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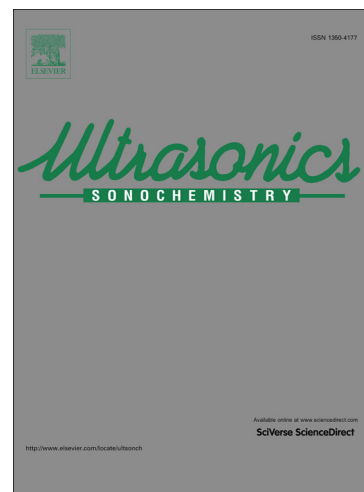
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Ascorbic acid stability in fruit juices during thermosonication

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Abstract

Thermosonication is an emerging technology useful for inactivating microorganisms and enzymes in fruit juices. However, the effect of the ultrasound processing on the ascorbic acid content is not clear and the results reported in the literature are contradictory. In this work, the impact of sonication and thermosonication on the ascorbic acid content was first evaluated in model systems. Degassed model solutions at four different pH values (3-6) were processed with or without sonication for 60 min at two different conditions of temperature (25 and 55 °C). In all cases, the ascorbic acid was stable under the treatment. After that, two commercial deaerated fruit juices were processed with and without US at 55 °C. The ascorbic acid was also retained in these juices after the ultrasound processing under the most severe conditions studied. In conclusion, previous degassing/deaerating of fruit juices is recommended to prevent ascorbic acid degradation when thermosonication is applied.

Keywords

Ultrasound; ascorbic acid; nutritional quality; vitamin C; food processing; thermal processing; model solutions

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