



Color quality control is an essential part of mayonnaise production, ensuring consistency and increasing appeal. Image Source: Flickr user jules

I love mayonnaise. But mayonnaise and surprises don't mix. I found that out when my older brother pranked me with the bucket trick when I was growing up. I found it out again when my kid, then in kindergarten, baked me a cake and used mayonnaise as frosting. Just last week, the lesson was reinforced when I came home from a hurried shopping trip. I'd just grabbed the first bottle I could reach from the shelf, without really looking at it. It wasn't until my wife saw it that I realized—surprise—the mayonnaise wasn't white. It was yellow. It was probably fine, I thought. But I still had to go back to the grocery store and get it right.



Homemade mayonnaise. Image credit: Flickr User jules

Poor Brand Consistency Can Impact Sales

[Brand consistency is an essential element](#) of mayonnaise manufacturing. Whether they're making sandwiches or egg salad, customers expect their mayonnaise to be the same shade every time. That isn't to say that different brands can't be different colors. Mayonnaise varies from white to yellow based on the amount of egg yolk included. Brands can vary, but each brand must be the same color every time.

Based on an expectation of consistency, customers are likely to have a negative impression of a mayonnaise purchase if it isn't the right color. Despite [mayonnaise's ability to prevent](#) food spoilage, the myth that mayonnaise can be an agent of spoilage persists. This can lead customers who notice anything different about their mayonnaise—such as an unexpected color—to mistrust their purchase, and by extension, its brand. Brand mistrust can negatively impact a company both in reduced future sales to that customer, and reduced sales to that customer's friends and family due to word of mouth.

Discoloration can occur in mayonnaise at a number of stages in [the manufacturing process](#). First, [raw materials such as eggs](#), oil, vinegar, and spices can vary in color to some degree. Next, improper ingredient ratios can affect color as well, such as the inclusion of too much egg yolk instead of egg white. Not only must the ratios be correct, but the ingredients must be properly agitated and

emulsified, so that agglomerations do not form. Finally, contamination in the mixing vats or supply lines can lead to discoloration through the inclusion of unwanted ingredients.

Spectrophotometers Ensure Color Quality Control

To detect and correct the discoloration of their mayonnaise, [manufacturers employ spectrophotometers](#). These instruments ascertain the color of liquids and solids with unerring precision. By analyzing controlled bursts of light reflected off samples, spectrophotometers can detect the exact color of opaque materials. Because spectrophotometers emit the same light, for the same duration, every time they take a measurement, they return results with a high degree of accuracy.



The color of mayonnaise can vary dramatically depending on ingredients. Image Source: Flickr user Blue moon in her eyes

Rapid Measurement Keeps Quality Control Efficient

In a high-volume mayonnaise production process, efficiency is important. Unwieldy quality control processes mean lost time, which translates to delayed shipments and lost dollars. Fortunately, spectrophotometric quality control is a rapid, efficient process. Samples from batches in process can be carried or piped to the laboratory. Measurements are taken in a matter of seconds, and are compared to pre-established standards. Quality control technicians need only to check the display screen to determine if the sample is acceptable or rejected. So long as samples are within the established tolerances, production can continue to the bottling phase without any interruption.

Instrumental Color Analysis Outperforms Human Observers

Both in rapidity and accuracy, spectrophotometers outperform human color observers. Results from human observers can vary from person to person, and from morning to evening. Objective interference, such as ambient light conditions, can throw off human measurements, as well as

subjective factors such as fatigue and mood. Further, spectrophotometers render color numerically. This allows for greater description in the the reportation of color than human observers have the language for. Numerical color representation also allows spectrophotometers to compare their measurements to rigidly defined standards. Human observers, who compare color to printed standards or using other non-numerical methods, cannot replicate this accuracy. These numerical standards can be shared between facilities, for companies operating more than one mayonnaise production plant simultaneously.

HunterLab Innovation

With over six decades of experience developing color quality control [solutions for the food industry](#), HunterLab has learned a lot about what our customers want from a spectrophotometer. We're proud to count some of the largest food and beverage manufacturers among our clients. [Contact us](#) to learn more about how we can help your mayonnaise manufacturing process run more smoothly.