POTENTIAL OF RUBBER WASTEWATER AND PADDY FIELD MUD AS BIOELECTRICITY PRODUCERS USING SINGLE-CHAMBER MICROBIAL FUEL CELL

UNDERGRADUATE THESIS

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ABSTRACT

Research on "Potential of Rubber Wastewater and Paddy Field Mud as Bioelectricity Producers using Single-Chamber Microbial Fuel Cell" was conducted from February to March 2024 at the Microbiology Research Laboratory of Andalas University and the Microbiology Laboratory of Bukittinggi Veterinary Center. The purpose of this study was to determine the potential of rubber wastewater and paddy field mud in the production of electricity through the process of degradation of organic matter by microorganisms. Treatment by combining rubber wastewater and paddy field mud with a ratio of 1:1, 1:2, and 1:3. The results showed the highest voltage production by rubber wastewater was 228.1 mV and by paddy field mud was 27.4 mV. In the treatment, the highest voltage was 75.3 mV at a ratio of 1:1. There was also a decrease in waste load in the form of COD, BOD, TAN, TSS, and pH. The isolation results on the MFC anode found 6 isolates, namely *Citrobacter* sp.1, *Citrobacter* sp.2, *Citrobacter* sp.3, *Citrobacter* sp.4, *Clostridium* sp, and *Bacillus* sp.

Keywords: Microbial Fuel Cell, Rubber Wastewater, Paddy Field Mud, Alternative Energy, Anaerobic Microorganism