



Perfume has played a fascinating role in the lives of individuals and cultures for thousands of years. Image Source: Flickr user Lindsay Wilson

Last time I was in Montreal, the entire city smelled of Santal 33. It was everywhere, from nightclubs to galleries, tiny boulangeries in Mile End to H&M on Sherbrooke. And, as I had forgotten to bring my own shampoo, the scent was soon also on me; the hotel's toiletries all contained the distinctive sandalwood and cedar whispers of Le Labo's cult hit. As GQ designer, Griffin Funk, tweeted, "At this point it's weird if someone doesn't smell like Le Labo Santal 33."¹

The fact that a fragrance can become a cultural sensation should come as no surprise. After all, perfume itself has been a vital part of human history thousands of years. "The history of perfume is more than just the history of human beings trying to smell nice—it's a history filled with much strife and innovation," writes JR Thorpe:

The ingredients that are used to create scents have historically been hugely important for trade routes; high class-scents have always been used as a method of distinguishing nobility from the peasantry, and fragrance has been tied to expressions of religious devotion, health precautions, and cleanliness options for most of human civilization.²

Whether it was Josephine dousing her rooms with her signature scent to make sure Napoleon would not forget her, ancient Greeks using perfume to fortify spiritual connections, or young girls in modern day France carefully selecting their first scent as a coming of age ritual, perfume has played a complicated and essential role in the lives of individual and cultures around the world. Perfume gives us a way of creating moods, taking on identities that are perhaps a little bit more adventurous, a little bit more sensual than we believe ourself to be. Perfume lets us partake in something luxurious and weave it into our everyday lived experience; whether or not we cannot afford an haute couture dress, but we can dress our bodies in the designer's fragrance.



Capturing natural fragrances to create pleasing and commercially viable perfume formulation is a fine art that must take both scent and appearance into consideration.

Image Source: Flickr user Keith Williamsom

Measuring the Color of Perfume

When it comes to commercially produced perfume, however, scent isn't the only thing that matters. Although humans' olfactory prowess is impressive, we remain primarily visual creatures, [relying on what we see to help us predict sensory experiences](#) and evaluate product quality. And one of the most important visual cues we are looking for is color.

As noted in *Talanta: The International Journal of Pure and Applied Analytical Chemistry*, "Color perception plays a major role in the consumer evaluation of perfume quality. Consumers need first to be entirely satisfied with the sensory properties of products, before other quality dimensions become relevant."³ Not only must the color be pleasing to the eye, but it should ideally relate to the scent of the perfume itself to set up a positive, cohesive sensory experience. Pairing a dark amber hue with a light, airy scent risks creating a displeasing incongruence and misleading consumers. In addition to color, the clarity of the perfume is also of utmost importance, as a cloudy product can give [the impression of impurity](#) or rancidity.

Spectrophotometric monitoring of both color and haze throughout the perfume production process allows manufacturers to precisely tailor formulations based on objective data rather than subjective visual assessment. Today, sophisticated transmittance instruments such as the [HunterLab Vista](#), gives you the ability to easily capture both color and haze information simultaneously in a single measurement, creating a comprehensive picture of your product.

Using [the data collected by your spectrophotometer](#), you can make more informed decisions about potential recipe or process changes as well as instantly identify when a product does not meet your aesthetic quality standards, creating opportunities to quickly quarantine defective product before its release into the marketplace. Additionally, these spectrophotometers may be used to evaluate perfume quality over time via either forced or real time to let you observe product behavior over

time, including unwanted color changes, material separation, or the development of haze, information which can be used to improve formulation and create the best handling instructions.



Evaluating the appearance of perfume via spectrophotometric analysis is now more important than ever to guarantee consistency.

Image Source: Unsplash user Jessica Weiller

Why Spectrophotometry Matters More than Ever Before

While spectrophotometric evaluation of perfume appearance has long played a critical role in quality assurance, the advent of online shopping is making it more important than ever, as both the black perfume market and consumer savviness grow. Consumers are now constantly implored by beauty magazines, online forums, and Ebay guides to be weary of counterfeit and adulterated products sold as pricey perfumes and one of the biggest red flags to look for is improper color or haze. “Consider the fragrance’s color. Does it appear even, or is it murky, cloudy, or even contain sediment or particles?” says a writer for Ebay.⁴

An anti-counterfeit perfume blogger writes, “Check the color of the perfume against a genuine bottle; if the perfume’s color is wrong inside your bottle, it is probably a fake.”⁵ Of course, this advice only works if genuine perfumes are consistent in color and clarity; even slight variations may not only be off-putting but may actually call the authenticity of your product into question by savvy consumers. Continuous monitoring of perfume throughout manufacturing to guarantee [consistent color and appearance](#) is imperative to assure consumers that they are purchasing the real deal.

HunterLab Ingenuity

HunterLab has been a pioneer in the field of spectrophotometry for over 60 years. Today, we offer a comprehensive lineup of portable, benchtop, and inline instruments ideally suited for the versatile needs of the perfume industry. From the most precise transmission color and haze measurement to package color analysis via reflectance measurement, we have the tools you need for the ultimate in quality control at every stage of your manufacturing process. We invite you to [contact us](#) to learn more about our innovative products and world-class customer service and let us help you select the perfect instrument for your needs.

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2. "The Strange History Of Perfume, From Ancient Roman Foot Fragrance To Napoleon's Cologne," July 31, 2015, <http://www.bustle.com/articles/101182-the-strange-history-of-perfume-from-ancient-roman-foot-fragrance-to-napoleons-cologne>
3. "CIE L*a*b* Color Space Predictive Models for Colorimetry Devices—Analysis of Perfume Quality," January 30, 2012, <http://www.ncbi.nlm.nih.gov/pubmed/23597889>
4. "20 Point Checklist for Ensuring Perfume Authenticity," June 21, 2008, <http://www.ebay.com/gds/20-Point-Checklist-for-Ensuring-Perfume-Authenticity-/10000000007663739/g.html>
5. "So You Think You Bought Fake Perfume ... Now What?" <http://ihatefakeperfume.blogspot.ca/p/so-you-think-you-bought-fake-perfumenow.html>