IDENTIFYING SUITABLE PRESERVATION TECHNIQUE FOR KING COCONUT WATER (*Cocos Nucifera Var. Aurantiaca*) USING NATURALLY AVAILABLE INGREDIENTS AND ITS QUALITY ASSESSMENT

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ABSTRACT

It is evident that there is an increasing demand for natural beverages with preserved natural sensory properties. King coconut (*Cocos nucifera var. aurantiaca*) is the best and widely acceptable natural refreshing beverage because of its nutrient contents like, protein, fat, vitamin E, iron, calcium, phosphorus, potassium, sodium, sugar, and enzymes, etc., which are helping to maintain human health. Although, it is not as convenient to use for a longer period as its original form. Therefore, there is an opportunity to develop a ready to serve drink (RTS) to encourage consumers. Therefore, this study was conducted to develop an RTS beverage from King Coconut (KC) water by adding naturally available preservatives. For that, lime was added as a natural citric acid agent while clove was added to inhibit microbial growth (responsible for fermentation).

King coconut water, an age of eight to nine months, was collected and their Brix° value standardized to 9°. Lime juice (0.02 mL/100 mL) was added to KC water and pasteurize at 72 °C for 2.5 minutes as the initial step. Next, 0.08 g/100 mL of cloves and 0.02 mL / 100 mL of lime was added to KC water and pasteurized at 72 °C for 2.5 minutes. All the samples were refrigerated (4°C) and stored for 4 days. pH, total soluble solids (TSS), titratable acidity, and moisture content were measured at the beginning and after 4 days of storage. After four days of storage period the results showed that the pH, TSS, titratable acidity, moisture content, were 5.5, 9°, 0.06%, and 94%, respectively. The product was microbiologically (less than 50 CFU/mL) safe for consumption after 4 days of storage.

Sensory analysis was done in both steps 1 and 2 through untrained panelists to find consumers' preference of taste, colour, odour, appearance, overall acceptability of treated king coconut water. At step 1 highest acceptance for overall acceptability was acquired by the Su/KC+nL+P sample and in step 2 it goes to sample natural one without added anything SKC+nL+nCl+nP sample. Whereas it is not safe for consumption because of its microbial load. Even though the pasteurized king coconut water with additives is safe to consume, it showed the least acceptability for colour, odour, and appearance due to the colour change from opaque white to light brown (GREYED-ORANGE GROUP 177-C

Greyish Reddish Orange) after adding the clove. The minimum level of acceptance for the odour and taste may be due to the astringent flavor created by the clove. Although it obtained the least preference for the said sensory attributes, it exhibits the same level of preference with the commercially available soft drink and is microbiologically safe to use. Therefore, when considering the overall acceptability of the (KCS+L+Cl+P) it is possible to develop it as a ready-to-serve drink with required adjustments.

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