

As the prominence of food photography and presentation has increased in recent years, spice color has never been more important. Home cooks are looking for vibrant spice colors to light up the mealtime posts on their Instagram feeds, and food bloggers seek the brightest spices to maximize the appeal of every recipe they post. In restaurants, today's chefs are developing menu items for which the plating is just as important as the flavor. All of these spice users—from the most inexperienced Instagrammer to the top chef at the highest-rated restaurant—depend on the color quality of the spices they use in order to fulfill their food preparation goals. With this in mind, spice manufacturers need to prioritize spice color measurement now more than ever before and explore options for optimizing quality control.

Integrating Measurements Throughout Manufacturing

One of the issues spice manufacturers should consider when it comes to quality control is when to measure color. In order to ensure color quality, it is essential to measure the spice color at least once—at the end of the manufacturing process—but it may also be helpful to conduct interim measurements at multiple points over the course of the manufacturing process. This allows manufacturers to monitor the quality of the color at critical points of production, making it easier to identify possible problems and address them early, before they escalate to the point that they become unmanageable and a sample has to be discarded. If your spectrophotometer identifies that your spice color is out-of-spec at any stage, you can immediately quarantine the affected product and begin locating the source of the discrepancy to get production back on track. In doing so, you can reduce the risk of resource loss both in the immediate and long-term.

Of course, taking color measurements with a spectrophotometer takes time and labor, which represent critical resource expenditures for spice companies and may make some question the viability of multiple points of analysis within the manufacturing process. However, this has become less of a concern as spectrophotometric technology has advanced in recent years. For example, HunterLab's [innovative new Aeros](#) requires virtually no sample prep at all and is designed specifically for non-contact measurement of textured or irregularly shaped samples. This drastically reduces the time and labor necessary for color analysis while also minimizing risk of user error. Additionally, the Aeros comes with color measurement software that can store and recall thousands of standards, data are displayed and stored digitally, and data can be shared wirelessly, facilitating more efficient workflows. These features speed the quality control process and make taking multiple measurements a more feasible option for once-skeptical spice manufacturers.

Sample Size Considerations for Spice Manufacturers

Technology now makes it easier than ever to take color measurements at numerous points in the spice production process, but some manufacturers have special concerns when it comes to spectrophotometric testing. More specifically, while spice blends that include relatively low-cost spices like black pepper may not present a problem, measuring the color of [high-cost spices like saffron, black cumin, and cardamom](#) represents a more significant expense for spice manufacturers, even though the integrity of their color is just as important as it is for cheaper spices.¹

When conducting measurements of a more expensive spice, manufacturers may want to consider using a spectrophotometer with the ability to [measure smaller sample sizes](#), such as the [UltraScan PRO](#). The UltraScan PRO is compatible with [specialized sample cups](#) that are ideal for minimizing the amount of material needed for accurate measurement, helping you preserve costly spices. For example, HunterLab offers a semi-micro sample accessory that requires only 0.4cc of powder for accurate analysis when paired with HunterLab's SAV port plate. That makes it more financially feasible for spice manufacturers to monitor and evaluate the color of expensive spices, both during the manufacturing process and afterward, as part of the final evaluation for product quality control.

Developing Color Standards for Spices with Flavor Gradations

While measuring the color of spice in general is necessary for optimal quality control, there are also instances where color measurement can have another utility: flavor gradation. For spice manufacturers that offer spices with several flavor gradations—like chili powder in mild, medium, and spicy flavors—it is important to make sure that customers can distinguish between the options. That way, when they go to their cabinet, they can quickly grab the spice they need without having to waste time scrutinizing the package or worrying that they might grab the wrong one. It might seem like a small consideration, but it can actually make a big difference for customer loyalty; the more convenient and intuitive the product, the more likely that customers will look to the same company for their flavor-graded spices in the future.

Of course, for flavor-graded spices like chili powder, the color discrepancy between the graded products is necessarily small. However, [developing an objective color standard](#) for each product helps support color consistency; once the standard is set, the spectrophotometer will automatically detect whether a spice meets the standard and alert you to even the smallest deviations from the color goal problems can quickly be identified and addressed. That way, each flavor gradation will always remain consistent with the customer's expectations. Creating and using color standards is best done using advanced color measurement software, such as [EasyMatch QC](#) or EasyMatch QC Essentials. These software packages allow users to create and easily deploy thousands of color standards while enhancing your ability to capture, analyze, and share color data.

Full article with photos available here:

<https://www.hunterlab.com/blog/color-food-industry/exploring-options-for-measuring-the-color-of-spices/>