THE FLYING WINEMAKER

ONE DAY

Express Crash Course in Wine Level - 2

Merlot

ORIGIN
Bordeaux, France

NOTABLE REGIONS
Bordeaux, France; Washington State, USA; Stellenbosch, South Africa

STYLE
Medium-bodied with great balance of flavour. Firm tannins and well rounded.

FUN FACT
Cabernet Franc is the father of Merlot, but its mother is Magdeleine Noire des Charentes (super rare!) – an old and esoteric variety only discovered by DNA testing.

FLAVOURS

Plum, cherry, cloves, cigar, chocolate, blackberry

Pinot Noir

ORIGIN
Burgundy, France

NOTABLE REGIONS
Burgundy, France; Central Otago, New Zealand; Oregon, USA

STYLE
Light, low acidity, fresh fruits and pleasant.

FUN FACT
Hong Kong is the biggest market in the world for Pinot Noir, especially from Burgundy. In 2013, six Domaine de la Romanée-Conti 1995 magnums were sold for US$27,300 a bottle (HKD215,000).

FLAVOURS

Raspberry, strawberry, red cherry, mushroom, cloves, plum

Chenin Blanc

ORIGIN
Loire Valley, France

NOTABLE REGIONS
Swartland and Stellenbosch, South Africa; Loire Valley, France

STYLE
Very versatile as it can range from light-bodied and unwooded to full-bodied and barrel fermented. Aromatic and very flavourful with high acidity.

FUN FACT
Although of origin to France, South Africa is the largest producer of Chenin Blanc in the world with more than double the area of hectares planted. Chenin Blanc is also the most widely planted variety in South Africa, accounting for nearly one-fifth of all vineyard plantings in the country.

FLAVOURS

Pear, apricot, honey, almonds, passion fruit, jasmine

Chardonnay

ORIGIN
Burgundy, France

NOTABLE REGIONS
Burgundy & Champagne, France; Napa Valley, USA

STYLE
Versatile as it can be light, fresh and unoaked or full, bold and barrel aged and even sparkling.

FUN FACT
Around 800 AD, the wife of Emperor Charlemagne, disgusted by the red wine ever staining her husband's white beard, ordered that white grapes be planted in their Burgundy vineyard, which is now called Corton-Charlemagne (a Grand Cru appellation in Côte de Beaune that only produces Chardonnay).

FLAVOURS

Green apple, lemon, pineapple, stone fruit, vanilla, butter

Cabernet Sauvignon

ORIGIN
Bordeaux, France

NOTABLE REGIONS
Bordeaux, France; Maipo Valley, Chile; Napa Valley, USA; Margaret River, Australia

STYLE
Full-bodied, high in tannin, high in alcohol, very fruit forward with well-rounded oak characteristics. Very age-worthy.

FUN FACT
Cabernet Sauvignon is the most planted wine grape in the world and is the offspring of Cabernet Franc and Sauvignon Blanc i.e. a genetic cross.

FLAVOURS

Blackcurrant, plum, vanilla, leather, mint, cedar

Syrah/Shiraz

ORIGIN
Rhône Valley, France

NOTABLE REGIONS
Rhône Valley, France; Barossa Valley, Australia; Swartland, South Africa

STYLE
Full-bodied, full of fruit, lots of spice and is delicious.

FUN FACT
Syrah shouldn't be confused with Petite Sirah, which is an entirely different grape (and not just a smaller version of Syrah grapes, as the name suggests). Petite Sirah is actually a hybrid variety created in 1880, which resulted from crossing Syrah with another variety called Peloursin.

FLAVOURS

Black pepper, black olive, plum, blueberries, clove, red cherry

Lean more about The Flying Winemaker and follow us on:

What is Wine?

