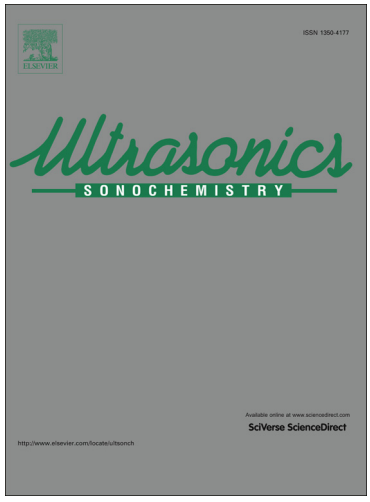

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Effect of acoustically assisted treatments on vitamins, antioxidant activity, organic acids and drying kinetics of pineapple

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Abstract

The effects of the application of an acoustically assisted treatment on the vitamins (C, B_1, B_2, B_3, and B_5), the antioxidant activity (DPPH, FRAP), the polyphenol and flavonoid contents, the organic acid contents (citric and malic) and drying kinetics of pineapple (Anannas cosmosus. var. Perola) have been studied. Treatments were carried out using two different soaking media: distilled water and pineapple juice at 30 °C during 10, 20 and 30 min without and with acoustic assistance (23.2 W/L). After treatment, samples were dried at 60 °C and 0.5 m/s during 8 h. The quality parameters were determined in untreated, treated, and treated-dried samples. The acoustic assistance promoted an increment of vitamins B_1, B_2, B_3 and B_5, total flavonoid and malic acid contents, and a reduction of vitamin C, total polyphenol content, antioxidant activity and citric acid content in treated samples. However, in all treated-dried samples the final content of those quality parameters was higher than the observed in the untreated dried sample.

KEYWORDS: Pineapple, acoustics, vitamin C, vitamins B, antioxidant activity, organic acids, drying kinetics