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Effect of pulsed electric field processing on the physicochemical, flavor quality, and functional properties of cherry fruit chunks in solution

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Pulsed electric field (PEF) is superior to traditional heat treatment of foods because it avoids or greatly reduces the detrimental changes in the sensory and physical properties of foods. However effects of PEF on the chemical and nutritional aspects of foods must be better understood before it can be used in food processing. Cherry fruits processed into chunks require strict treatment conditions to protect its quality, especially the flavor which is one of the important attributes in determining the consumer's acceptability. The general objective of this research is to study the effect of PEF processing on the physicochemical properties, flavor profile, and functional properties of sweet cherry chunks in solution. The effect of PEF treatment on the release of bioactive anthocyanin and Vitamin C will be determined. This study will also investigate the growth-enhancing properties of PEF-processed cherries for probiotic bacteria. Two treatments will be used in this study, the control (untreated) and PEF-treated samples and will be using three time points including before PEF, immediately after PEF, and 24-hour incubation at 4oC after PEF treatment. Different PEF energy intensities will be used ranging from low to high. This research will benefit the food industry in meeting consumer's demand for minimally-processed food products.

Biography

Kristine Ann Sotelo has finished her Bachelor of Science in Chemical Engineering at FEATI University in 2007. After graduation, she joined the Industrial Technology Development Institute of the Department of Science and Technology in the Philippines as a Science Research Specialist and was assigned to the Food Processing Division (one of the four Research and Development divisions of the institute). She has been in the institute for more than five years now and currently on study leave to pursue postgraduate studies. She was granted a scholarship called New Zealand ASEAN Scholars (NZAS) by the Ministry of Foreign Affairs and Trade (MFAT). Presently, she is taking her Masters on Food Science at AUT University in Auckland, New Zealand.

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