Wine is an alcoholic beverage made from fermented grapes. However, don't confuse wine grapes (Vitis Vinifera) with table grapes (Vitis Labrusca or Vitis Rotundifolia). We are all familiar with table grapes, but did you know that wine grapes are even sweeter? Wine grapes are fermented with yeast that is either naturally present in the grape or in the winery, or with commercially made strains. Fermentation usually occurs without the addition of sugar, acid, enzymes, water, or other nutrients, as these properties are found naturally in a grape.

WINE GRAPES	TABLE GRAPES
Smaller	Larger
More sugar	Less sugar
Always contains seeds	May not contain seeds
Skins are thicker	Skins are thinner
Higher acidity	Lower acidity
Higher concentration of flavour	Lower concentration of flavour
Higher juice content in pulp	Lower juice content in pulp
Lower yield per vine	Higher yield per vine

The History of Wine

The earliest evidence of an operational winery dates back to 4100 BC in Ancient Armenia, however, there is evidence of wine being made and consumed as early as 7000 BC in China. Bear in mind that wine back then was not the same as what you find in bottles today. Wine was made from many things such as honey, rice, and other fruits. In those days it was safer to drink wine than water as water was not always the cleanest to drink.

Old World vs. New World

Do you ever wonder what the terms “Old World” and “New World” mean? The difference between these terms is mainly geographical but is also based on how long the countries have been making wine.

What is this Old World and New World business all about?

Vitis vinifera, the most common grape vine is native to Europe. The Romans were the first to start classifying the varieties of this grape and as the Roman Empire expanded, so did the plantings of the vitis vinifera vine. Old World wines are therefore from European and Middle Eastern countries where winemaking originated.

When the Age of Exploration happened between the 15th and 17the century, these grape varieties were then spread from Europe into the New World (America, South America, Asia, Australasia and South Africa). The colonists needed wine (apparently for religious regions!) and therefore the planting of the vines was often a matter of high priority when they arrived.

Consequently, the vine varieties now found in the New and Old worlds are very similar. Zinfandel in California is the same grape as the Primitivo grape found in Italy and Syrah in Northern Rhone in France is the same as the Shiraz grape found in Australia.

But if the grapes are the same, then why do the wines taste different?

In one word, terroir (pronounced “tare wahr”).

Terroir refers to the combination of factors including soil, climate, and sunlight that gives wine grapes their distinctive character. Therefore, you will find a Syrah from Northern Rhone tastes very different to a Shiraz wine from Australia, even though they are made from the same grape variety!

- Old World wines are generally from cooler climates and they are described as tasting lighter, having less alcohol, higher acidity, and tasting less fruity.
- New World wines are generally from hotter climates and are often made from riper grapes, with higher alcohol, less acidity and taste more fruit driven.

OLD WORLD	NEW WORLD
European countries	Non-European countries
Traditional winemaking practices	Modern winemaking practices
More elegant wines	More robust wines
Bound by laws	Free to experiment
Generally lower in alcohol	Generally higher in alcohol
Richer history	Relatively new to the game

How a New World Method Traditional stacks up against Champagne

Although the name Champagne has become synonymous with sparkling wine in many languages, there is in fact only one Champagne wine, and it comes from the region of France it is named after.

French Champagne is often considered the finest sparkling wine in the world, with an old sparkling winemaking tradition pioneered by local monks and Abbeys in the 17th Century.
It is also often the most expensive. But prices vary greatly depending on the style.

So, with a constant increase in popularity and consumption of sparkling wine all around the world, the production has now reached all corners of the globe. All major wine producing countries now produce quality sparkling wines.

The challenge in many 'New World' countries is to find areas that are cool enough to successfully grow Chardonnay and Pinot Noir grapes and preserve their subtle aromatic character and acidity found in fine 'Old World' bubbly.

This has often been achieved in regions with cool climate such as the Yarra Valley in Victoria, Australia, which leads the charge in Traditional Method Sparkling Wines from the country.

