

EXTEND THE SHELF LIFE OF KING COCONUT WATER

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By

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ABSTRACT

The study was carried out to extend the shelf life of king coconut water without adding artificial preservatives and using UV radiation and chilling treatments as one of the most important preservation method.

Assembled UV reactor system was used which consists of 11W UV germicidal lamp. Flow rate is 1.5 L min^{-1} . Effect of UV radiation and chilling conditions for preservation of king coconut water was determined by using eight treatment combinations, both non chilled and chilled conditions with different UV (254 nm) exposure time (1/2, 1, 1 1/2 and 2 hours) in the first experiment. Among eight treatment combinations, the best treatments were selected by visual, microbiological and physicochemical characters. In experiment 2, sensory evaluation was conducted by 30 untrained sensory panel. Selected treatments were carried out for the shelf life evaluation in experiment 3. Shelf life was determined by measuring the titratable acidity and visual observations for 20 days at the room temperature and refrigerator conditions.

In experiment 1, treatment combinations of king coconut water which was chilled and treated with UV exposure time of 1/2, 1 and 1 1/2 hours were selected as the best effective treatments. Among those three treatment combinations, chilled king coconut water with 1 and 1 1/2 hours UV treated samples were selected according to the sensory evaluation in experiment 2. There was no significant increment in shelf life of both selected treatments. In experiment 3, treated samples can be stored only for 10 days in refrigerator. It is essential to develop improved closed system to reduce the contaminations and further Experiments should be conducted by using the assembled microfiltration system with UV irradiation and higher UV dosage.