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Manufacturing of coconut water vinegar and some observation on the physico-chemical and sensory qualities of the product

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Vinegar is a condiment used as an additive for the preparation of various dishes and normally coconut vinegar is prepared using coconut sap or toddy. Nowadays it is very difficult to find natural coconut vinegar. However coconut water, a waste of desiccated coconut and copra industry can be utilized for vinegar preparation. This study was aimed to develop an appropriate low cost vinegar making technique and evaluate the physico chemical, microbial and sensory qualities of the product.

Coconut water was adjusted to 15 ^{0}Brix (Total Soluble Solids) by adding cane sugar. Pasteurized (100 ^{0}C for 5 min) sweetened coconut water was allowed to undergo alcoholic fermentation for one week by addition of baker's yeast. Changes in alcohol percentages were determined. Then the product was repasteurized at 60 ^{0}C for 20 min and kept for acetic fermentation for 7 weeks by adding/ without adding 10% mother vinegar to its total volume and changes in acidity level were determined on weekly basis. The product was pasteurized (20 min at 60 ^{0}C) and was analyzed for specific gravity, Total Soluble Solids (TSS), titratable acidity (TA), aerobic plate count, total coliform count and sensory properties.

The maximum alcohol content was obtained on the 5th day and it reached 8 % (v/v) during the alcoholic fermentation period. By the third week of acetous fermentation, 4.8% (v/v) acetic acid level was obtained in the sample mixed with mother vinegar. However, acetic acid concentration remained at 0.3% during the entire study period in the sample without mother vinegar. Specific gravity, TSS, TA, aerobic plate count and total coiform count were 1.02, 3.93%, 4.8%, $1x10^2$ and 0 (nil) respectively. The sensory quality of the coconut water vinegar, commercial natural toddy vinegar and commercial artificial vinegar were not significantly different ($p<0.05$). This study revealed that coconut water can be processed into vinegar by allowing conversion of sweetened coconut water to alcohol and acetous fermentation by adding 10% mother vinegar.