

The effect of pH on color behavior of brassica oleracea anthocyanin

Abstract:

Anthocyanins, as natural colorants are widely used in the food industry as an alternative to synthetic colorants due to their health benefits, beautiful color and safe to be consumed. Despite of the current challenge to maintain their color properties, the instability of the color can be utilized as an indicator in the food packaging industries. One of the factors which affect the color of the anthocyanins is the level of pH. In the food industry the anthocyanins color can easily change due to the various pH condition of the food product. Increasing the pH and temperature, during processing and storage would increase the degradation rates of anthocyanins. This study focuses on the anthocyanin color behavior at various pH in the liquid and solid phase. Samples of anthocyanin in aqueous solutions were studied at various pH levels between 1.0 to 14.0 at a period of 10 days. Colors were expressed by the CIELAB coordinates, color tone, color intensity and color lightness. Powdered anthocyanin exhibits more stable compared to juice anthocyanin at most pH values, showing no changes in color intensity and color tone and little changes in color lightness. The variation in the results suggested that further developments of anthocyanin as a potential pH color indicator in food packaging system are required.