Pasteurized coconut juice processing with high current pulse application

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Abstract: Coconut juice has increasingly gained the popularity as the energy drink for both national and international markets because of its high nutritional values with substantial contents of vitamins and minerals. In order to sustain the nutritional values with the reduction of microbial contamination of coconut juice, the nonthermal with high current pulse application (HCI) was experimented with the coconut juice under the batch processing. High current impulse chamber (HCI) was constructed. The application of the direct electricity through HCI in a series of 100 mL/ section contained the contaminated coconut juice with total microorganism of $3.05 \times 10^2$ CFU/mL. The HCIG was applied on four different amount of coconut juice as 100 mL (1 chambers), 200 mL (2 chambers), 300 mL (3 chambers) and 400 mL (4 chambers) with 3 kA, 5 pulses as 22°C. Result showed that HCP at 3 kA, 5 pulses under the batch treatment approximately 85% of microbial death was detected in all sections. Results revealed that high current pulse electrical field at 3 kA, 5 pulses under batch condition had a great potential to pasteurize the microbial contamination in coconut juice processing.

Keywords: Coconut juice; Nonthermal process; High current pulse application; Pasteurization; Chamber