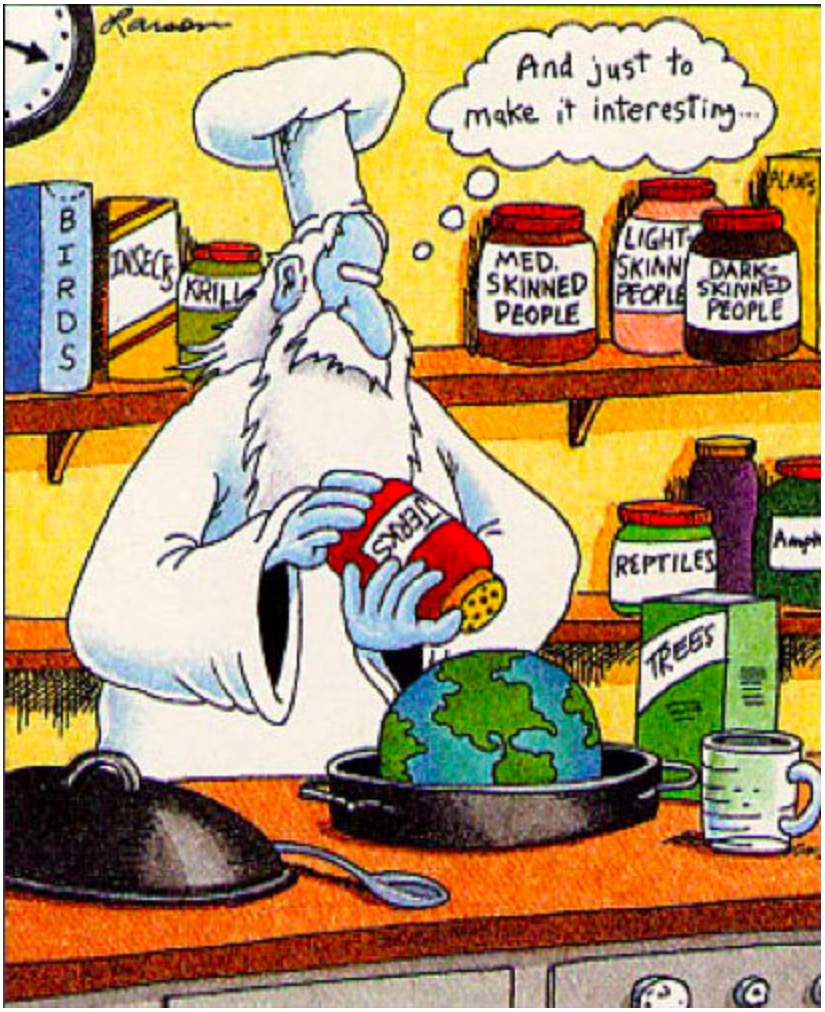
Wine Training Part 1



WINE BASICS

VINIFICATION & VITICULTURE

HOW TO TASTE

SIX BASIC STYLES OF WINE

FOOD & WINE PAIRING ELEMENTS

WINE BASICS

As we all know, wine is made from grapes. After grapes are harvested, they are placed in a clean container and crushed. Yeasts, which are necessary to produce alcohol, exist naturally in the vineyard and collect on the grape skins. Once the grapes have been crushed, these yeasts (or artificial yeasts added by the winemaker) interact with the sugar in the grape juice to produce alcohol, a process known as fermentation.

THE GRAPE

The grape has many parts both used and unused during the process of making juice. Winemakers have to decide which parts to keep with the wine after being crushed and which to remove. Stems contain a high amount of tannins and are sometimes kept with the grape juice in order to transfer those tannins to the juice. Because the pulp of the grape is colorless, the tannins and color compounds of the skin are necessary to give red wine its beautiful color. The pigment is transferred into the wine when the skins are left with the juice during fermentation. This process is called ***maceration.***

WHITE WINES are wines that contain little or no red pigmentation. These wines are almost always made from white grapes, but can be made from black grapes as well. Winemakers can make white wine from black grapes because the juice in most black grapes is actually clear. White wines can be sweet or dry, or somewhere in between.

