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Ofero A Caparino

Food & Beverages

Philippine Center for Postharvest Development and Mechanization, Philippines

Utilization of coconut water extracted from matured coconut

oconut (Cocos nucifera Linn.) is one of the world's most versatile natural products popularly grown in more than 90 countries. In 2007, the Food and Agriculture (FAO) reported that the Philippines ranks second among the producing countries in the world with a total production of 14.9 billion nuts per year. Approximately 80% of the nuts are processed into copra, which remains to be the biggest source of income of coconut farmers in the country. Copra is sold to commercial coconut oil mills, which process it to coconut crude oil & animal feeds. The huge volume of coconut water left unutilized during copra processing, estimated at 2.4 billion liters per year is an excellent substitute to young coconut water. Some published papers reported that matured coconut water contains more organic ions e.g. calcium, potassium, magnesium, phosphorous and magnesium compared to young coconut, which suggests a good attributes as rehydrating fluid beverage. Coconut water is a popular refreshing drink in the International market today due to its high nutritional and medicinal properties. However, proper handling and transport of raw coconut water is a critical issue because when exposed to air, coconut water can accelerate quality degradation in terms of rancidity, cloudiness and discoloration caused by enzymes present in it. Hence, it requires appropriate thermal treatment to inactivate enzymes and spoilage microorganisms, as well as proper management and protocol during processing to ensure good product quality and safety. This paper highlights a village level coconut water processing system designed and developed to produce natural and safe coconut water extracted from matured coconut. The system comprise of a coconut de-husker, washer, coconut water extractor and filtration system, pasteurizer-chiller, bottle filling, capping and sealing, labeling and packaging. Pilot testing of the complete system is being undertaken under the support of the Philippine Rural Development Program of the Department of Agriculture - a World Bank-funded project, with the end goal to empower the coconut farmers by engaging them in appropriate operation and management of a village-level coconut water processing center.

Biography

Caparino O A has completed his PhD in Biological and Agricultural Engineering/Food Engineering at Washington State University (WSU), Pullman Campus, under the auspices of the Ford Foundation International Fellowship Program-International Institute of Education, New York, USA, and WSU Graduate Research Assistantship Program. He was a recipient of the British Council Scholarship Program and the Philippines Bureau of Agricultural Research Scholarship Program for his Diploma in Agricultural Education and Master of Science in Agricultural Engineering, respectively. Currently, he is the Chief of the BioProcess Engineering Division of the Philippine Center for Postharvest Development and Mechanization (PhilMech), Philippines. His research interests include the development of emerging and innovative thermal and non-thermal processing technologies to produce nutritious and safe food products; conducts research on physical, chemical and rheological properties of selected food commodities; development of appropriate/novel packaging and storage technologies for fresh and processed foods to preserve the quality and prolong product shelf-life; and utilization of agricultural and fishery wastes into value-added products for food, agricultural and industrial application.

ofero1058@yahoo.com

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