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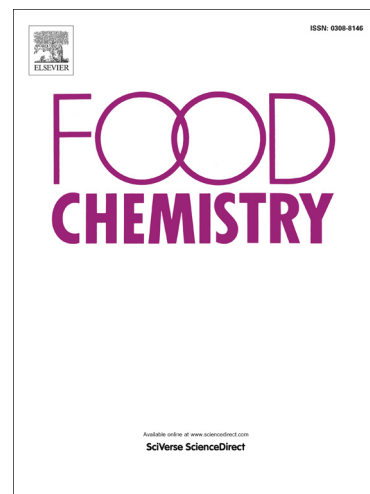
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Ultrasound processing of guava juice: effect on structure, physical properties and lycopene *in vitro* accessibility

Stephanie Suarez Campoli, Meliza Lindsay Rojas, Jose Eduardo Pedroso Gomes do Amaral, Solange Guidolin Canniatti- Brazaca, Pedro Esteves Duarte Augusto*

Department of Agri-food Industry, Food and Nutrition (LAN), Luiz de Queiroz College of Agriculture (ESALQ), University of São Paulo (USP), Piracicaba, SP, Brazil

*Corresponding author: Avenida Pádua Dias, 11, Piracicaba, SP 13418-900, Brazil.
pedro.ed.augusto@usp.br

Abstract

The present work evaluated the effect of high-power ultrasonication on the structure and properties of guava juice. The microstructure, concentration of lycopene, *in vitro* accessibility of lycopene and physical properties (pulp sedimentation, turbidity and colour) were evaluated. The results of this study demonstrate that the ultrasonication disrupts the guava cells, releasing their content and altering the juice properties. Although this processing decreases the total amount of lycopene in guava juice, the release of lycopene from the cells increased its *in vitro* accessibility. Furthermore, the size reduction of the dispersed pulp particles improved the physical stability of the juice, avoiding pulp sedimentation without significant colour changes during storage. In conclusion, it is suggested that ultrasonication is an interesting alternative to improve the physical and nutritional properties of fruit juices.

Keywords: guava juice, *in vitro* accessibility, lycopene, physical proprieties, ultrasound.

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