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A Wine Lover's Guide

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VINEYARDS AND THEIR MANAGEMENT: KEY FACTORS IN WINE QUALITY

In the vineyard

Wine begins in the vineyard, as nearly every wine grower is now quick to tell you. This may sound fairly self-evident, but it actually represents a significant U-turn. After the wars and disasters of the first half of the 20th century, high productivity was seen as the top priority even in viticulture. Concentrated use of chemical products—from artificial fertilizers to herbicides, pesticides, fungicides, and anti-rot sprays—was a guarantee of high yields first and foremost, at the expense of healthy vines and grape crops, and great wines. As early as 1975 pioneering wine-makers recognized the effects these chemicals were having on nature, soils, and plants.



A very simple measure proved to be an eye-opener for many wine growers. Around 1990 a process of grape selection began: It gradually dawned on people that good wine could only be produced from healthy grapes. To ensure this happened, all the diseased, unripe, overripe, or damaged berries were simply weeded out—stems, stalks, leaves, weeds, other foreign bodies, and all. So simple, and yet revolutionary. From this point on, the quality of wine took a quantitative leap, and success created a precedent.

Suddenly top producers began to question all aspects of the traditional pillars written in stone, and what it had cost them, especially in terms of the level of yield and the working practices in the vineyard. In search of the perfect grape, they began to take an interest in soil life, the health of the vines, and the balance in nature. It is quite simply inspiring to see, experience, and taste how top producers all over the world are working nowadays. Not every wine grower or winery has signed up to this approach yet, but the numbers are increasing year by year. For a real wine lover it is essential to understand how great wines are produced, especially in the vineyard.

Left: By their very nature, old vines give low yields of well-balanced grapes.

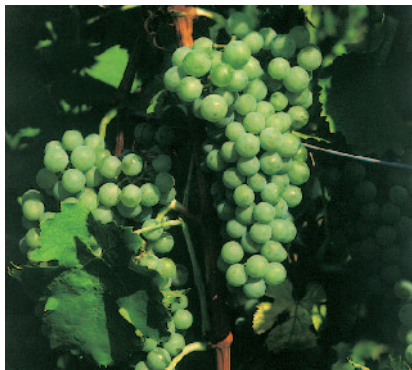
Top: Cultivating steep slopes is worth the effort. The best wines often come from extreme locations.

wine grape varieties 1



The **Malvasia** family of grape varieties, including an early red variety, probably originated in Asia Minor. It was widely planted throughout Ancient Greece, particularly on the islands, where rich, oily dessert wines are still made from it today, as they are in the Lipari Islands off Sicily, and as Malmsey in Madeira. Malvasia also has a significant presence in central Italy, where, by contrast, it is usually made into dry wines.

Müller-Thurgau: Professor Hermann Müller, from Thurgau in Germany, grew this crossing of Riesling and Chasselas (Gutedel) at Geisenheim in 1882. An early-ripening variety that needs damp, deep soils, Müller-Thurgau delivers high yields, but is very susceptible to mildew and other diseases. Its low acidity produces wines that seem soft and round, and have a subtle hint of Muscat that is lost if the grapes become very ripe. Müller-Thurgau is the most widely planted grape variety in Germany, and is also very important in Austria, the Czech Republic, Slavonia, Slovenia, Hungary, and Luxembourg.



Muscat, Moscato or Muskateller – behind the names lies one of the oldest and most ramified families of vines. Most renowned is the Muscat Blanc à Petits Grains, whose small, aromatic grapes are the basis for one of the world's most popular sweet sparkling wines, the Italian Asti, previously known as Asti Spumante. Muscats are grown in many countries, however, and famous examples are Samos and Muscat de Frontignan.