How Chenin Blanc was stolen from the Old World and now is a world-class thumper in the New World

Chenin Blanc is arguably one of the most versatile grapes in the world making a variety of different styles of wine to suit almost every occasion. Whether it be a still, light, fresh, fruity, unwooded Chenin, to a bold, rich, concentrated and oaky Chenin, to lovely, elegant bubbles and even a sticky noble late harvest, one really can't go wrong with such a beautiful variety!

Although Chenin Blanc is of origin to France, South Africa is now the single largest producer of Chenin in the world, accounting for more than 50% of the vineyards world-wide. Chenin is also the most planted variety amongst all varieties in South Africa accounting for nearly 20% of total vineyards planted in the country.

As a grape, Chenin Blanc buds quite early in the growing season, but only ripens mid-late during harvest time. The climate of a wine region will largely dictate whether Chenin blanc is produced in a predominately sweet or dry manner, while the vineyard soil type will generally influence the overall style of the wine.

STYLE	FLAVOURS
Dry Chenin	tart pear, quince, ginger, and chamomile
Off-Dry Chenin	ripe pear, ginger, jasmine, passion fruit, and honeycomb
Sweet Chenin	dried persimmon, toasted almond, mango, ginger, and mandarin orange
Sparkling Chenin	Styles can range from dry (Brut) to sweet (Demi-Sec), with flavours of quince, yellow apple, plum, ginger, and floral notes
Oaked Chenin	Added flavours of buttered popcorn, butterscotch, lemon curd, nutmeg, baked apple, meringue, marzipan, brioche

A New World Nebbiolo taking on a classic Barolo

If you like your wines big, bold, and red, Nebbiolo needs to be on your radar. Hailing from Northern Italy's Piedmont region, this grape is known for producing powerful, full-bodied, and mercilessly tannic wines—all while looking as pale as Pinot Noir! Most famously, it's the grape that goes into Barolo and Barbaresco, two of the world's most revered (and more expensive) wines.

As a wine, Nebbiolo wines look light, and they also smell light too, with disarming red fruit and rose aromas swirling around the nose. That all changes the second it goes into your mouth. If you didn't understand the concept of "grippy tannins" before, you will now as leathery goodness clings to your teeth, tongue, and gums. Expect that to be followed up with striking flavours of cherry, coffee, anise, and primordial earth.

With such a large amount of tannin, you'll want to pair these wines with foods that feature fat, butter, and olive oil, and nothing too lean. Your first thought will probably be rustic, Italian fare, and that's a great place to start! Nebbiolo also goes surprisingly well with savoury Chinese dishes and spice-driven Asian cuisine.

If you're feeling adventurous, New World Nebbiolo can be a pleasant surprise. Wines from Australia have shown promise with less brooding, still tannic stylings, as well as with sweet floral notes and fresh fruit characteristics. Juicy and delicious especially from South Australia and Victoria.

A look into classic Left Bank & Right Bank Bordeaux compared with New World counterparts

When most people think about wine today they tend to think about French wine first. While it isn't the oldest wine nation in the world, France remains an unquestionably dominant wine region for so many reasons.

Bordeaux simply rolls off the tongue as perhaps the most iconic and most symbolic wine style of France. With beautiful Chateaux, luscious fields and legendary labels worth thousands, it sells glamour for days and the world keeps asking for more.

The Right Bank of Bordeaux mainly grows Merlot and Cabernet Franc, and they make red wines that are lighter and finer than Left Bank wines. The two most prestigious appellations of the Right Bank are Pomerol and Saint-Émilion, which both have many satellite appellations.

The Left Bank can be further divided into two sections.

The northern part of the Left Bank is called Medoc, and it's the best place for growing Cabernet Sauvignon. Some of the world's most expensive and age worthy wines are made here. Some examples of premium appellations in Medoc are Pauillac, Margaux and Saint-Estéphe.

