

Impact of thermosonication on kiwi juice quality

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Traditional heat treatments such as pasteurization are usually used in fruit juice preservation. However, due to undesirable quality changes, industries seek other processing technologies that can retain the fruit juices' quality.

This study aims to develop a high quality and safe-to-drink kiwi (*Actinidia deliciosa* cv. Hayward) juice throughout the application of thermosonication treatments (TS). *Listeria innocua* (a surrogate of the pathogenic *L. monocytogenes*) was used as a safety indicator. pH, SSC, colour, cloud value, total phenolics, total chlorophylls, and minerals were evaluated as quality parameters.

TS was carried out with an ultrasound homogenizer at a constant frequency of 20 kHz, 80% amplitude and discontinued pulsation (10s on, 5s off). The juice samples were submitted to TS at 45, 50 and 55°C for 15, 10 and 3 minutes, respectively. Thermal treatments (HT) were performed at the same temperatures for 60, 25 and 10 minutes. Juices' quality and safety were evaluated before and after treatments.

All the treatments fulfil the FDA recommendation of 5-log microbial reduction. Most of the quality parameters were retained after both processes. These results proved that a mild heat process could be applied to fruit juices, allowing the obtention of a safe and improved final product's quality.

Keywords: Thermosonication, kiwifruit juice, thermal treatment, quality, *L. innocua*.

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