



Wine bottle glass colors are carefully chosen to preserve wine integrity and improve marketability.
Image Source: Flickr user Alex Brown

I feel blessed to live in one of the most beautiful areas in our country. The Pacific NW offers the perfect climate and landscape for summer recreation and one way to enjoy the great outdoors is to spend a Sunday afternoon driving through the hills and valleys of this region. A quick drive into the country can lead to beautiful landscapes covered with rolling vineyards and architecturally beautiful wineries. The wine industry has grown significantly in this area over the past several decades and in just an afternoon you can stop by more than a handful of destinations and sample a large variety of fine wines. On our last winery tour I was given yet another lesson on wine tasting, but this time the conversation was not about the actual wine itself. In fact, I spent nearly an hour with the vintner discussing wine bottle glass colors. You may be wondering how the color of the bottles could possibly warrant that much attention, but in truth it plays a significant role in wine integrity and marketability.

Most wine connoisseurs know that proper storage conditions greatly affect the quality of wines. Light and high temperatures are the main culprits for altering wine integrity and can have a direct effect on taste and color. "Studies have shown that the color of the glass affects the color and aroma of the wine within when exposed to light; specifically it was found that green bottles have a greater protective effect against light than lighter colored bottles when held at a constant temperature. Interestingly, other studies have found the exact opposite, so it's not completely clear what is going on inside those bottles when exposed to light."¹ Glass color measurement provides insight on how light affects wine after bottling and can help wine producers make important choices when it comes to bottling quality wines.



Monitoring glass color with advanced spectral technology provides the data needed to make the best choices in bottling options. Image Source: Flickr user dpotera

Measuring Glass Color

Wine bottles are available in a wide array of colors such as arctic blue, antique green, flint, and clear. Vintners often choose a bottle color to increase marketability and brand name recognition. However, glass color is also important when it comes to protecting the quality and integrity of fine wines as well as adding to the visual appeal. Because bottle color affects both light exposure and internal temperatures, storage conditions are often evaluated before choosing a bottle color. Light wines such as whites or roses are often bottled in lighter colors to showcase the beautiful blush coloring or influence consumer perception. Since these wines are typically stored and served in cooler condition, light exposure is limited and temperatures do not vary as drastically. On the other hand, darker colored wines like reds are often served at room temperature making the chance of UV exposure more likely. While darker colored bottles do absorb more heat, they are often used to reduce [UV light exposure](#), which can help protect wine color and flavor.

Many major wine producers use spectrophotometers to evaluate wine bottle glass colors and make informed choices in bottling options. When clear glass bottles are desired to showcase the color of wine, assessing translucency can improve appearance and marketability. Instrumentation that utilizes spherical technology can accurately measure clear solid samples. This technology sees beyond the basic viewing parameters of the visible spectrum and quantifies [color data for improved consistency](#). This measurement technique also accounts for reflectance and haze to monitor clarity and quality in glass bottles. Other variations in wine bottle glass colors, such as green, blue or brown glass can also benefit from this technology. The ability to measure UV reflectance, color and opacity can help vintners determine the best glass color for UV protection and light transmittance quality.



Monitoring color consistency increases visual appeal and improves consumer acceptance and choice.
Image Source: Flickr user Trilock Rangan

Monitoring Glass Color Consistency for Quality

Not only does glass color affect the quality of wine internally, but external perception is also one of the first factors that influence consumer choices. Maintaining color consistency and visual appeal is critical for ensuring name brand excellence and quality perception. Spectrophotometers are essential for maintaining [glass color consistency](#) and monitoring quality in wine bottle production. Instrumentation such as the [UltraScan PRO](#) spectrophotometer utilizes a sphere geometry to measure both the reflected and/or transmitted color at extended wavelengths and quantifies the exact color for repeatability and quality control. Since color varies under certain light, this spectrophotometer also controls the lighting conditions, giving the most accurate representation of color when considering bottling choices.

Spectrophotometry in the Wine Industry

Wine consumption has grown continuously in America over the past 20 years and research shows that it is expected to keep growing at a rate of around 2 to 3 percent per year. With over 7,700 wineries across the country², competition is growing, making quality and marketability a top priority in this industry. Choosing quality wine bottle glass colors is essential for protecting the quality and integrity of your wine and increasing visual appeal and marketability. HunterLab offers a variety of instrumentation options specifically design to measure glass color and quality. From bottle color to [monitoring wine quality](#) and changes, our spectrophotometers can help improve the quality and marketability of your products. For more information on color measurement in the glass and wine industries, [contact us today](#).

1. "The Influence of Bottle Color on Wine Quality When Exposed to Light and Varied Temperatures", April 29, 2013, <http://www.academicwino.com/2013/04/bottle-color-wine-quality-light-temperature.html/>
2. "The state of wine drinking in America today", January 24, 2016, <http://theweek.com/articles/532653/state-winedrinking-america-today>