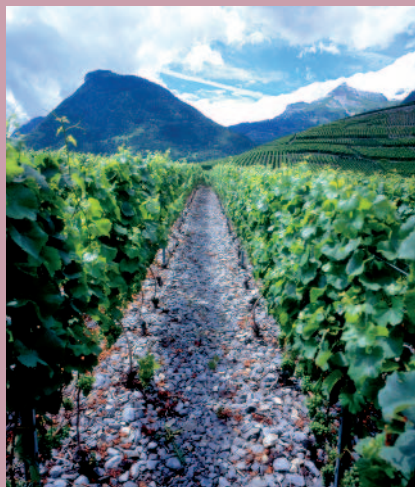
Terroir

The same variety of vine planted in different locations can produce wines that differ greatly in terms of both structure and aroma—the “terroir effect.” A *terroir* is a defined area in which the physical and chemical conditions of the natural environment, the geographical location, and the climate give rise to specific and identifiable products. Consequently, the term denotes the interaction of a number of factors, including soil, vineyard aspect, climate, vine, and grower.

The nature of the soil depends on a number of factors, not least the geological parent material from which it was created by gradual weathering. The composition of this material (for example, granite, slate,

or limestone from the Mesozoic or Tertiary periods) naturally influences the properties of the soil. Physical, chemical and biological processes all play an important role in weathering, although microorganisms are the most industrious agents of soil formation: there are billions of fungi, algae, and bacteria in a patch of live earth, in varying proportions, depending on the conditions. These microflora also affect growth cycles and the interaction between soil and roots. The macrofauna such as worms, snails, mites, and insects are also hard at work, and make a significant contribution to loosening and aerating the soil.

The expression of *terroir* in a vine and its grapes is imparted by live soil that sup-



Chamoson in Valais, Switzerland: granite and gravel



Tavel, south Rhône: pebbles over clay-limestone

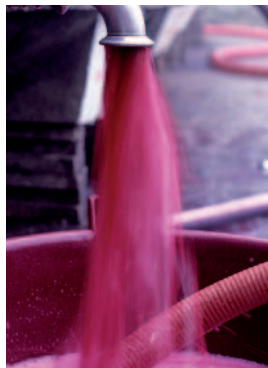
THE EFFECT OF DIFFERENT METHODS AS THE WINE DEVELOPS IN THE WINERY

In the winery

Anyone entering a winery, whether it's a small producer, a large estate, or a cooperative, will usually be surprised at how clean it is. Hygiene has become part of wineries all over the world with the advent of enology: The first diploma in the science of wine was set up in Montpellier in 1955. Every winemaker wants, after all, to convert grape must into wine without any problems and to ensure there are no unwanted bacterial effects on the work of the yeast. As stainless steel is easy to clean and therefore very hygienic, gleaming steel tanks often squeezed out old barrels, vats, and concrete tanks.

Another measure followed hot on the heels of knowledge about temperature's influence on fermentation—temperature control became the gold standard in wineries. This process was accelerated after the extremely hot summer of 1982, which caused major problems in many wineries. Not only can fermentation processes be controlled as required, it can also prevent “stuck fermentation” (when the yeast action becomes dormant unintentionally). This allows aromas to be retained at a level of intensity that had seldom been achieved before. Other methods and technologies have been added to the repertoire. Today's wine lovers can choose from a wide selection of quaffable wines due to the development of modern cellar technology.

However, wine would not hold such fascination if it were a product that could just be controlled by technical means. The extent to which individual winemakers use technology is down to their own personal ambition and philosophy. Just as wine growers swear by natural working practices in the vineyard, they usually want to interfere as little as possible in the winery's natural processes as well. In extreme cases they tip the grapes into amphoras, almost the way it was done when viticulture began; the containers are then sealed, and after a few months they are surprised by the result. To fully appreciate and understand wine, it helps immensely to take a look at the winery.



*Left: An example of a red wine fermentation room with high-quality oak vats
Above: Pumping over is a common technique to keep the cap submerged.*

Consumer product and work of art

When the modern wine industry in California and Australia was emerging, they resorted to imitation when it came to wine styles and labeling. They bottled “Burgundy,” “Claret,” “Champagne,” and “Chablis” in particular, though it hardly ever involved Chardonnay. It was a state of affairs that became increasingly untenable with the growth in global trade. As their own growing regions still had to develop a reputation, they switched direction to international premium varieties which they emblazoned on the labels. As a result, Cabernet Sauvignon, Merlot, Shiraz, and recently Pinot Noir, Chardonnay, and Sauvignon Blanc have all become the darlings of the international wine trade.