RED WINES are made from black grapes and have a red or blue tint. Most grapes have colorless juice, so to make red wine the grape skins, which contain nearly all of the grapes' pigmentation, have to remain intact with the juice during all or part of the fermentation process. ***Tannins*** are also found in the grape skins, and are transferred into the wine while the skins are in contact with the juice. Besides the difference in color, the primary difference between red and white wines comes are tannins. Found mainly in red wines, they provide a dry, puckery sensation in the mouth and in the back of the throat. They also help preserve wine, allowing most (but not all) red wines to be aged longer than white wines.

ROSE WINES are pink in color, and can be referred to as rosé, pink or blush wines. Rosés are made from black grapes, but don't fully turn red because the grape skins are removed from the juice mere hours after contact. This brief contact with the grape skins gives the wine a pink color from the slight transference of red pigments from the skins. Rosés can also made by blending together white and red wines.

SPARKLING WINES, made from nearly any variety of grape, are wines that contain carbon dioxide bubbles. Carbon dioxide occurs naturally during fermentation, and winemakers around the world have developed special techniques to trap carbon dioxide in the wine. Popular sparkling wines include Cava, Champagne, Crémant d'Alsace, Moscato d'Asti and Prosecco.

DESSERT WINES are wines which have a high sugar content, making them a popular choice with or as dessert. They can be made sweet from many different ways. Popular dessert wines include ice wines, late harvest Rieslings, Madeira, Port, Sherry and Sauternes.

VITICULTURE

The vines have a regular growing cycle. Young berries start their life with a high acid content and low

sugar level. From the veraison on, the berry will accumulate sugars, phenolics, and aromatic components until it is ready to be harvested. The harvest decision is primordial for the quality of the fruit and the style of the finished wine. If the grapes are harvested too early, the aromas will not have the time to develop. However, if the winemaker waits too long, the resulting wine will be too high in alcohol and characterized with overipe flavors. The vine variety is also an important factor in the harvest decision, some vine being early maturing and others late maturing.

CLIMATE, TERROIR AND THE GRAPEVINE

Climate encompasses expected temperature, rainfall, sunshine, wind, and other atmospheric elements, and remains relatively stable from year to year—weather is the daily manifestation of climate, and is generally responsible for vintage variation. For temperature, the vine prefers a mean annual level between 50° and 68°F, with an ideal of 57°F. Sunshine, a requirement for photosynthesis—in which plants convert carbon dioxide into organic compounds, including sugars—is a necessary provider of both light and heat.

TERROIR

The concept of *terroir* comprises the choice of grapevine as it relates to its location, topography, soil, climate, and the hand of man upon it. *Terroir* is not only the soil; *terroir* is the entire system of factors that influence the development of the vine—factors that, depending on the style of viticulture and wine-making applied, may be magnified or subsumed in the resulting wine. Well-drained, easily penetrable soils with good water-retention are desirable, as they permit the vine to dig deeply for water and minerals. The heat-retaining (and reflecting) character of a particular soil is also an important factor, especially in correlation with climate.

PHYLLOXERA & ROOTSTOCKS

Although some modern vineyards are still planted on their own rootstock, most of the world's vines are grafted to American rootstock. Phylloxera, ravaged most of the world's vineyards in the late 19th century. Salvation came in the form of lowly American grapevine species—*Vitis riparia* and others—that were highly resistant to the root louse. A grower may select a particular rootstock not just for its resistance to phylloxera, but also its ability to withstand other diseases and drought.

OLD VINES

The yield of many commercial vineyards will begin to decline after 20 years, and vineyards are often uneconomical to maintain after 50 years of age. However, exceptional old vine plantings of a century or more of age exist, producing small yields but highly concentrated fruit. Old vine plantings of Rhône variety in Australia and Zinfandel in California are especially valued.

