

ABSTRACT

Along with the development of technology, the use of electrical energy is increasingly needed. Alternative energy is urgently needed with the increasing demand for electrical energy. The use of electrical energy in Indonesia continues to increase every year. There are many innovative alternative energy sources that can be used, one of which is the Microbial Fuel Cell. MFC is a power generation system by utilizing the interaction of bacteria found in nature. With one type of MFC system, namely Dual chamber and varying the substrate in the system, it can produce a voltage and current source of 1,455 volts and 0,032 A. In this study, experiments were carried out using the Single Chamber MFC system and substrate with variations of paddy field sludge and banana peel waste fermentation. The purpose of this study was to focus on variations in the fermentation time of banana peel waste with five variations, namely, not fermented, 1 day of fermentation, 2 days of fermentation, 3 days of fermentation and 4 days of fermentation. Then analyze and compare reactors with variations in which fermentation time can produce the maximum voltage and current. In this study, it was found that the production values of the voltage and electric current generated were found in the 5th reactor which used banana peel waste fermentation for 4 days of 0.61 volts and 0.4 mA.

Keyword : *Microbial Fuel Cell, Single Chamber, banana peel waste, paddy field mud, voltage, current.*