

Chapter 3 – Wines

Factors Influencing Character of Wines

The characteristic of a type of grape vary from vineyard to vineyard and country to country, depending on the nature of soil and the climate in which it grows. The sugar content, yeast, and the acid levels of grapes greatly influence the character of wine. The character of the wine largely depends on the following factors –

Soil – The mineral content of the soil and the ground water determines the composition of acids and other trace minerals which influence the aroma of the wine.

Grape variety – Each grape variety has a distinct aroma and other features which play an important role in determining the kind of wine to be produced.

Climate – The climate can be a blessing or curse for the grapes. Extremes of sun shine, hail storm, wind, frost, rain, etc. can damage the grapes. The average yearly temperature of the place should not be below 10 degree Celsius.

Viticulture - Viticulture denotes how the vine is cultivated. This is most important and every stage of viticulture happen at a particular month of the year. Any delay in the schedule will influence the character of wine. For example, late harvested grapes have more sugar content which determines the character of the wine

Aspect - Vineyards on the slopes of valley are normally preferred as the frost will roll down. The slopes facing south normally produce good quality wine due to longer exposure to sun shine compared to north facing slopes as they do not have the same advantage.

Vinification - It refers to the method of making wine. Wine producers have a lot of options before them at each stage of making wine. Options on method of pressing, fermentation container, temperature control, type of wood for ageing, duration of ageing, blending etc. The decisions taken influence the character of wine.

Ageing - Ageing determines the character of the wine. The longer the wine matured, the mellower and smoother will be the wine, taking the flavour of vanilla from the wood.

Storing - Wines should be stored at appropriate temperature and in the rooms free from direct sunlight and vibration. Wines should not be subjected to extreme fluctuation of temperature. Poor storage would damage the character of the wine.

Naming of Wines

Any product produced for a consumer has to have a name for marketing. Wines are also named and the name is printed on the label of the wine bottle. There are many varieties of wines from various regions of different wine producing countries with their names in the market. Wines are named in any of the following four methods –

Names after the grape variety used

Some wines, especially the ones produced in Germany, Australia, the USA, and Alsace region of France, are named after the predominant grape variety used in the winemaking. Chardonnay, Cabernet Sauvignon, Riesling, Sylvaner, and Zinfandel are some examples.

Named after place of origin

Quality wines are generally named after their place of origin which may be large, such as region and district or smaller areas such as communes, villages, vineyards, and so on. The place of origin is normally delimited and controlled by the Government. The wines reflect the character of the soil, climate, grape, production methods, etc. of that area. The smaller the area, the higher the standard of the wine.

Brand Name

Some wines are named after the producer, shipper, or the proprietor of the vineyard who tries to establish his/ her brand by producing quality wines according to his/ her style. Most of the time, the reputation of the producer is the basis for the choice

Generic names

Some countries name their wines after well-known wine districts that are noted for its typical style of wine. The wines so named may or may not have any resemblance to the wines of those regions; for example, Burgundy & Chablis. These wines must have that place of origin of the label; for example, California Chablis. This clearly informs the consumer that the wines are made in California and that they are different from the Chablis of France.

Vine Diseases

What does *Vine Disease* mean?

One of the biggest challenges a winemaker must take into consideration is vine disease. Vineyards are susceptible to many different diseases with varying degrees of severity. Some of these diseases affect only parts of the vine or crop and others can kill the entire vineyard. This makes it important to keep the vineyard as healthy as possible and plan for interventions as needed. When it comes to many diseases, the only treatment is prevention.

There are a couple of major diseases that are most common in vineyard management. The first are mildews (specifically powdery mildew) which is a fungal disease that infects the clusters and canopy and spreads during high humidity and moderate temperatures. To prevent this, fungicide with sulphur can be applied to the crops but a leaf test must be performed to ensure that the product is reaching all parts of the vine.

The second category of diseases are rot diseases (specifically bunch rot), these present themselves at the end of the season when temperatures are warm and grapes are ripe. Bunch rot is also a fungus and bacteria that can be treated with fungicide and by pruning the canopy so that all parts of the vine are exposed to sunlight, preventing humid conditions.

These are like the common cold for grapevines, and preventative measures should be taken on a yearly basis. This involves pruning the canopy and removing all clusters in between seasons. Use fungicides sparingly, as these diseases can never be completely eradicated but controlled to a manageable, unnoticeable level. (Vine Disease, n.d.)

Vine Diseases

1. Downy mildew

One of the most important vine diseases that can cause complete destruction of grapes and vine vegetation is Downy mildew. It infects all aerial parts of the plant from mid-May to late autumn. The disease can be recognized by oil spots and moldy cover or bright green spots on leaves and white moldy cover on shoots and inflorescences. Downy mildew can infect also berries that thrive and dry out (they look like a brown-purple raisin) or in later stage soften and become brown violet colour.