The southern part of the Left Bank is called Graves, and while it makes some fantastic, more robust Bordeaux reds, it's most famous for making premium white Bordeaux (Pessac-Leognan) and sweet botrytis wines (Sauternes).

The definition of a Bordeaux style red blend wine set forth is a wine that has some or all of the five allowed red grape varieties as permitted in Bordeaux, France: Cabernet Sauvignon, Merlot, Cabernet Franc, Petit Verdot and Malbec.

Understanding Oak

Most of us know that the majority of red wines, almost all fine wines and even some white wines are all aged in oak barrels. The big question is why? What purpose does the oak serve? Are there any disadvantages? What are the advantages? How does French oak differ from American oak? Basically, what is oak all about?

The History of Oak Barrels

The earliest coopering (barrel making) practices date back to 2690 BC when straight sided, open buckets were used to transport liquids in ancient Egypt. It was only much later, during the Iron Age (800-900 BC), when the first fully sealed barrels were developed to hold wine, beer, milk, olive oil and water. It wasn't until the 1600s that European explorers really figured out the benefits of the oak barrel. The trade and transportation boom around the world was in full swing, and oak barrels had many advantages apart from being a storage vessel: they were strong and durable, their cylindrical shape made it easier to transport them from place to place by rolling them and, most importantly, it become evident that certain liquids, such as wine, benefited from being stored in oak for long periods of time. This is what created the cooperage industry, and why it is still thriving today.

If it weren't for the fact that oak barrels were initially used as storage vessels, and then the realisation that the oak actually benefitted the wine, it is highly unlikely that winemakers today would have ever thought of adding the dimension of oak flavour into their wine. So, we could say that it is a happy, historical coincidence that wine and oak form the perfect marriage to create a richer, more complex flavoured and textural wine.

Understanding Oak

How Does Oak Enhance the Wine?

There are two main things to focus on to understand how oak barrels enhance wine. While we could get very scientific and technical, not to worry, as I'll break it down in a very easy-to-understand manner!
Firstly, when red wines are ageing in the barrel, a process called controlled oxidation occurs, which is a slow, gradual process. This benefits the wine by reducing the astringency and increasing the colour and stability. With oxidation, a 300-litre barrel can lose up to 25 litres of liquid in a year, so winemakers need to continuously fill and rack (transfer the wines from one vessel to another) the barrels throughout the year. Racking helps to improve the clarity of the wine (a kind of natural form of filtering and fining), as well as allows the wine to receive enough oxygen that will help in enhancing the fruit flavours to become more complex flavours.

Secondly, there are five classes of chemical compounds found in oak. Each imparts its own flavour and texture to both red and white wines, the most common being vanilla, followed by sweet, toasty notes and lastly tea and tobacco. All of these compounds add to the overall complexity of the wine by augmenting the tannin that comes naturally from the grape (seeds, stems and skins).
Let's break down the five chemical compounds (this is the scientific part).

1. Volatile phenols: Induce the vanilla flavours
2. Carbohydrate degradation: Contains furfural, which imparts the sweet, toasty aromas
3. Lactones: Add the "woody" notes
4. Terpenes: Provide the addition of tea and tobacco flavours
5. Hydrolysable tannins: Reduce the astringency to benefit the overall mouth feel

It gets even more technical, based on the different barrel-making techniques and the type of oak that is used. All of this has an impact on the overall flavour and texture characteristics of a wine. So, what exactly are these difference? There are many, and you will be amazed at how the smallest of these can play a big role in the outcome. Let's see what it's all about, shall we?

- American oak vs French oak
- Sawn wood staves vs hand split wood staves
- Boiling water, steam, natural gas or wood fire to bend the staves
- Natural air drying vs kiln drying
- Low, medium or high toasting

As you can see, barrels are extremely beneficial to the enhancement of wine in so many different ways. Both winemakers and coopers have different opinions when it comes to choosing the right oak for their wine, but that is what makes each and every wine so unique. We also must take our hats off to the coopers who make these barrels, as it is no easy task. Without them, we would not be able to enjoy the diversity of the drop we love so much.

