

Dietary supplements are growing in popularity as consumers seek a diets and regimens that are nutritive-rich. Currently, the industry is flooded with new products to meet these demands yet many of these products lack industry standardization for quality and safety. Changes are inevitable and organizations such as the Association of Analytical Communities (AOAC) are seeking reliable analytical methods to help monitor and regulate these products. Spectrophotometry has received a lot of attention in the analytical realm of dietary supplements and offers a non-destructive and rapid analysis of many of the common ingredients used in these products.

## Setting the Standards

There has been a recent push toward the standardization of dietary supplements, and further research and development has focused primarily on aloe, tea, and vitamin D, which are ranked a top priority in dietary supplement ingredients.<sup>1</sup> Industry leaders and stakeholders recently met to review possible methods for the standardization of these ingredients. Instrumental evaluation is always a top contender in the standardization process, as it not only helps to eliminate human error but can also be repeated many times to create a specific protocol for standardization.

Spectrophotometry is often a preferred choice in standardization procedures since it offers an efficient and non-destructive method of analysis. Spectrophotometry is already widely used in food products, pharmaceuticals, and [vitamin analytical procedures](#). This method offers the simple use of light measurement, which allows manufacturers to quantify specific ingredients and use this data for accurate labeling and regulatory purposes. Spectrophotometry utilizes advanced technology to set quantification limits which are essential in developing standards in these markets.

## The Challenges of Visual Standardization

While visual standardization procedures provide the most rapid and cost-effective method of analysis, there are still some challenges to overcome when working with a variety of substances. Variations in consistency, opacity, and texture can make sample measurement difficult, so having the right instrumentation is crucial in obtaining accurate measurements and developing standards.

Highly textured materials respond best to non-contact measurement systems that create an average sample measurement reading. This is extremely beneficial [for dietary supplements such as tea and other sample types where maintaining sample integrity is important to the overall quality of the product](#). This also reduces wasted product and allows for continual real-time product measurement. Utilizing this technology for process monitoring ensures that products maintain consistency and quality from batch-to-batch, which is closely linked to consumer satisfaction.

## Consumers Demand Safety and Quality

Current regulations on dietary supplements only apply to the specific labeling which provides a disclaimer that states that products have not yet been evaluated by the Food and Drug Administration (FDA).<sup>2</sup> However, consumers want reassurance that their supplements are in fact safe and reliable. An article published by the National Institute of Health<sup>3</sup> reports, "Unlike drug products, there are no provisions in the law for FDA to 'approve' dietary supplements for safety or effectiveness before they reach the consumer. Once a dietary supplement is marketed, FDA has to prove that the product is not safe in order to restrict its use or remove it from the market." Obviously this backward thinking does not create a market for products that meet consumer needs and creates a stigma that manufacturers of dietary supplements lack quality and credibility.

Spectrophotometry provides a simple solution that can not only ensure consumer satisfaction, but allow manufacturers to make specific claims about their products as well as guarantee the safety of products. Taking a proactive approach ensures consistency and helps manufacturers avoid costly errors or retroactive recall procedures. Using spectrophotometric technology would increase production and quality control efforts, creating the best product possible for distribution.

## Choosing the Right Instrumentation

Spectrophotometers are available in many different styles and designed to meet a variety of applications and uses. Depending on your product need and manufacturing style, instrumentation options will vary. Choosing the right instrumentation for the job is crucial in addressing the highest level of quality and safety in your product.

Full article with photos available here:

<https://www.hunterlab.com/blog/color-pharmaceuticals/finding-an-answer-using-spectrophotometry-for-dietary-supplement-standardization/>