Many superb New World wines are still bottled as single-variety today. When this approach reached the mass market, this obvious idea was very appealing to consumers all over the world—and others besides. Producers in other countries also followed suit. Single-variety wines began to take over the shelves and are now a well-established, integral part of the product range. While this has meant that grape varieties have assumed a brand role, a number of large companies have managed, with the right marketing, to suc-

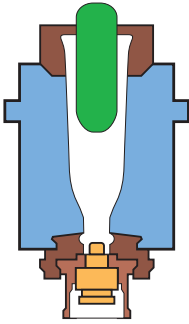
cessfully sell their varietal ranges under their own labels.

Consumers expect a brand to offer consistent quality every time. Yet that is inherently anathema to wine, which can sometimes have a widely divergent taste profile in terms of structure and concentration, depending on the location, microclimate, and seasonal conditions. So the wine industry and wine technology have made it their business to minimize these differences. At the same time it is about working in a way that is not only cost-effective, but above all profitable. The end product begins in the vineyard as well. So right from the start processes are geared to meet expectations, ensuring the price

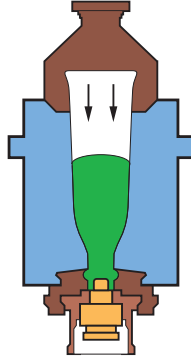


Only maturation in barriques can refine the quality of well-structured red wines.

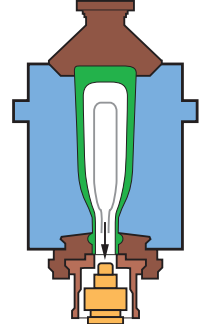
MANUFACTURING BOTTLES USING THE BLOW-AND-BLOW PROCESS



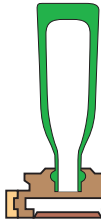
The molten gob of glass is dropped into the parison mold.



The lower part shapes the neck of the bottle.



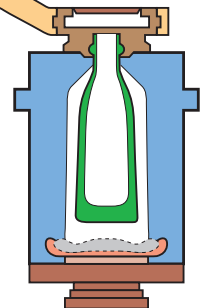
Compressed air is forced through a jet and blows the glass into shape.



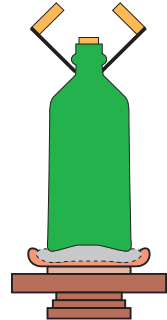
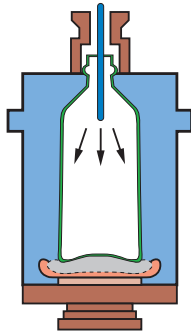
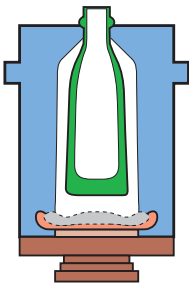
The parison is transferred to a finishing mold, and another burst of compressed air forms the final bottle shape.

The bottles are put back into a furnace so that both the interior and the exterior reach the same temperature and can then cool off evenly.

Metal oxide vapors are sprayed onto the surface of the glass to remove any flaws.



A number of checks are carried out on the finished bottles.





France



France continues to maintain its top position in the world of wine. Spain may have a greater cultivation area and Italy did in fact overtake France from 2007 to 2010 in terms of volume, but, according to statistics from the French government advisory agency Onivins, in 2011 France came second in terms of cultivation area with 2 million acres (807,000 ha), and first in production with about 1.3 billion gallons (49.6 billion hl) At the same time, champagne, Bordeaux, and Burgundy all come from France, three fixed stars in the wine production firmament: For the high quality is backed up by very significant volumes as well.

Around 600 BCE Greek settlers founded what is now Marseille and introduced

vines. Then, from the second century BCE, Gallia Narbonensis (with today's Narbonne as its capital) was built up as a wine-producing province under the Romans. Viticulture soon began to develop in the Rhône Valley as well. Initially, Bordeaux—then Burdigala—was important only as a port for exporting wine, until vines were planted there, presumably in the 1st century CE.