2. Powdery mildew (*Oidium tuckeri*)

Powdery mildew fungus can infect all green parts of the plant. The disease developed through the whole growing season until late autumn. It thrives best in warm, humid and cloudy weather. Ideal conditions for the development of Powdery mildew are very hot (25 – 30°C) and humid days. At the early stage of berry development, infected berries are covered with a grey coat and dry out shortly after. When half-ripe berries got infected, they crack and dry out. Canes can also get covered with a grey coating, an old infection appears as reddish-brown spots.



3. Phylloxera Vastatrix

A louse like, almost invisible aphid which attacks the Leaves & roots of the vine. The disease 'Phylloxera arrived in Europe in the mid-1800s almost by accident, transported on American vines imported into various European at this time.



**Grape leaf showing galls from
Phylloxera**



(Most common vine disease, n.d.)

4. Noble rot: Botrytis

Occurs when humid conditions are followed by hot weather. The fungus punctures the grape skin, the water content evaporates and the grape shrinks, thus concentrating the sugar inside.



5. Coulure

- Coulure (pronounced coo-LYUR) is a potential viticulture hazard that is the result of metabolic reactions to weather conditions that causes a failure of grapes to develop after flowering.



Wine Faults

Acetification

The wine has been affected by acetobacters through over- exposure to air. The vinegar microbe develops a film on the surface of the wine which produces acetic acid. The wine tastes sour, resembling vinegar (Vin aigre = sour wine).

Cloudiness

This may be caused by extremes in storage temperature, excess protein, contact with metal or bacterial action or an unwanted continuation of fermentation.

Formation of Crystals

Sometimes, there may be formation of potassium bitartrate crystals on the cork in the wine which may spoil the appearance of the wine. However, the crystals, which are also called a wine diamonds, can be retained in the bottle by pouring the wine gently into the glass. It is commonly found in German wines.

Excess Sulphur

During the fermentation process, sulphur dioxide (SO₂) is added to check the actions of wild yeast. It also acts as preservative. Addition of too much of SO₂ leaves an unpleasant smell which resembles the smell of burnt

matchstick on the wine. However, it normally disappears when exposed to air either by decanting the wine or swirling in the glass.

Oxidation

During the ageing process, air invades the wine through very fine pores of the wood and the alcohol interacts with the oxygen. When exposed to oxygen for a long period of time, white wine, especially, assumes a brownish colour. Wines may also go lifeless with dull and flat smell.

Corked or Cork

Wine bottles are closed with cork to retain the characteristics and to preserve the quality and quantity of the content. The cork that is contaminated with strong mouldy smell by a substance called trichloranisole (TCA) during the sterilization process spoils the wine during the contact. The wine takes on the smell of the faulty cork.

Foreign Materials and Sediments

Sometimes, wine may be contaminated by foreign materials, such as splintered glass due to faulty bottling equipments. Wines throw up sediments during ageing which can be removed by racking or decanting.

Excess Fermentation

This may happen when the wine is not fined or filtered properly. Traces of sugar and yeast remain in the bottled wine. An unwanted fermentation occurs causing bubbles to appear, usually accompanied by a nasty aroma and taste.

Weeping

Seeping of the wine from the cork can be caused by a too small or faulty cork or when a secondary fermentation pushes the cork loose.

Storage of Wines

Storing

- In order to better understand the concept of preserving and aging fine wines, we take a closer look at the six critical elements associated with proper wine storage:
- temperature
- temperature stability
- humidity

- ventilation
- darkness
- security

Temperature

The ideal temperature for wine storage is somewhere between 11°C and 14°C (52°F to 58°F).

Temperature Stability - Wine must be kept in an environment where temperature is constant and stable.

Humidity - Relative humidity levels should range between 60 and 80 percent.

Ventilation - Wine needs to be kept in an odour-free environment. Since some air will always get back into the wine through the cork, the molecules that make up that odour.

Darkness - Wine should not be subjected to excessive amounts of light.

Security - Although not an environmental condition, security is an important issue. There is no sense having a sophisticated cellar if your wine is susceptible to loss or damage due to fire, theft, or equipment failure. Wines should be stored horizontally, in order to keep the wine in contact with cork to avoid dryness of the cork.

Fruit Wines

Fruit wines are fermented alcoholic beverages made from a variety of base ingredients (other than grapes); they may also have additional flavors taken from fruits, flowers, and herbs. This definition is sometimes broadened to include any fermented alcoholic beverage except beer.

Fruit wines have traditionally been popular with home winemakers and in areas with cool climates such as North America and Scandinavia; in East Africa, India, and the Philippines, wine is made from bananas.

Plum Wine

Plum jerkum is made from fermented plums in a manner similar to the use of apples for cider. It was often associated with the north Cotswolds and was once a product of the city of Worcester.

Pineapple Wine

Pineapple wine is made from the juice of pineapples. Fermentation of the pineapple juice takes place in temperature-controlled vats and is stopped at near-dryness. The result is a soft, dry, fruit wine with a strong pineapple bouquet. Pineapple wine is popular in Thailand and other South East Asian countries, where it is made using traditional practices and is not available commercially.

Dandelion Wine

Dandelion wine is a fruit wine of moderate alcohol content that is made from dandelion petals and sugar, usually combined with an acid (such as lemon juice).