

Secrets of the wine industry #2 --- Location, Location, and Location

It's a pretty well understood fact that the physical location of the vineyard can have pretty much determine the overall quality of the wine, it's bottle price, and its reputation. I mean, marketing and branding have well capitalized on vineyard location as a source of revenue for wine. Let's just take this and explore it a bit.

My wine from Napa, California costs \$75 a bottle, while your wine from Chile, although the same grape, and made the same way, costs \$15 a bottle. Why? How can location have so much of an influence? The answer is a complex one that takes into account how geophysical location affects the grapes and the mentality of the people who buy them.

First, let's talk about the grape shall we? The grape is mostly water with some soft fruit and a tannic skin. They are sometimes referred to as berries, clusters, fruit ... or just grape (singular). I can say, "did the vineyard yield 2 ton of grape?" Or I can say "how are the berries looking today?". No matter what the terminology used in the field, the grape boils down to just two distinct factors that play the biggest part in wine and in the quality of the wine; Acid and Sugar. The relationship between acid and sugar in the grape controls the alcohol content, the complexity and the balance of the wine. The grape skins contribute the color and the tannins (astringency) in the wine. The ratio of acid to sugar will either do two things; (1) it'll make a wine that is tannic, complex, and balanced or (2) it'll create an alcoholic viscous fruit bomb that so many people apparently enjoy nowadays.

At the beginning of the vine season, the grapes come in green (around April 1st); throughout the year they retain very very high levels of acid (low pH) with an equivalent low amount of sugar. Then the grape goes through Verison (yes, the same name as the phone company), where the vine begins to pump tremendous amounts of sugar into the grape. This changes the color of the grape from green to purple and subsequently increases it's size relative to acid concentrations. As the grape gets bigger, it's acids fall and it's sugars go up. At harvest, the grape has the two things the winemaker looks for, it's acid level and it's "degree's of sugar" otherwise known as Brix. Without getting too technical, just know that a formula is used to calculate a wine's respective alcohol levels based on it's brix. Remember, that fermentation converts sugar to ethanol and releases Carbon Dioxide and Dihydrogen Sulfide (CO₂ and H₂S) ... mmmm, yeasts.

Ok, locations impact. For the sake of argument, I'm sticking to California wines, but these rules also play into all the other wine growing regions of the world. Know that heat impacts the vine. So does the amount of water given and the soil it grows in. Soil that retains a lot of water is bad, while soil that has good drainage is good (think Bordeaux). Cool weather keeps the acids high and doesn't force the vines to pump as much sugar into the grape, while hot weather stresses the vine and forces higher sugar concentrations with lower acids (higher pH).

Now for a surprise, for the most part, high quality wines are ones that manage to find both high levels of acid and high levels of sugars or a close to 1:1 ratio. Finding 1:1 ratios in grapes is darn near impossible. Typically, a threshold of pH is desired relative to the sugar level. If I have a pH of 3.55 and a sugar level of 24 degrees brix, then that wine is going to be fairly acidic, complex and will require extra oak to help soften it. It's alcohol content will also be below 14% by volume. However, if I have a grape with a pH of

3.8 and a sugar level of 26.5 degrees brix, then my wine will have less complexity, but more fruit forward, will require less oak and will probably have an alcohol content bordering on 15% alc by volume.

Grapes on the easterly facing part of the vineyard will get more sun earlier in the day and will typically ripen first or have better combinations of acid / sugar levels. Vineyards that are located on the side of a hill will have better drainage than those that are flat. And finally, grapes that are in a cool environment will have more acid while those in a hot environment will have more sugar.

Different grape varieties like different climates. Pinot Noir does well in very cool, moist areas (like the coast of California), while Zinfandel can be at its best in the hot Central Valley (Lodi; BTW, Lodi produces 95% of all the country's Zin ... bet you didn't know that!) I can go on, but let's take a good look at Napa versus Lodi. How many of you have had a Napa Zinfandel? Or a Lodi Cabernet Sauvignon? Both grapes are made in both areas, but you think of Cabernet for Napa and Zinfandel for Lodi. Why? Simply, the geophysical location of each area is "tuned" to each grape varietal. Napa is a small valley just on the other side of the coastal range and slightly north of the San Francisco bay. During the summer, the cool fogs from the marine layer filter in and prevent tremendous amounts of heat from getting to the vines. Not to say it doesn't get hot from time to time, but for the most part, Napa has a very Mediterranean-like environment. Cabernet Sauvignon (CS) has smallish purple black berries in tight clusters. The ratio of fruit to skin is low. That is, when made into wine, there is an abundance of tannin and skin for fermentation relative to the fruity inside of the grape. That's why CS is typically a dark, tannic wine. Because the fruit mass is low relatively speaking to the skins (more skins = darker color). Coupled with the cooler climate, the acids are higher with lower sugars and hence the wines are complex and balanced --- a mark of a great wine. Napa is around because of its location pure and simple. Soil plays a big part of that as well, but I believe you get the point.