VINIFICATION

Ultimately, the job of the winemaker is to preserve the inherent quality of a grape as it becomes wine. However, the choices a winemaker faces in determining how a grape's character may be best expressed—and the tools at his or her disposal—are numerous. As in the practices of viticulture, some producers choose to emphasize the natural form of wine in its levels of unpredictability; others prefer to make their wines with the assurances that result from an industrialized process.

The agent of fermentation—**yeast**—is an important consideration for the winemaker. Cultured yeasts promise reliability. Ambient yeasts—often inaccurately identified as "native" or "wild"—inhabit the winery and come to life in the presence of must, although they are by nature less predictable than cultured yeasts. Many winemakers believe ambient yeasts create a more complex wine. Depending on the type of

yeast used, the wine will take as little as a week to more than a month to ferment dry.

In the milder climates of the Old World, **chaptalization**—the addition of sugar to the must to increase the final alcohol and glycerin content of the wine—is frequently practiced. Winemakers in warm regions may also choose to balance their wines through **acidification**: the addition of acid to must or to a finished wine.

M**alolactic fermentation**, also known as secondary fermentation or "malo", may take place in the wine. In malolactic fermentation, lactic acid bacteria convert harsh malic acids into softer lactic acids and carbon dioxide. It rounds out a wine's texture. Diacetyl, the compound responsible for buttery aromas in wine, is a byproduct of malolactic fermentation.

RED WINE PRODUCTION

After harvest, grapes may be sorted prior to being crushed and destemmed as damaged or unripe stems can cause undesirable green flavors in the wine.Crushing grapes, traditionally accomplished by foot, is usually carried out by machine—a crusher-destemmer.

Crushed red grapes will usually undergo a pre-fermentation maceration, which promotes the extraction of color and tannin. Occasionally, some juice will be run off prior to fermentation, in order for the producer to have a greater ratio of skins to juice, and therefore achieve more extraction. Grape skins are always included in red wine fermentation, as the winemaker hopes to extract the phenolics contained within grape skins—tannin, color compounds (anthocyanins) and flavor compounds.

After fermentation and any post-fermentation maceration, the winemaker will draw the high quality, free-run wine from the tank. High quality red wines are generally matured in oak barrels—the size and percentage of new barrels is determined by the style of the wine. The maturation period (***élevage***) ranges from a few months to more than two years in wood for some top Bordeaux and Napa wines, and the wines racked periodically during the process.

Prior to bottling, the wines will be racked a final time, and may be fined or filtered. Both processes ensure greater clarification in the finished wine, and filtration promotes stability in the bottle. Fining requires a fining agent to precipitate solids out of the wine: bentonite, casein, isinglass, gelatin, and egg white are commonly used. When employed in the fining process, casein (a milk protein), egg white, gelatin and isinglass (a material obtained from sturgeon bladders) may create a dilemma for vegans and vegetarians. Filtration, a more invasive and expensive process, is often accomplished through the use of pads. Many critics charge that fining and especially filtration strip the wine of character, and a growing number of winemakers are proclaiming their aversion to either method.

WHITE WINE PRODUCTION

White wine grapes are crushed and pressed prior to fermentation. Fermentation occurs at a cooler temperature for white wines than for reds. White wines are frequently clarified after fermentation, and may undergo cold stabilization—a process that causes tartrate crystals to precipitate out of the wine at a temperature of approximately 25°F. Light, aromatic white wines do not often undergo barrel maturation or malolactic fermentation, and will usually be bottled shortly after the conclusion of fermentation. White wines may be fermented to dryness, but fermentation is arrested for many aromatic white wines while some degree of residual sugar remains.

White wines matured in oak often undergo full or partial malolactic fermentation. Fermented wine,

whether in tank or barrel, may be left in contact with the lees in order to encourage malolactic fermentation and supplement richness and body in the wines. White wines matured in oak, such as the classic wines of Burgundy or Graves, are typically bottled after 9 to 18 months in barrel. They may be fined or filtered prior to bottling.