Understanding Oak

French Oak vs American Oak

So, there are many pros and cons to using oak barrels, regardless of where they come from. Some of the pros we have already discussed, such as the great flavour extraction and well-intergrated tannins, which add quality and value to the wine, but what are the cons? One of the cons is price; oak barrels are very expensive. French oak is the most expensive and can range between US$850 and US$4,000 for a single barrel, compared to American oak, which can range between US$500 and US$1,500. Barrels also take up a lot of storage space and need to be stored in temperature- and humidity-controlled environments. Barrels are also very labour intensive; cellar workers need to constantly clean, top up and stir them. However, even though the cons may seem to outnumber the pros, oak barrels ultimately benefit the end product.

Next, let's look at the differences between the two major oaks that are used to better understand how they differ.

French Oak

- Species: Quercus Petraea (European white oak)
- Has a finer grain and a richer contribution of aromatic components like vanilla
- Higher tannins, yet elegant, soft smooth wines are produced, due to the finer grain
- French oak typically comes from one or more primary forests: Allier, Limousin, Nevers and Vosges; the wood from each of these forests has slightly different characteristics
- Staves are hand spilt
- Wood fire is used to bend the staves and toast the barrel
- Natural air drying for 24-36 months
- Only 20-25% of the oak tree can be used

Flavours that French Oak induces based on the level of toast

Light Toast	Medium Toast	Heavy Toast
Vanilla bean, caramel, baking spices	Cedar, cigar box, chocolate, baking spices	Crème brûleé, cinnamon, ginger and clove

Understanding Oak

American Oak

- Species: Quercus Alba (North American white oak)
- Fast growing and wider grain, allows for more oxidation, making wines more intensely flavoured
- Lower tannins, but bolder, more powerful wines are produced, due to the wider grain
- Grown mostly in the north-central states of Minnesota, Missouri and Wisconsin; the wood from each of these forests has slightly different characteristics
- Staves are sawn
- Kilns are used to bend the staves and toast the barrel
- Kiln dried
- 40-50% of the oak tree can be used

Flavours that American Oak induces based on the level of toast

Light Toast	Medium Toast	Heavy Toast
Vanilla, Almonds	Honey/caramel, toasted coconut, coffee	Espresso, cedar, tobacco

French oak can be more elegant, while American oak can be more assertive, although it primarily comes down to how the different oak types are used, just like salt and other seasonings. We know from experience that different foods have natural affinities with one another, whether it's a spice rub for your barbequed steak or a dill sauce for grilled salmon. The same pairing concept applies to grape varieties and wood.

Cabernet Sauvignon, Pinot Noir and Chardonnay have a special affection for French oak, whereas Zinfandel molds better to American oak. Then you have Shiraz and Merlot, which love a bit of both. So, when it comes to blending different varieties, all sorts of elaborate oak aging might be used.

Understanding Oak

Hand Split vs Sawn Wood

Unlike wood sawing, which obviously uses a saw, hand split wood uses tools such as a hammer and wedge, splitting maul, cleaving axe, side knife and froe. How they differ is that hand spilt wood is split along the grain which results in a much stronger stave. The only disadvantage of hand splitting wood is that it is very time consuming, but it does result in a higher quality cut. This also adds to the overall value of French Oak by having a tighter grain that is stronger which also warrants an increased price tag per French Oak Barrel.

Natural Air Drying vs Kiln Drying

Kiln drying is a forced but controlled process where humidity and temperature are controlled using steam and fans. The drying process normally takes between 6-8 weeks due to the high temperatures. Air drying however, is a lengthy process which takes between 24-36 months.

