



Green beer bottles have a refreshing appeal. Image credit: Flickr user [Neil Tackaberry](#)

When I was in college, my friends would always buy green colored beer bottles, believing that these were fancier and more “European-looking” than their brown colored peers. But after graduation, I started drinking more porter, which usually came in dark brown bottles. After years of drinking dark porters and stouts, I went back and tried a few of the green colored bottles that I used to love as a college student — the beer wasn’t at all to my liking. It had a strong musty aftertaste that I don’t remember tasting when I was 21 years old.

It turns out that beer bottle colors<sup>1</sup> have a significant impact on the flavor of the liquid inside. Even when the beer is of similar quality and made in the same style (like porter or lager), the flavors will change dramatically depending on the bottle color. Using a [spectrophotometer to measure the color](#) of the bottle can help breweries protect the natural flavors of the beer inside, and find the perfect glass opacity for the beer’s style.

### **Why Beer Bottle Color Matters**

If you’ve ever noticed a musty, skunky aftertaste in your beer, chances are good that ultraviolet light is responsible. That’s because beer contains hops, a dried flower that provides a hint of aroma and bitterness. One set of chemicals inside of hops, isohumulones<sup>2</sup>, interact with UV light to produce a chemical compound that’s nearly identical, on the molecular level, to the stinky spray that skunks use to ward off predators. The more hops a beer has, and the more UV light interacts with those hops, the stronger the scent of skunk will be. While this isn’t harmful to your health, it can make for an unpleasant drinking experience.

That’s where bottle color comes in handy. Some colors are specifically designed to absorb UV light before it can interact with the liquid inside, whereas others offer little to no protection. Generally, clear, yellow or green bottles cannot protect the beer from UV light, whereas dark brown bottles can. The darker and more opaque the bottle is, the less UV light can enter, which preserves the [natural flavors](#) of the beer.



Dark bottles block UV light. Image credit: Flickr user [\[puamelia\]](#) **A Matter of Taste**

Since dark brown bottles protect the beer from UV light exposure, why don't all breweries use this color? It comes down to personal taste and marketing strategies. Some brewers enjoy a hint of skunk in their beer, believing that it [gives the flavor more personality](#). Although most beer collectors consider this to be a flaw, customers have come to expect this aftertaste in clear bottles of Corona or Newcastle; to alter the bottle color of these brands would dramatically change the flavors that customers already enjoy. There's also the matter of marketing aesthetics. Some breweries prefer to keep their beer in clear bottles so that the customer can see the [rich amber color](#) of the liquid inside.

The history of using green bottles is a bit more complicated. When breweries first started making beer, they used green bottles because the green glass was inexpensive and plentiful<sup>3</sup>. Breweries didn't discover the skunk problem until the 1930s, but even after this discovery, some continued to use green glass. Following World War II, there was a shortage of brown glass, and as a result, breweries in Europe (even the highest-quality producers) began using green bottles instead. Over time, the green bottle was seen as distinctly European, and it was a symbol of a high-quality beer. Today, some of those breweries continue to use green bottles because it reminds customers of this era, and makes the beer appear more desirable.

### **Which Spectrophotometer Should Breweries Use?**

Whether you decide to use a green bottle or a dark brown one, a spectrophotometer is essential to maintain [glass color consistency](#) and offer the best protection for your bottles. A clear bottle might

not offer any UV protection, but a green bottle will offer some very minor protection if it's the right color and opacity. To obtain a more in-depth picture of the exact color of your glass and how well it will absorb UV light, we recommend using an [UltraScan PRO](#) spectrophotometer. This instrument uses sphere geometry to measure reflected or transmitted color at extended wavelengths. Some glass can appear too dark under certain lighting conditions, so it's important to test its color using a spectrophotometer first before you invest too heavily in your bottles. The result is a beer that tastes as wonderful as possible, and that looks beautiful on a shelf as well.

With over six decades of experience developing color measurement instruments, HunterLab is equipped to help you. To learn more about how spectrophotometers, [contact our friendly, knowledgeable sales professionals today.](#)

1. "Physics and Green Beer Bottles," 2013, <https://www.wired.com/2013/03/physics-and-green-beer-bottles/>
2. "Where Light Meets Beer," 2007, <http://www.washingtonpost.com/wp-dyn/content/article/2007/02/27/AR2007022700312.html>
3. "Why Beer Bottles are Green, Brown, or Clear," 2010, <https://brokenssecrets.com/2010/03/23/why-beer-bottles-are-green-brown-or-clear/>