

POTENTIAL FOR DEVELOPING A BEVERAGE WITH MATURE COCONUT WATER DETERMINED BASED ON SENSORY EVALUATION

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Coconut water is thermally processed to extend its shelf life, which is otherwise less than few hours under ambient conditions, thus is discarded as a waste material. As heat treatments negatively affect sensory attributes, the potential for developing a beverage from mature coconut water was investigated based on sensory properties.

Citric acid (reduce the pH to 4.6±0) and preservatives (40 mg L⁻¹ sodium metabisulphite and 200 mg L⁻¹ sodium benzoate) were added to filtered mature coconut water, and the sample was heated in a plate heat exchanger; 90 °C for 10 s (HS90) and 90°C for 10 s followed by autoclaving at 100 °C for 10 min (HS100). The heated samples were hot-filled into glass bottles, crown capped and stored at 27±2°C for six-week. The total plate count (TPC), yeast and mould count (YMC), *Escherichia coli* and preference for flavour (paired preference test, 35 panellists) of the initial and 4-week old samples were determined. The TPC and YMC of the samples before and after 4 weeks in storage were less than 1 cfu/mL. *E. coli* were absent in all the samples. As no significant difference (P>0.05) in preference for flavour between HS90 and HS100 was evident before storage and after 4-week in storage, degree of liking for colour and flavour, and overall acceptability of the samples stored for 4-week were tested (7-point hedonic test, 32 panellists). As no significant difference (P>0.05) was evident in degree of liking between HS90 and HS100, orange flavourant, (0.5, 0.75 and 1 g L⁻¹) was incorporated into HS90, and preference for flavour and aroma was evaluated (ranking test, 30 panellists), and overall acceptability of the samples with and without the flavourant was compared (7-point hedonic test, 32 panellists). The flavourant level did not significantly affect (P>0.05) the preference for flavour. The most preferred aroma was evident in the sample with 1 g L⁻¹ flavourant. Therefore, the sample containing 1 g L⁻¹ flavourant was compared with a sample without the flavourant using 32 panellists and a 7-point hedonic test and the sample with the flavourant was significantly better (P<0.05) than sample without the flavourant.

Heating coconut water in a heat exchanger at 90 °C for 10 s followed by hot-filling into glass bottles and capping them with crown corks can be recommended for processing. Sensory properties of the product can be further improved by incorporating 1 g L⁻¹ of orange flavour.