Air dried oak is a known to be a coopers best friend, it is much easier to work with and is more stable than kiln dried oak because it is not forced dried through high temperatures, but rather by a slower, natural process. As the oak air dries naturally, the cells within the wood collapse slowly, causing them to compress and stay put, so when air dried oak absorbs moisture, it doesn't swell as much hence it becomes more stable. Kiln dried oak will result in the cells collapsing quicker making the wood less stable and when moisture is absorbed, the cells expand rapidly.

The advantage of air dried oak is that it will be a lot stronger compared to kiln drying which can lead to oak becoming brittle and weak if not looked after properly.

Oak & Oak Alternatives

TYPE OF OAK	PURPOSE
French	Less porous, so slower oxidation aiding the wine to build structure
American	More porous, faster oxidation to fatten a wine and give more body and fullness
Hungarian	Allows for a much earlier oxidation resulting in a wine with more longevity on the palate
German	Good for colour extraction and colour stability
Oak Staves & Chips	Cheaper alternative, used in bulk wines to add some structure and secondary flavours however not as impactful as an oak barrel

Understanding Oak

The Differences in Toasting Levels

Light Toast

- Suitable for wines which require minimal aroma enhancement and higher tannin content (Pinot Noir)
- Offers a significantly greater earthy aroma with mild wood notes.
- Results in the development of fresher flavours.

Medium Toast

- Imparts significantly greater complex and toasty aromas.
- Longer toast periods result in a greater breakdown of Lignin, producing the stronger vanilla aroma.
- Overall taste imparted onto the wine is rounder.
- Offers greater notes of oak, vanilla, and caramel.
- Ideal for full-flavoured wines.

Heavy Toast

- Ensures nearly complete breakdown of the chemical components present in oak. (The volatile phenols, carbohydrate degradation, lactones etc.).
- Ideal for wines seeking a full impact of complex aromas and flavour notes with a lesser contribution of tannins to the wine structure.
- Imparts a deep smokey and roasted coffee taste and aromatic profile onto the wine.

Toasted Heads (Heads of the Barrel)

