

Should I Buy a Humidifier for my Cellar?

A white paper by Chicago Wine Cellar Expert

Every morning at 5:30, I slip on a pair of gym shorts, a tank-top, and a good quality pair of running shoes. Moving quietly out my front door, I head for the end of my driveway. Once there, I begin jumping. I jump for at least fifteen minutes and note with satisfaction the resounding thump made by my shoes on the driveway, knowing that my life's purpose is fulfilled.

Not many understand why I do what I do every day, rain or shine, in warm weather or cold. But I know. For the Grigsby family is charged with the responsibility of keeping elephants from invading the streets of Chicago. For the past two-hundred years it has been thus. And during that period, not one elephant has been seen rumbling through the streets of Lincoln Park. Not one! We believe the vibration annoys the elephants and causes them to avoid Chicago. I may be wrong. I may be right. All I know is...it works.

The above story is illustrative of a similar question that arises when I meet with a client regarding a prospective cellar. Will adding active humidity to my cellar (at \$1,000 or more) really prevent my wine from going bad? The answer is very much akin to the question of keeping elephants out of Chicago. All we can say for certain is, *it couldn't hurt...but it's impossible to say that it helps.*

Conventional wisdom (also referred to as common knowledge) states that every wine cellar should have a constant temperature of 55⁰ and at least 70% humidity. It would be so easy for me to follow this well-worn path. My competitors do. Give the client what common knowledge says is *required*. Sell him a humidifier. Take the profit, and shut-up. But I love *drinking* wine. I said drinking, not storing. Personally, I look upon every dollar spent on wine storage as a dollar lost to the real pleasure of buying wine to drink, now or later. And, I try to treat people the way I would like to be treated.

There are three reasons that a humidifier is not required for my clients in Chicago.

- 1) We live in the Midwest. We are immersed in humidity from Spring through Fall. And during the winter most houses have active humidifiers that maintain the humidity within the house at 30% or higher.
- 2) The moisture saturation point for cork is 12%, see information below. When I invest in something like a humidifier, I expect to see a return. Physics tells us that adding higher than 12% humidity to a cork closure yields no additional moisture within the cork. In fact, the majority of cork failure is tied to excessive head pressure in the neck of the bottle. Adding humidification to a wine cellar will do nothing to alleviate this issue. There are so many reasons wine goes bad from cork taint to improper storage/shipment that being able to single-out one particular cause like cork crack is nearly impossible.
- 3) A humidifier sold in the wine storage industry has a humidistat with $\pm 10\%$ variance. If one truly wishes to maintain humidity at 70%, one must invest into a humidification system like the ones used in IC manufacture. These systems are expensive, and once again, the cost/benefit calculation is not in the client's favor.

Background information:

In 1898, Louis Pasteur declared oxygen to be the enemy of wine. However, there are many factors that can cause wine to go bad. The seeping of oxygen into a wine bottle caused by a dry cork is only one of a score of reasons wine can go bad over time.

With the globalization of the wine business during the last half of the twentieth century, containers of wine now move around the world. These containers may or may not be refrigerated. They may ride above deck or below. Each may bake in the sun on a dock or in a truck from the port to the warehouse. Warehouses may be refrigerated, insulated, or neither. As the wine moves through the distribution chain from the retail store to the buyer, the cork may be intact but the wine can be vinegar.

We know that the moisture saturation point of cork is 12% based upon research conducted by Dr. Vern Singleton, Professor Emeritus College of Enology at UC Davis and the 2011 inductee into the Vintners Hall of Fame. In an interview Dr. Singleton responded to questions about humidity in a wine cellar in this way.

"Ah, humidity," you say, 'what about the humidity?' Well, most of us don't live in the Gobi Desert... Actually, the main concern here is with too much humidity, not too little. If the humidity is high, the bottle will acquire some mold and the label will rot a bit, which may impress your friends, as it obscures the fact that the wine you are pouring in May was still a grape last September!

But seriously, as long as the humidity is in excess of 12%, which is the moisture saturation point for a cork, the cork will not dry out. Humidity has no other effect on the aging process. How long should you age various wines? The answer to this one is sort of like betting the horses. Everyone has a different idea as to how long the race will last and who will win. Has the wine lost its fruit? Is that good or bad? When does "mellow" become bland?"

For those of you concerned about humidity, I proffer these insights. You live in the Midwest. Humidity in the summer is oppressive. In the winter, relative humidity drops but hardly ever below 30%. (If your home ever experiences humidity in the 12% range, the static electricity in the rugs will alert you immediately.)

Any relative humidity above 12% is adequate. Someone might ask, "If 12% is adequate is 24% twice as adequate?" Think about a wet sponge within the confines of a Petri dish. If the sponge is sufficiently moist so that it expands to the sides of the dish and completely seals the edges of the dish, will adding more water serve to expand it further? Any added water will simply lie on top of the sponge. The question is not a function of relative humidity but the ability of the sponge, and (in wine's case) the cork material, to hold moisture.

The next time you open a long-celled bottle of wine, look at the cork. Note how far the wine molecules migrated from the base of the cork into the body of the cork. Over one-half inch of migration is unusual. The wine (which is primarily water) may have rested against the end of that cork for a long time. Under this condition and over the specific span of time, the liquid molecules were only successful in moving through one-half inch

of cork at most. If molecules of water resting against a cork cannot pass through a cork in a bottleneck, how successful are water molecules in the air going to be?

If you wish to know more about cork and wine, check out some of the recent articles comparing cork and synthetic cork to Stelvin (screw-cap) closures. Not only are the issues of air infiltration considered at length but also the problem of cork taint (TCA contamination). And, given the success of Stelvin closures, the Cork Quality Council (yes, there is one) now says that a little oxygen is good for wine aging. See *Post bottling reduction and permeability performance*, by Dr. Alan Limmer on the Council's website.

Bob Barr, one of the premier wine advisors in the Midwest provided me an email he wrote to one of his clients regarding humidity requirements in a Midwest wine cellar. Bob is a heavyweight in wine. He's forgotten more than I know.

I don't necessarily agree w/ Meltzer, especially for cellars in the Midwest. If someone was living in a desert, well that is another story.

Before wines were "bottled" (1800's), common practice was to ship and store wine in wooden casks or barrels. Private consumers bottled their own wine from the cask. In fact, wine was commonly stored in casks 4-6 years before bottling.

Wood is porous. High humidity, which kept the staves tight and wood moist, reduced evaporation and helped keep the wine in the barrel. Storing wine in caves at 70% humidity made sense with those storage concerns.

Today, wine is bottled, and therefore impervious to moisture or high levels of humidity. The cork hermetically seals the bottle. The sides of the cork are surrounded by glass. When cut, the cork cells become like miniature suction cups when the cork is placed in the bottle.

Cheers,

bob

Bottom-line, here's the choice. I will be happy to take your thousand dollars and provide you with a basic system...just like my competitors. You will invest a measurable amount of money and will receive a return that cannot be measured.

My advice? Take the thousand dollars you were going to spend and treat it like an inheritance. If Aunt Sally had left you a thousand dollars, out-of-the-blue, you might spend it on some really nice wine. Spend the grand on the vino! Happy drinking.

My best,

Rick Grigsby
President
ChicagoWineCellarExpert.com