



Peanut butter has a uniquely American history and consumers have strong preferences for how peanut butter should look.

Image Source: Flickr user Denise Krebs

When I lived in London, one of the things I missed most about the United States was peanut butter. Yes, there was peanut butter in the UK, but it was different and it wasn't the sort of difference you could look past. And, as I came to find out, I wasn't the only one who felt that way. In fact, American peanut butter was a hot commodity; whenever someone would go home on holiday or have visitors from the US, we would put in our peanut butter orders and wait impatiently until we could get our hands on what we knew and loved.

It makes sense that Americans have a unique relationship with peanut butter. It was, after all, John Harvey Kellogg, a physician and vegetarian, who began giving his patients nut butters in the 1890s to provide them with a healthy, easy-to-eat source of protein.<sup>1</sup> Simultaneously, he began supplying peanut grinders to health food stores, allowing a relatively small market of niche, expensive peanut butters to flourish.

Mass commercialization, however, didn't happen until the 1920s, when Joseph Rosefield introduced the use of hydrogenated fat in the peanut butter manufacturing process, preventing oil separation and drastically increasing the appeal of the product. Rosefield's invention came just in time; "as the scarcity of meat [during WWII] required citizens and soldiers to seek protein alternatives."<sup>2</sup> From that point on, peanut butter took off. Today Americans spend over \$1.8 billion on peanut butter annually – more than any other nation in the world – and over half of peanuts grown in the United States are destined to be made into peanut butter.<sup>3</sup>

This history is noteworthy because it informs how Americans approach peanut butter and guides the purchasing decisions of consumers. Peanut butter is not seen as an exotic food eaten on rare occasion, but as a staple that is consumed throughout life, something we remember from our grade school lunch boxes, something we eat as comfort food, and something that has become inextricably

linked to our culture. It is familiar and beloved. As such, consumers have very specific expectations of peanut butter products and strong preferences regarding what it should taste, look, and smell like, preferences that have typically been ingrained from childhood. The color of peanut butter in particular is of utmost importance when it comes to [influencing consumer choice and experience](#).



The color of peanut butter is an important indicator of quality and reflect both the quality of raw ingredients and correctness of processing.

Image Source: Pexels user stock.tookapic.com

#### The Importance of Color in Peanut Butter Grading

What peanut butter should look like isn't simply an arbitrary matter of personal choice, but an instrumental part of peanut butter quality assessments made by the USDA. As [Norman Whetzel of HunterLab says](#), "The USDA quality system assigns peanut butter quality ratings of USDA Grade A, Grade B and Other based on 4 attributes that total 100 points":

- Color: 20 points
- Consistency: 20 points
- Absence of defects: 30 points
- Flavor and aroma: 30 points

While the color of peanut butter accounts for only 20% of the USDA score, that 20% is vitally important. Color, after all, is the only attribute readily apparent to consumers prior to purchase and even slight color variations can significantly diminish appeal. Simultaneously, [color can be an important indicator of product taste](#), as it is directly influenced by roasting and other process variables; unexpected or undesirable color isn't just a matter of aesthetics, but can be a very real sign of diminished quality. As such, adhering to color standards is critical to commercial success as well as achieving Grade A classification.



Spectrophotometrically assessing the color of peanut butter is critical to ensuring accuracy and consistency.

Image Source: Flickr user Dano

### Quantifying the Color of Peanut Butter

To facilitate color assessment, the USDA has developed a set of color standards in the form of four plastic chips that act as guideposts. Designed to be compared visually to the color of peanut butter, these color standards are inherently unreliable; a wide range of variables can interfere with accurate matching, including [light conditions](#), [viewing environment](#), and [color vision differences between viewers](#). In contrast, spectrophotometers allow you to precisely assess the color the same way every time, removing the variables that compromise accuracy, and providing an objective basis of analysis. Today, spectrophotometric color analysis is the gold standard within the peanut industry, significantly expanding your quality control capabilities.

However, your internal peanut butter color standards should not be based solely on spectrophotometric color measurements of the plastic chips. Whetzel explains:

A USDA Peanut Butter Color standard i[...] is different in appearance from actual peanut butter. While you can measure the color of the Peanut Butter Color chips as a direct approximation, the best correlation method is have several peanut butter quality experts visually evaluate the color of the peanut butter using the USDA Peanut Butter visual guides for your product color range of interest. Then measure the color of the peanut butter using your standard method and look at the correlation of Hunter L or CIE L\* (lightness) to the consensus grades of the quality group. This will give you the best correlation to these USDA Peanut Butter grades, and you should be able to report to a single decimal place if you are doing instrumental measurement.

This process may be intricate, but it will allow you to create a reliable metric for satisfactory peanut butter color that you can then use to assess subsequent batches, ensuring the highest degree of precision and consistency.

## HunterLab Quality

HunterLab has been a pioneer in the field of spectrophotometry for over 60 years. Our dedication to innovation and technological excellence has led us to develop an extraordinary lineup of instruments that give our users the accuracy and flexibility they need to implement rigorous color control protocols. With a complete range of portable, benchtop, and inline spectrophotometers to choose from, we provide the peanut industry with the tools it needs to monitor color quality [throughout the manufacturing process](#), resulting in both higher quality products and increased efficiency. [Contact us](#) to learn more about our renowned spectrophotometers, customizable software packages, and world-class customer support services.

1. "Why Americans Love Peanut Butter," February 9, 2009,  
[http://www.slate.com/articles/news\\_and\\_politics/explainer/2009/02/why\\_do\\_americans\\_love\\_peanut\\_butter.html](http://www.slate.com/articles/news_and_politics/explainer/2009/02/why_do_americans_love_peanut_butter.html)
2. "The History of Peanut Butter," January 23, 2012,  
[http://www.huffingtonpost.com/2012/01/22/peanut-butter-history\\_n\\_1222585.html](http://www.huffingtonpost.com/2012/01/22/peanut-butter-history_n_1222585.html)
3. "Love Me, Love My Gunk: Why Don't Brits Love Peanut Butter As Much As Americans Do?" April 5, 2012, <http://www.independent.co.uk/life-style/food-and-drink/features/love-me-love-my-gunk-why-dont-brits-love-peanut-butter-as-much-as-americans-do-7622212.html>