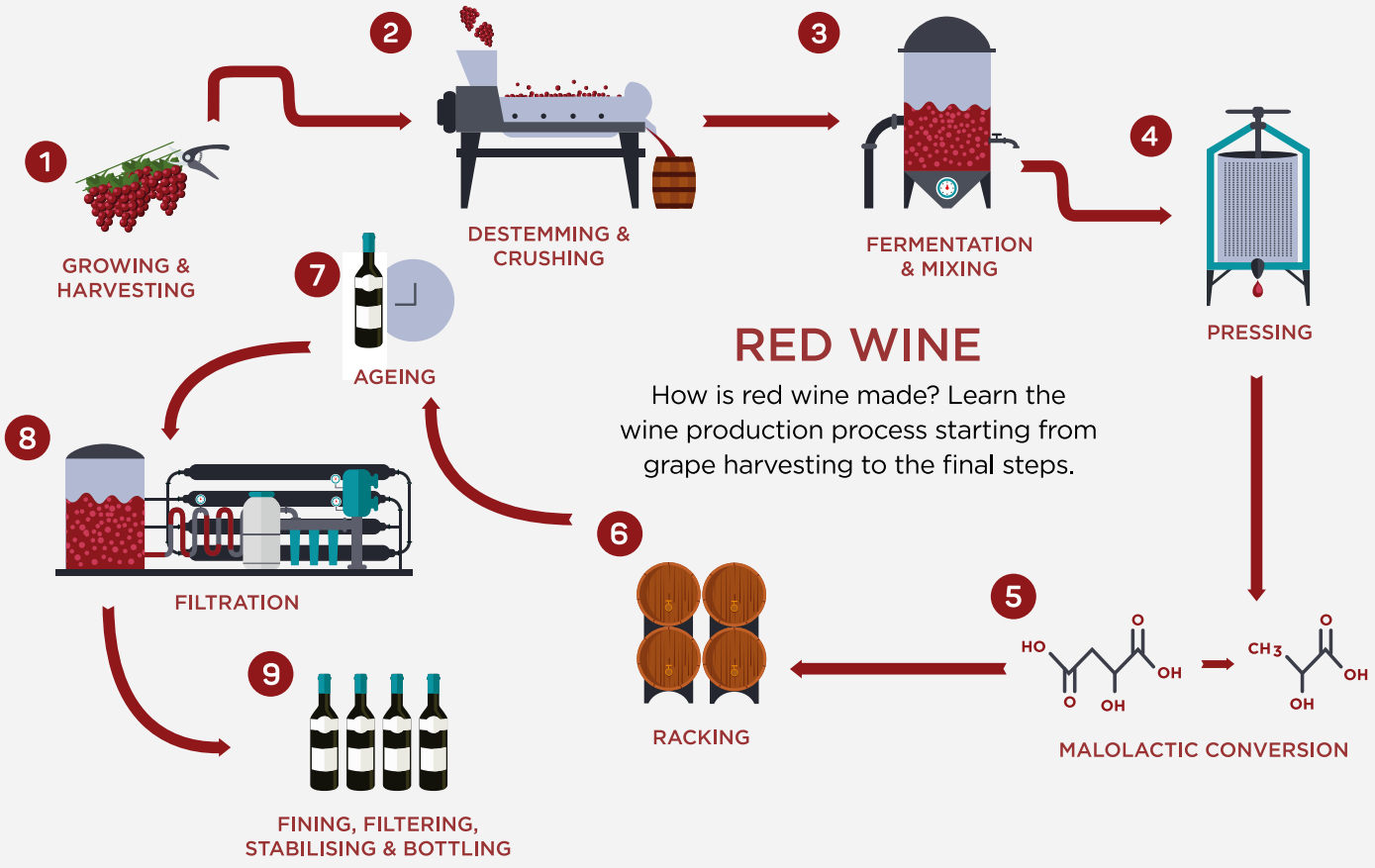
- You might be surprised to believe that the heads of a barrel make up 30% of the total oak surface area.
- Useful in reds with sufficient tannins, allowing for greater consistency in the wines characteristics.
- Works well with medium weight white wines (Chardonnay).
- Depending on the structure of the wine you are aiming to produce, it may or may not be beneficial to use toasted heads.

Light-bodied reds are very aromatic. The grape's thin skins make the colour of the wine a bright ruby red. These wines are high in acidity but don't expect a lot of tannin from them. They're fruity and delicious.	**Medium-bodied reds** are juicy and make great food-pairing wines. They have dominant red fruit flavours and are generally very well balanced with a good amount of tannin and acidity. Most of these wines will have spent some time in oak, which adds a layer of complexity but it's not a must.	**Full-bodied reds** have bold flavours, higher tannins and a darker colour that is attributed by thicker skinned grapes. These wines spend longer periods of time in oak and are very age-worthy.
Examples • Gamay Noir • Pinot Noir	**Examples** • Merlot • Sangiovese • Grenache • Cabernet Franc	**Examples** • Cabernet Sauvignon • Syrah/Shiraz • Nebbiolo • Malbec

American Oak Shiraz tackling a French Oak Syrah

Syrah and Shiraz are the exact same grape, much like Pinot Grigio and Pinot Gris are also the same grape. So, whether you're drinking a wine called Syrah or a wine called Shiraz, the wine is made from the same grape. In France, the grape is called Syrah, while in Australia the grape is called Shiraz. Generally speaking, if your label says Shiraz, the wine is from the New World. Most producers around the world follow the French and call the grape Syrah, but there are a few exceptions.

Although Syrah and Shiraz are the same grape, stylistically they make very different wines. The majority of Australian Shiraz tends to be extremely fruit-forward, with very ripe, almost jammy fruit flavours. However, more elegant, restrained styles of Shiraz are being made by smaller, boutique producers. In France, the Syrah grape is the star of the Northern Rhône Valley, where it tends to produce wines that offer darker fruit flavours balanced by savoury notes, like cured, or smoked meat. Keep in mind that these are generalizations, and that style depends on many factors.



