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EVALUATION OF MICROBIAL QUALITY OF UNFERMENTED COCONUT SAP WITH DIFFERENT COLLECTION METHODS

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ABSTRACT

Coconut (*Cocos nucifera*) sap is one of the natural drinks, being traditionally tapped from unopened inflorescences of the coconut palms. In the present study, microbial quality of coconut sap that was collected using three methods; Treatment 1: application of hal bark (*Vateria copallifera)* to the 4L clay pots (TM), Treatment 2: Novel sap collection method (NSM), Treatment 3: application of 5g of hal bark in to 30 cm X 50 cm polythene bag in 4L clay pots (MTM) were evaluated. Sap was collected for 12 h duration and Total Plate Count (TPC) and Yeast and Mold Count (YMC) were determined. Colonies were isolated and preserved. DNA extractions of microbes were done by CTAB (Cetyl trimethylammonium bromide) method with modification. ITS1 forward and ITS4 reverse primers were used to identify yeast species and 27 forward and 1492 reverse primers were used for the bacterial species in Polymerase Chain Reaction **(**PCR). Amplified products were separated using 1.5 % agarose gel and purified DNA was sent into Macrogene Korea for sequencing. Four types (A, B, C and D) of distinct microbial colonies were isolated from the differently collected coconut sap samples. DNA homology data revealed that, A is *Naumannella halotolerans* only presented in NSM. B and C *Serratia marcescens, are Achromobacter xylosoxidans* contained in TM and MTM. *Saccharomyces cerevisiae* (D) was found in all the collection system. The collection method affects for the microbial quality and quantity of unfermented coconut sap.