

Abstract

One of the most promising segments in the food industry in Brazil is the fruit juices sector, showing an increase in volume of 20 to 30% per year. This market share is being disputed by several industries, which look for possibilities of developing novel foods. Tropical fruit market is still incipient in Brazil but presents a great potential, considering the great bio-diversity availability. The increasing demand for processed fruit puree, destined to the juice processing or directly to the consumer, market, arouses the industry interest to novel technologies, which may offer competitive advantages to these products. High hydrostatic pressure (HHP) has been suggested as an alternative method for food processing. HHP processing allows to obtain a final product with better nutritional and sensory characteristics compared to conventional technologies, meeting the consumer current demands for minimally processed, high quality and safe foods. The quality retention in HP processed foods is associated to time-temperature-pressure factors causing only minimum chemical changes and therefore minimum changes on sensory and nutritional characteristics. This study aimed to investigate the temperature profile of passion fruit, pineapple and açaí purees developed during HP processing. Two sets of experiments were run, and samples packaged in polyethylene tubes were processed in a static pilot pressure system (Stansted Fluid Power, UK) for 15 minutes at 25°C, from 300 to 500 MPa. Our previous studies have shown that such conditions have assured appropriate microbiological conditions of the products according to the Brazilian legislation. In this study pressure and temperature were constantly monitored and recorded (at 30 seconds intervals) during the process. The results revealed that at the studied conditions, the products showed a compressing heating characteristics very similar to that of water demonstrating an increase of 2.5 to 2.7°C each 100 MPa. The minor and almost negligible temperature increase suggests that the preservation treatment capacity is mainly associated to the pressure and not to the temperature effect.