OAK

Oak allows gentle, slow oxidation to occur, rounding out and softening the texture of wine. The smaller the oak container, the more marked this effect is. New oak also contributes flavor such as vanilla—and wood tannin to wine, but this effect is dulled upon repeated usage. However, a neutral barrel can still be useful, especially if new wood flavor is not desired. The use of oak chips is a cheaper alternative, although they will not provide an oxidative effect. The flavor imparted by an oak barrel is dependent on the level of toast and the type of wood. A barrel is subject to light, medium, or heavy toasting.

WINE LAW

Wine laws are legislation regulating various aspects of production and sales of wine. The purpose of wine laws includes combating wine fraud, by means of regulated protected designations of origin, labelling practices and classification of wine, as well as regulating allowed additives and procedures in winemaking and viticulture. Old World wines tend to have more stringent regulations than New World wines. Various wine laws, however, may include appellation-based regulations that cover boundaries as well as permitted grape varieties and winemaking practice-such as the French *Appellation d'origine contrôlée* (AOC), Italian *Denominazione di origine controllata* (DOC), Spanish *Denominación de Origen* (DO) and Portuguese *Denominação de Origem Controlada* (DOC).

UNITED STATES

An **American Viticultural Area** is a designated wine grape-growing region in the United States distinguishable by geographic features, with boundaries defined by the Alcohol and Tobacco Tax and Trade Bureau (TTB), United States Department of the Treasury. The TTB defines AVAs at the request of wineries and other petitioners. There were 198 AVAs as of January 2010. The Augusta AVA near the town of Augusta, Missouri, was the first recognized AVA, gaining the status on June 20, 1980. If an AVA name appears on the label that at least 85% of grapes used to produce the wine must come from that AVA. The appearance of grape variety (or varietal) and vintage year is also regulated by US wine labeling laws with requirements of at least 75% for the grape variety. Additionally, all US wine must include the Surgeon General warning about dangers associated with alcohol consumption and a warning about the possible use of sulfites.

FRANCE

In 1935, the Institut National des Appellations d'Origine (INAO) was created to delimit and enforce France's wine appellation system. The Appellation d'Origine Contrôlée system, stipulated limits on yields, vineyard density, training and pruning techniques, grape varietals, methods of production, minimum alcohol levels, minimum must weights, and the geographical boundaries of each appellation. AOC wines must pass a tasting panel. The Appellation d'Origine Contrôlée (AOC) became a model for many other European appellation systems, as France's controlled appellations assured authenticity and, to a degree, style. In 2007, the INAO brought its appellation system in line with new EU standards in 2009, and established the category of Appellation d'Origine Protégée (AOP). Going forward, producers may choose to use one or the other on their labels.

The Vin Delimité de Qualité Superieure (VDQS) category was created as a steppingstone to AOC, but the

INAO eliminated the category in 2011, with most remaining VDQS regions advancing to full AOC/AOP status. Regional wines are released under the Vin de Pays classification, a less restrictive category of widely varying quality. Just as AOC and AOP now coexist, Vin de Pays producers may now choose to label their wines as Indication Géographique Protégée (IGP).

Table wines (*Vin de Table,* or *Vin Ordinaires*) comprise the lowest quality rung of French production. Previously, table wines could not state varietal, vintage, or place of origin on the label. As of 2009, the table wine category was rechristened *"Vin de France"*, and both vintage and varietal may now appear on the label. This change, designed to allow basic French wines to compete with New World varietal wines, coincided with the approval of new practices for table wines, including acidification and the use of oak chips.

