

Morphological Identification and Spore Density Rate of Various Bacterial Groups Exploration of Luwak Coffee Feces in Fermented Liquid

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ABSTRACT

The utilization of civets has become a critical issue in the production of civet coffee, making this commodity difficult to produce quickly and thus impacting the fulfillment of global demand. One solution to the issue of civet coffee supply is to produce civet coffee without the use of civets by utilizing microorganisms found in civet feces. This study aims to analyze the morphological characteristics of various bacterial groups from civet feces in fermented liquid. The research method used in this study is observation and descriptive data analysis, where data obtained from the laboratory are described descriptively. The morphological characteristics of bacteria from civet feces in the fermented liquid include colors such as yellow, blue, small pink, large pink, white, fluorescent, milky white, and clear zones. The bacteria vary in size—small, media, and large. The colony shapes are circular and irregular. Colony elevations are convex, flat, and umbonate. Colony edges are smooth and wavy. The colony surface characteristics include mucoid/slimy, smooth, wavy, and slightly mucoid. The cell shapes are bacillus and oval. Gram staining results include both gram-positive (+) and gram-negative (-). The microorganisms observed include both bacteria and yeast. The spore density rate of the bacteria from civet feces in fermented liquid during the first week has an average of 0.929×10^9 spores/ml. In the second week, it increased to 1.967×10^9 spores/ml. The spore density in the third week was the highest, with an average of 2.156×10^9 spores/ml, while in the fourth week, it decreased to 1.181×10^9 spores/ml. The identification of bacteria found in the fermented liquid of civet feces revealed two types of bacteria: *Lactobacillus* and *Pseudomonas*.

Keywords: Civet, Bacteria, Morphology, Spore Density