Wine Faults

So, what are wine faults you might ask? A wine fault is a specific chemical compound that can appear at any stage of the winemaking process and are most often a result of poor winemaking practices or incorrect storage conditions. Each chemical compound associated with the wine fault will give off its own unique flavour, aroma, and even appearance in the wine. Wine faults can be grouped into three main categories based primarily on their origin

1.) Microbial Wine Faults

Microbial wine faults are caused by microorganisms (yeast & bacteria) that have come in contact with the wine throughout the winemaking process. These faults include Brettanomyces (barnyard), and Cork Taint (wet basement).

2.) Oxidation Wine Faults

Oxidation wine faults are a result of exposing the wine to excess amounts of oxygen after the alcoholic fermentation has completed. These include, Acetic Acid AKA Volatile Acidity (vinegar), and Ethyl Acetate (nail polish remover). These faults are produced by yeast and bacteria that require oxygen to survive in the wine. Commercial yeast strains will produce all three of these chemical compounds during the fermentation but at levels that are too low to perceive in the wine.

3.) Sulphur Wine Faults

This category of wine faults produces some of the most off putting aromas found in wine, but luckily, they are the easiest to prevent. These include, Sulphur Dioxide (matchsticks), Hydrogen Sulphide (rotten egg), and Mercaptan (onion). Hydrogen sulphide is typically the first of these faults to form in the wine during the primary fermentation. If it is not identified and remedied at this point it can react with alcohol in the wine forming mercaptan which smells like onion, garlic, or skunk (Phewww!).

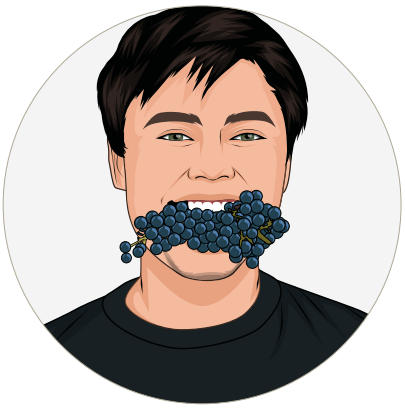
TYPE OF FAULT	CAUSE OF FAULT	CHARACTERISTICS ASSOCIATED WITH FAULT
Cork Taint	Trichloroanisole (TCA) – bacterial compounds found in cork trees or present within oak barrels	Moldy, musty, wet cardboard, damp forest floor
Brettanomyces	Active wild yeast found in old used oak barrels	Band-aid, barnyard, manure, horse stables
Volatile Acidity (acetic acid)	Spoilage from dead yeast or bacteria that is still present due to poor sanitation, or exposure to to much oxygen post-fermentation	Vinegar, Sharp Sour Tastes
Ethyl Acetate	Spoilage from dead yeast or bacteria that is still present due to poor sanitation, or exposure to too much oxygen post-fermentation	Nail Polish Remover
Sulphur Dioxide	To much sulphur added to wine or sulphur sanitizing solutions still present in fermentation vessels	Rubberbands, Burnt Matches
Hydrogen Sulphide	Due to a lack of oxygen, yeast nutrient deficiency, or if fermentation temperatures are too hot or too cold	Rotten Eggs
Mercaptans	If hydrogen sulphide is present in the wine, causing a reaction with the alcohol	Onion

Another huge thank you for participating in our
One Day Express Crash Course in Wine - Level 2,
we hope you enjoyed what we put together!
We sincerely hope that you've learnt a whole lot,
and are inspired to continue exploring the world of wine.

If you have any feedback or ideas on how you think we can improve,
please get in touch and let us know.

We'd love to hear from you!
Contact us here.

Keep exploring,
The Flying Winemaker Team



Eddie

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