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ADEQUATE LEAST NUTRITIONAL SUPPLEMENTATION OF COCONUT WATER COULD LEAD TOWARDS DEVELOPMENT OF A SUBSTITUENT FOR ORAL REHYDRATION FLUID COMPLYING WITH WHO STANDARDS.

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ABSTRACT

In spite of being a nutrient and electrolyte rich fluid, coconut water is considered mostly as a waste in Sri Lanka. Acute diarrheal diseases are one of the leading causes of mortality in infants and young children in many developing countries which can be easily prevented by introduction of an electrolyte rich rehydration fluid. The major objective of this research was to analyze the feasibility of using coconut water as a rehydration fluid. Four areas from which coconuts enter in to a randomly selected market were selected for sample collection. Coconuts in three maturity states were considered from each area. Several rehydration biochemical properties were analyzed for each sample. Glucose content was analyzed using glucose oxidase-peroxidase method. Sodium, Potassium, Magnesium and Calcium contents were analysed using Flame Atomic Absorption Spectrophotometry (FAAS). Chloride content was determined using an Ion Selective Electrode. Osmolality of the samples was analysed using an Advanced Micro freezing point depression Osmometer. Anti-oxidant contents were analyzed using DPPH method. Each property was compared with WHO standards for the Production of new Oral Rehydration Salts. Potassium content and the Osmolality of all the samples were higher than the WHO standard levels and all the other properties were below the accepted levels. However samples contained considerable amounts of Calcium, Magnesium and Antioxidants. Based on this pilot study it can be concluded that only minimal supplementation is required towards development of an oral rehydration solution using coconut water. Further studies are ongoing aiming at ultimate value addition as well as waste management.

Keywords: coconut, rehydration, electrolytes

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DEVELOPMENT OF READY-TO-SERVE (RTS) FRUIT DRINKS WITHOUT ADDING PRESERVATIVES

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ABSTRACT

Microbial safety of commercially available RTS is achieved by adding higher levels of preservatives than recommended. Chemical preservatives at higher intake results in health problems. Hence this study was carried out to find out to produce RTS without adding chemical preservatives.

For level of acidity was selected and to protect their sensory properties the same Brit/Acid ratio was maintained. Both pineapple and mix fruit juices prepared using higher levels of acids were sensory evaluated for their suitability of consumption. Brit/Acid ratio 14.8/0.32 was a final to be significantly acceptable for both juices.

Microbial studies showed all the treatments were free of microbial growth even without added chemical preservatives. No microbial growth was observed in commercial Brit/Acid ratio. Hence higher acid level added treatments can commercially be recommended to produce RTS without significant changing of sensory properties. Hence preservatives added for the preservations of RTS can be eliminated by increasing acid level through maintaining Brit/Acid ratio.

Keywords: RTS, Preservation, Sugar/Acid