

Another New Year is underway and once again I have resolved to eat healthier. Green vegetables still take center stage when it comes to high levels of chlorophyll pigments, which boast many health benefits, and I continue to look for new ways to add these healthy nutrients to my diet. However, I can only eat so much raw spinach and kale before I feel my inner rabbit start to retreat. The good news is that chlorophyll pigments are now available in supplement form and can be easily quantified for potency and quality purposes using a simple spectrophotometric method of evaluation.

The Proven Benefits of Chlorophyll Pigments

Although many people already know that by increasing the intake of green leafy vegetables supports a healthy body, many are unaware that the concentration of chlorophyll pigmentation is a direct measurement of benefits you will receive. A deep rich green color indicates higher levels of this beneficial dietary supplement which has been proven to host a wide range of benefits which include “essential vitamins and nutrients needed for cardiovascular, muscular, and neural health.”¹

The ability to measure chlorophyll pigments and concentration levels is essential for creating a supplemental variety of products that can boost the levels of this nutrient. For example, many food scientists and experts are looking at the [color saturation levels in extra virgin olive oils \(EVOOs\) as a way to improve the quality of these food products](#). Spectrophotometric determination is essential in this process because it provides a way to quantify these levels and add a measurement of truth the claims made on these products. The ability to provide a numerical value to these calculations allows manufacturers to promote their products and increase prices based on this information.

The Challenges and Strategies of Accurate Measurement

The [analysis of chlorophyll pigments](#) can be easily attained through the use of spectrophotometric instrumentation. Spectrophotometers utilize a light absorption and reflection as a means of calculating the saturation levels in various samples. Chlorophyll is extracted from plant matter as an organic solvent and potency is measured using the absorption properties of organic substances with spectral analysis. These absorption levels can accurately determine the concentration of chlorophyll pigments in the extraction sample and quantify this information using numerical data. This process is relatively simple and easily repeatable for accurate results.

However, the spectral properties of many substances can change when the interference of other molecular substance are present in a sample. Therefore, understanding the wavelength patterns in spectrophotometric measurement systems is essential when developing an accurate method of evaluation. Although chlorophyll pigments absorb light at a consistent rate, there are many other compounds that can also absorb wavelength at similar rates, causing interference in the quantification of pigment levels.² By [understanding the principles of absorption and reflection measurements at both ends of the color spectrum](#), accurate quantifications can be achieved.

Full article with photos available here:

<https://www.hunterlab.com/blog/color-pharmaceuticals/applying-spectrophotometric-evaluation-to-chlorophyll-pigments-to-reap-health-benefits-of-our-foods/>