at véraison.

Another fairly advanced irrigation method is used in Raimat called partial root drying. The vines are watered for 15 days on one side of the vine. The other side of the vine consequently suffers from hydric stress. This has proven to concentrate the grape flavours by reducing vigour. At Raimat tests are also important to ensure that only the minimum amount of water is given to the vines. A process known as Enviroscan monitors the state of the water in the soil at different depths and humidity sensors also help to manage water supplies efficiently.

In conclusion, Codornú is a technologically savvy company that will continue to invest in research and development and will never rest on their laurels. Their meticulous vineyard management has worked in their favour with wines that keep on improving in quality. They are continually experimenting with different clones and rootstocks in a bid to continue their quest for sustainable viticulture. Nevertheless, Codornú wines still express their terroir and varietal character, which these days is a true inspiration.