Burgundy (“Bourgogne” in French) played a major role in winemaking during the Middle Ages—its monasteries of Cluny and Cîteaux, which were founded in 910 and 1098, were responsible for the promotion, refinement, and promulgation of viticulture. As part of Aquitaine (and therefore England), Bordeaux expanded

Glossary

A

acids These give the wine vitality and prolong its freshness; however, the acidity must be balanced.

Appellation d'Origine Protégée (AOP) Protected designation of origin for French wines (formerly AOC).

assemblage Blend of high-quality wines (cuvée); *coupage*, on the other hand, is a blend of low-quality wines.

American Viticultural Area (AVA) Protected designation of origin for American wines, equivalent to French appellations.

B

barrique Small oak cask with a capacity of 225 liters (59 US gallons), used in the maturation of red wines in many countries, as well as for fermentation and maturation of white wines.

blend Mixture of different varieties of grapes or wines to enhance the positive qualities of the individual components; standard practice in branded wines to ensure consistent quality for each vintage.

Botrytis cinerea Noble rot affecting grapes, producing distinctive aromas and flavors.

bottle maturity The point at which a wine is fully developed and ready for bottling; also describes the aging of a wine in the bottle.

C

cap As red wine ferments, a layer of grape skins and other solids float to the surface of the container; this must be “punched down” and mixed in with the must to release color pigments, aromatic substances, and tannins.

carbon dioxide (CO₂) A natural gas and a by-product of alcoholic fermentation.

cava Type of Spanish sparkling wine, made using the traditional bottle fermentation method.

cellar bottled Wines made from grapes that were not grown or developed by the bottler.

chaptalization (enrichment) Addition of sugar before fermentation to increase the alcohol content; not permitted for every wine.

clarification Natural, gentle process allowing unwanted solid matter in the must or wine to sink slowly to the bottom of the container.

clone Vines propagated from a genetically identical mother plant.

clos Term used in Burgundy for a vineyard enclosed by a wall or hedge.

cork taste Where wine becomes impaired by faulty corks, mainly through the formation of the chemical compound 2,4,6-Trichloroanisole (TCA), which is caused by mildew. Also known as cork taint.

coulure Where grapes fall off after flowering due to a metabolic deficiency in the vine.

cru Literally “growth”; used in the wider sense for an excellent location, or the wine from this area.

cuvée Blend of high-quality wines, assemblage; used in sparkling wine production to describe the free-run juice from the pressing.

D

dégustation French term for wine tasting.

Denominação de Origem Controlada (DOC) Controlled designation of origin for Portuguese quality wines.

Denominación de Origen (DO) Controlled designation of origin for Spanish quality wines.

Denominazione di Origine Controllata (DOC) Controlled designation of origin for Italian quality wines.

deposit Lees or sediment.

de-stem To remove the grapes from stems before fermentation; to machine-process.

domaine French term for wine estate.

E

enology The science of winemaking.

Erzeugerabfüllung “Estate-bottled”—German term for wines made from grapes grown on the estate named on the label, also applies to cooperative wines.

extract All the nonvolatile substances present in wine: acids, minerals, sugar, phenols, glycerin.

F

fermentation Process in wine production during which sugar is converted into alco-

hol and carbon dioxide, and the must turns into wine.

filtration Fast technique for separating solids from the wine using filters; its use in high-quality wine is controversial, as it can result in loss of color and valuable substances.

fining Clarification of the wine, helping to stabilize it; a fining agent is added to the wine to bind the unwanted cloudy particles, which then settle as sediment.

fortified wines Port, Sherry, Madeira, Malaga, Marsala, Banyuls, and Rivesaltes, among others.

fortify To add alcohol in order to stop fermentation and increase the alcohol content of the wines.

full fermentation All the sugar is converted into alcohol; the wine has little or only minimal residual sweetness.

G

grand cru Literally “great growth”—classification for the top locations in Burgundy and Alsace, and general term for outstanding wine.

H

hybrid grapevine Offspring of two grape varieties that do not belong to the same species (also known as an interspecific cross); the aim is to combine the positive qualities of different species in one variety.

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