Lodi on the other hand is HOT; through and through. But Lodi has something that the rest of the central valley does not; it sits at the apex of the "Delta region" of California. All the rivers and inflows that move into the San Francisco bay comprise the delta. It's like a channel right into the central valley ... and Lodi is smack-dab in the line of sight. During the summer, the daytime temps soar to a very dry 100 to 105 degrees for weeks on end. This raisins grapes by evaporating the water out and concentrating the sugars (again, that's why the South part of the valley i.e. Fresno is the raisin capital of the world - nothing to cool off the grapes). But in Lodi, the delta breezes in from the coast come in the early afternoon and *cool* the grapes down, preventing them from raisining. The heat of the valley is concentrating the sugars, but the acids are also being retained in the fruit. Zinfandel fruit is a bigger berry and the clusters aren't as tight. The ratio of skin to fruit is higher and hence Zins are a lighter pigmented and bodied wine. Sugars are higher which is why Zin is typically a higher alc fruit bomb (if made that way). Now, don't get me started on the HOT wines of California (i.e. high alcohol), a recent trend that has the whole California Zin industry making "boysenberry syrup" wines ... save for a precious few.

Now days, wineries have been using special vineyard designations for their wines. Let me give you an example. Winery X special vineyard Syrah; wow - apparently, the special vineyard is quite nice since the vineyard next door, the special Y vineyard is cheaper by \$20 dollars. Do vineyard designations really make that big of a difference? The answer is sometimes. More often than not, it's a marketing gimmick to create the impression that the wine you are buying is better than its competitor because it comes from such a special place. Don't get me wrong, there are plenty of examples where different vineyards, even

different rows of vines, create different products ... some certainly are better than others; but remember that the wine making process does impact the wine so, by my viewpoint, to truly taste the differences in vineyards, both wines have to be made in identical ways.

As I stated above, the Napa valley wine is substantially more in cost that the Lodi brand. I think we can now explain why, but let's put some numbers to it and then run them into the bottle cost.

Napa Valley Cabernet Sauvignon can go for as little as \$5,000 a metric ton or as high as \$13,000 a metric Ton. Lodi Old-Vine Zinfandel is about \$1,500 a metric ton while Lodi Cabernet Sauvignon is about \$800. Let's break it into its chart and take the high prices per ton (we only want the best fruit!):

Location	Cabernet Sauvignon	Bottle Cost*	Zinfandel	Bottle Cost
Napa Valley, Special Vineyard X	\$13,000 / Ton	$\$13,000 / 720 = \$18 / \text{bottle}$	\$2,000 / Ton	$\$2,000 / 720 = \2.77
Napa Valley, unlisted vineyard	\$5,000 / Ton	$\$5,000 / 720 = \6.90	\$800 / Ton	$\$800 / 720 = \1.10
Lodi, Special Vineyard Y	\$1,000 / Ton	$\$1,000 / 720 = \1.38	\$1,500 / Ton	$\$1,500 / 720 = \2.00
Lodi, unlisted vineyard	\$800 / Ton	\$1.10 / bottle	\$1,000 / Ton	\$1.38

* Remember our formula from the last essay, one ton of fruit yields about 120 gallons or roughly 60 cases of wine (12 bottles to the case). Therefore: $12 * 60 = 720$ bottles per ton thereabouts.

Take a look at the Napa Valley cab from the special vineyard. Just adding the cost of the grapes (if you buy them directly) adds almost \$20 to the price of each bottle. Simple math, I know, but I believe this really illustrates why a price premium is paid for certain wines from certain areas. Also notice that the grapes from Lodi are closer in price (per ton) that the Napa ones. This is caused by the simple fact that Lodi produces more grapes than Napa and is relative to the laws of supply and demand. Lodi wines are cheaper because the grapes are a whole heck of a lot cheaper to purchase.