

“I think it’s gone bad,” says Ken. “Is that possible? I didn’t think that was possible. Maybe I shouldn’t eat this.” He looks down at the slice of cake in front of him, topped in a greenish-grey approximation of whipped cream. “But I made it special for your birthday!” says Jen. “You mean you don’t like it?” Her eyes widen, and she starts to get up from the table, reaching to clear Ken’s plate. “No, I like it,” he says. “Really, I like it. It looks great! I know you put a lot of work into it. Just maybe the cream in the can get a little old. The cake looks awesome. Here, I’ll just scrape the cream away.” Jen smiles and sits back down as Ken scrapes the cream off the cake. It still looks a little gross where the cream used to be, but Ken puts on a smile and swallows a bite. “Delicious,” he says, and as he looks across the table at Jen, it really is. “That’s weird,” she says. “That it’s so old. I just got it yesterday.” Ken looks back at the puddle of melting cream on the edge of his plate. It looks grosser than before. He turns back to Jen and says: “Maybe try a different brand next year?”



Good whipped cream can make a good meal better. Image Credit: Flickr User [Hideya HAMANO](#) (CC BY 2.0)

Raw Materials Variation Can Create Brand Inconsistency

Customers expect their whipped cream to be a particular shade of white. Not just any white, but the exact same white that it’s been every time they’ve pressed down the nozzle and covered their strawberry shortcake in foamy cream. For manufacturers, this means that special care must be taken to ensure that customers get the cream they expect. Any color deviations can raise concerns in customers. If the color of the cream is different, they will wonder if other properties may be

different as well and if it is safe to eat. These concerns can lead them to think twice before purchasing a bottle of the same brand the next time they shop. This can potentially cost a company a lifetime's worth of sales.

However, maintaining a standard color in whipped cream products can be easier said than done. The principal ingredient⁴ of whipped cream is milk, [which can exhibit a spectrum of different colors](#) depending on factors including the health, diet, and age of the cows it comes from. Both the overall amount of fat in the cream, and its liquid or crystalline properties, can vary as well. Process variations, such as temperature fluctuation during pasteurization, can affect the final product color as well.



Manufacturers use spectrophotometers to ensure each batch of whipped cream is the same shade of white. Image Credit: Flickr User [jeffreyw](#) (CC BY 2.0)

Spectrophotometers Ensure Whipped Cream Meets Color Standards

In order to catch any color deviation resulting from differences in raw materials or production processes, whipped cream manufacturers rely on instrumental color quality control. Instruments known as spectrophotometers can objectively assess the color of opaque objects such as whipped cream with a very high degree of repeatability. These instruments measure the color of objects using reflectance spectrophotometry.

Unlike human observers, spectrophotometers can translate color into a numerical value. To obtain an objective color value, a quality control technician simply places the sample in the instrument, presses a button, and notes whether the numerical output falls within established tolerance standards. No matter who the technician is or in which facility they're located, the measurement will be the same.

With over six decades of experience designing spectrophotometers for the food industry, HunterLab has become a trusted name in instrumental color quality control. If you're interested in learning more about which spectrophotometer can best improve your production process, contact our friendly, professional representatives today.

1. "Whipping Cream," 2014, <http://dairy-technology.blogspot.ca/2014/01/whipping-cream.html>