

POPULAR SCIENTIFIC ABSTRACT

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Sensory quality and consumer perception of fruit-based beverages processed by high pressure

In order to meet the growing consumer demand for high-quality food with “fresh-like” properties, interest in non-thermal processing methods has increased in recent years. Among these, high pressure processing (HPP) has been successfully applied. As flavor is mentioned as one of the most important aspects in fruit-based beverages, it is crucial to investigate the sensory quality and consumer perception of HPP-treated products before they reach the market.

The Ph.D. thesis focuses on the effect of HPP on the sensory quality and consumer perception of fruit-based beverages, traditional thermal processing (TP) treated products are involved as a comparison.

The thesis begins with an introduction to HPP and its advantages and disadvantages in food processing.

In the second chapter, it firstly documents an overview of the sensory quality of HPP-treated fruit-based beverages by conducting a literature review. It then confirms that HPP can largely preserve the “fresh-like” sensory quality of fruit juices by conducting the first experimental study. The experimental study combines treatment (HPP and TP) and storage conditions (cold and room temperature in different storage times) and uses descriptive analysis to investigate sensory quality.

The third chapter deals with consumer perception. Firstly, the overview of consumer perception of HPP-treated fruit-based beverages is documented based on the same literature review. Then, it explains how sensory quality influences consumer liking by analyzing the results of the hedonic analysis conducted in the first experimental study. It also points out that storage conditions have a higher effect on consumer liking than treatments. Finally, it discusses the effect of benefit claims of HPP-treated fruit-based beverages on consumer liking by conducting a mix-designed methodology (quantitative and qualitative tests). It shows that the sensory benefit claim largely increases consumer liking, while the health benefit claim has no impact. It also suggests that price and convenience etc. are possible considerations for consumer liking.

This Ph.D. thesis confirms the known benefits of HPP, contributes to the existing research into non-thermal processing technologies, and has significant implications for industry in the development of food products.