Current French Wine Classifications

- Appellation d'Origine Contrôlee / Protégée (AOC/AOP)
- Vin de Pays / Indication Géographique Protégée (IGP)
- Vin de France (Table Wine)

Sight: the Most Overlooked Aspect of Tasting

- Clarity: is the wine clear? Is it hazy? If the wine is clear odds are it's been filtered.
- Brightness: is the potential of a wine to reflect light, itself a function of the wine's clarity. Cloudy - Hazy - Dull - Bright - Day Bright - Star Bright – Brilliant
- Color: or "hue" as the Brits say. Color, more than anything, speaks to the age and condition of a wine.
    - White wines: Straw - Yellow - Gold – Brown
    - Pink Wines: Pink - Salmon – Brown
    - Red Wines: Purple - Ruby (red) - Garnet (brown or yellow) – Brown
- Secondary colors: is there more, you ask? Absolutely. Take that glass and tilt it against the white background. Look specifically at the outer edges of the glass.
- Rim Variation: is a function of the color of an older wine. With red wines, the older the wine, the more variation in color.
- Sediment or particles: one often comes across sediment in wine, both white and red.
- Legs: we look at the legs/tears of a wine to get a clue about the alcohol level and body of a wine (or the presence of residual sugar).

Nose: the Most Critical Aspect of Tasting

- Fault factor: anything smell "off"?
- Fruit: once past the flaw check the next thing to consider about the nose of a wine is the fruit qualities.
- White wines: Tree fruit, Citrus fruit, Tropical fruit, Stone or pit fruit, "Other"
- Red wines: Red fruits, Black fruits, Dried or desiccated fruit
- Secondary aromas: as with the color there are usually secondary aromas and flavors in wine.
- Earth: that's right, earth as in dirt or minerals.
- Wood: The oak will make itself apparent in the form of aromas of smoke, toast, sweet baking spices (from caramelizing the inside of the barrels).
- Alcohol: confirms what you've already seen in the legs or tears of the wine. Alcohol makes itself known in the form of heat in the nose.
- Age: youth versus vinosity. Does the wine smell of bright, youthful fruit? Or are there earthier, spicier flavors?

Palate: Confirming the Nose and Assessing Structure

- Dryness/sweetness: how dry or sweet is the wine? Bone dry or simply dry like most table wines?
- Alcohol: as in the nose we're looking for the sensation of heat, this time in either the throat or chest cavity.
- Finish: or the aftertaste of the wine. Is it a short, medium or long finish?
- Balance: When tasting a wine ask yourself if there is harmony among all these elements? Or does something stick out like the proverbial sore thumb?
- Complexity: In its most basic terms, complexity can be defined as the amount of aromas and flavors in a wine combined with how much the wine changes as it travels across your palate.

SIX BASIC STYLES OF WINE

LIGHT WHITES: These are dry whites that are high in acid and light in body. Texture is reminiscent of non-fat milk and seldom feature oak flavors on the palate. The color is in the watery, pale straw or pale yellow category. Aromas and flavors remind you of green things in a grocery store: limes, herbs, green apples, green pears, etc. Over profile is light bodied, tart and citrus driven. Albarino, Dry Chenin Blanc, Gruner Veltliner, Orvieto, Pinot Blanc, Pinot Grigio & dry Pinot Gris, Moscofilero, Dry Riesling, Muscadet, Sauvignon Blanc, Soave, Torrontes and Dry Muscat. Pair these wines with foods you would squeeze a lemon on or dishes featuring vinaigrettes or citrus component. Food prep can be be light - poached, steamed or raw or oily: fried and crispy.

SWEET WHITES: Depending on the varietal these are lighter-to-full-bodied whites that have a sweet sensation. The sweetness comes from actual residual sugar in the wine. The flavor and aromatics will differ from varietal to varietal but most feature some type of floral aroma such as honeysuckle. Flavors of peaches, apricots and other stone fruits are also quite common. Look for German style Riesling, Alsace style Pinot Gris, Gewurztraminer, Vouvray style Chenin Blanc and riper Gruner Veltliner. Pair sweeter wines with salty or spicy food. They are also a nice compliment to Asian fare as they are seldom produced with oak and pair nicely with the sweet, tart and spicy flavors.

