The holiday season has come and gone, and I find myself, as usual, having consumed more than my fair share of sweets. With the arrival of the New Year, I'm trying to cut back on sugary foods, but ice cream is one treat that's not getting scratched from my list (it is in the dairy/protein family anyway, right?). Honestly, I find it hard to avoid most creamy-textured foods—which makes sense, since they're often specifically engineered to be appealing.

The rich creaminess of ice cream makes it appealing both visually and texturally. Image Source: Flickr user gordonramsaysubmissions (CC BY 2.0)

Carrageenan is not an ingredient that pops up on most consumers' radars when they check labels, yet it's responsible for improving the texture and appearance of many of the food products they consume daily. Extracted from an edible red seaweed and converted into powdered form, this natural derivative is added to a variety of foods, from dairy products and beverages to processed meats[1]. And though carrageenan powder is white in appearance, it often remains undetectable thanks to carrageenan color analysis and instrumental quality control.

Measuring Color to Increase Visual Appeal

Texture and appearance go hand in hand when it comes to the marketability and visual appeal of foods. The creaminess of my favorite ice cream brand relies on carrageenan to create this texture—but visual color and consistency can also be altered by the additive. However, because the white appearance of carrageenan in powdered form[2] can change the color outcome of many products, carrageenan color analysis is a priority for manufacturers hoping to maintain consistency.

Carrageenan is found in a wide range of food products, including beverages, dairy products, and processed meats. Image Source: Flickr user Calgary Reviews (CC BY 2.0)

In fact, color measurement of the raw additive plus final color outcome monitoring are both necessary for ensuring the visual appeal of finished food products. Measuring the lightness value of carrageenan with advanced color measurement tools provides you with the data necessary to set color tolerances and formulate necessary changes throughout production. Understanding these light values and developing a color tolerance method that utilizes a CIELAB measurement system are the first steps toward developing a replicable product.

Understanding Your Color Measurement Instrumentation

Spectrophotometers provide the most advanced level of color measurement and are now an embedded part of food production and quality control. The many features they offer can be overwhelming, but knowing what measurements are important and how to calibrate your instrumentation will save both time and money.

When measuring carrageenan, it is important to focus on light value measurements, or *L values, given the effect that the additive's white appearance can have on the final color outcome of your product. Quantifying the light value of raw carrageenan powder allows color formulations to be set and altered to meet color tolerance standards.

The white color of carrageenan powder can directly affect final color outcome, making instrumental color monitoring an essential part of food production. Image Source: Flickr user U.S. Department of Agriculture (**CC BY 2.0**)

But since light values can change from batch to batch, continual color monitoring is necessary to produce the outcome that you want. Studies show that consumers rely on **color consistency** to judge the quality and reliability of their purchases, which means that even slight changes can sway their buying choices and have a negative effect on their perception of your brand's quality.

Spectrophotometers offer continuous color monitoring capabilities that provide the data necessary for making formulation changes throughout production, resulting in consistent color every time.

Making the Most of Your Color Measurement Tool

Spectrophotometers are available **in a variety of styles and models**. Each is designed to meet specific industry standards, and many offer the versatility to measure a variety of sample sizes and textures. Although the instrumentation itself is highly advanced, each product is designed for ease of use and allows for the simple quantification of color values.

At HunterLab, we offer a wide selection of color measurement tools designed to meet the many challenges of the food industry. From non-contact color measurement to the assessment of liquid and powdered samples, we work with industry leaders to design tools that not only meet your needs but offer the versatility necessary to compete in today's global market. Our products are also fully supported by our customer service program, ensuring that you make the most of your spectrophotometer. For more information, **contact us today** and learn why food industry leaders rely on our technology for their color measurement needs.

1. ”About Carrageenan”, September 20, 2012, https://www.naturalproductsinsider.com/Articles/2012/09/About-Carrageenan.aspx
2. “Decolorization of Low Molecular Compounds of Seaweed by Using Activated Carbon”, April 2014, http://www.ijcea.org/papers/359-L0016.pdf