

Title Comparison of two methods for anthocyanin quantification
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Abstract

The pH differential method (AOAC method 2005.02) by spectrophotometry, and high performance liquid chromatography (HPLC) are methods commonly used by researchers and the food industry for quantifying anthocyanins of samples or products. This study was carried out to determine if a relationship exists between these two frequently utilized analytical methods. Seven fruit juice samples, each containing an array of individual anthocyanins, were analyzed by pH differential and HPLC (two different conditions). Additional samples that had been processed in the lab were also included in the comparison ($n > 500$). This study demonstrated a high linear correlation ($r > 0.925$, $p \leq 0.05$) between the pH differential method and HPLC (both systems) when determining the amount of anthocyanins within samples. In both methods, total anthocyanins were greater when values were expressed as malvidin-3-glucoside than as cyanidin-3-glucoside. For laboratories that do not have the capability for HPLC analysis, the pH differential method offers a straightforward and economical method to determine total anthocyanins. This study also demonstrated the importance of reporting the standard used to express the values. Analytical methods used and certified anthocyanin standards are critical for anthocyanin research and the food industry.