HEAVY WHITES: These are full-bodied whites with a texture reminiscent of whole milk. The acidity in these wines is often low while the texture is round, soft and silky (especially wines from warmer climates). The color is in the yellow, gold and deep gold family. Many heavy whites have been exposed to oak aging which increases the color and richness on the palate. The aromas remind you of yellow things in a grocery store: yellow apples, bananas, pears, mangos and other tropical fruits as well as butter. Look for Chardonnay, Viognier and White Rhone blends. Pair these wines with foods that you would serve with drawn butter or a creamy sauce such as mushrooms, seafood and roast chicken.

LIGHT REDS: Light in body and color, these reds have low amounts of tannins. The light red's fruit profile is reminiscent of tart and tangy red fruits such as strawberries, raspberries and cherries (use the color of the wine as a clue to determine the fruit aromas). Depending on the growing region, these wines can also

have a bit of astringency in the mouth. Each grape variety (Merlot, Cabernet Sauvignon, Syrah, etc.) has a different skin structure and flavor profile and the resulting color and texture of the wine will differ according to how thin or thick the grape's skin is. Grapes such as Pinot Noir, Gamay, Grenache and Sangiovese have thinner skins and will therefore produce wines that are lighter in color and in tannins. Pair these wines as a bridge between "difficult" situations such as a chicken and lobster. The tartness in these wines also pair well with foods that have more richness and oil such as duck and salmon.

SPICY REDS: These reds vary in weight, texture and body and are spicy in flavor. The fruit profile is often of riper or stewed fruits like boysenberry, blackberry and raspberry jam. These wines can also have natural aromas of black pepper, cloves, star anise, white pepper and other baking spices. Look for Zinfandel, Cotes du Rhone, Syrah, Shiraz, Amarone, Grenache and Primitivo. They pair well with smoked, stewed or braised dishes as well as sauces that are heavily seasoned such as hoisin or BBQ sauce.

HEAVY REDS: Being full-bodied, dark-colored and opaque, with heavy amounts of tannins are characteristic of heavy reds. The color and aroma will remind you of dark fruits such as blackberries, cassis, blueberries, plums and vegetal notes such as black olives, green beans or bell peppers. Heavy reds often see oak aging and are suitable for aging. Look for Cabernet Sauvignon, Malbec, Merlot, Cabernet Franc, Rioja, Tuscan Reds and Bordeaux. Tannins cut through protein and fat which is why heavy reds are an excellent pairing for steak and other red meats.

FOOD & WINE PAIRING ELEMENTS

RULE & NO RULES

- Subjective taste of the guest is the most important aspect
- No Rules but there are basic principles to build upon…
- Determine the primary/most dominant component of the dish and how to work with it
- Determine the supporting/minor players
- Don't forget the sauce or condiment!
- If a multi-course meal, think about the "arc" of wines: generally lighter to fuller body, drier to sweeter

STRUCTURE OF FOOD AND WINE

- **Body**
    - Weight of wine and food should match: Full with Full, Light with Light (otherwise one may overwhelm the other)
    - If wine is lighter bodied, must be powerful in flavor/high acid to stand up to the food
- **Alcohol**
    - Balances weight and body in food
    - Accentuated easily with too much spice heat or salt
- **Acidity**
    - Acidity of wine must match/exceed acidity of food (or will be "flabby")
    - Highlights the other core focal ingredients in food
    - Great balancer of sugar
- **Residual sugar**
    - Residual sugar of wine must match/exceed residual sugar of food (or will be bitter)
    - Counters physical or aromatic heat
    - Is a great match salty elements in foods

TEXTURES

- **Tannin in Wine**
    - Protein and fat will soften tannins
    - Certain fish + tannin = metallic
- **Oils/Fat/Butter in Food**
    - Acid and tannin (in red) can balance
    - Contrast of crisp wine often effective

OVERVIEW

- Matching weight with weight
- Acidity needs acidity
- Fish oils love acidity but hate tannins
- Tannins love fat but hate fish oils
- Acidity cuts saltiness
- Sweets need sweets
- Alcohol + spicy = fire
- Spicy + sugar = no fire
- Veggies and Soups can be challenging