

**PHYSICO-CHEMICAL CHARACTERIZATION AND MOLECULAR PROFILING
OF BACTERIA ASSOCIATED WITH PASTEURIZED BUFFALO MILK
FROM A DAIRY COOPERATIVE OF NUEVA ECIJA**

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BIOGRAPHICAL SKETCH

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ABSTRACT

PRANILLA, WILMA ANGELOU P., Department of Biological Sciences, College of Arts and Sciences, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, **JUNE 2018**, **PHYSICO-CHEMICAL CHARACTERIZATION AND MOLECULAR PROFILING OF BACTERIA ASSOCIATED WITH PASTEURIZED BUFFALO MILK FROM A DAIRY COOPERATIVE OF NUEVA ECIIJA**

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Pasteurization process is the practice that is applied to raw milks in order to kill the undesirable microorganisms that thrives on it. However, some microorganisms are capable of surviving the pasteurization process, and also post-pasteurization contamination happens especially when pasteurized milk is improperly handled and stored or exposed into an environment without proper sanitation. A dairy cooperative in Nueva Ecija has developed pasteurized milk products for commercial consumption. This study aimed to evaluate the physico-chemical characteristics and microbiological quality of pasteurized milk products developed at a dairy cooperative of Nueva Ecija, and to isolate, characterize and the bacteria thriving on milk samples through cultural, morphological and molecular identification. This present study showed that the physico-chemical properties and microbiological quality of the pasteurized milk samples were inconsistent. Most of the properties did not meet the standard values for pasteurized milk. Eleven bacterial colonies with different cultural characteristics were successfully isolated and characterized morphologically. The isolates were subjected to Gram staining and most of the isolates were Gram-negative bacteria. Each DNA of the bacterial isolates were extracted prior to molecular identification through PCR. Six bacterial DNA showed

positive amplification to the molecular procedures made. The PCR products of the 6 positive samples were sent to Macrogen, Inc. (Korea) for sequencing, and the resulting sequences were analyzed through Basic Local Alignment Search Tool (BLAST) analysis for determination of bacterial identity. The bacterial isolates were identified as *Pseudomonas aeruginosa*, *Exiguobacterium indicum*, *Bacillus licheniformis*, *Pseudomonas fulva* and *Ochrobactrum anthropi*; which are commonly found in the dairy industry as contaminants.

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