UTILIZATION OF COW MANURE IN MICROBIAL FUEL CELLS

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ABSTRACT

Resource recycling and the proper treatment of animal waste to reduce its environmental impact are currently important issues for the livestock industry. A microbial fuel cell (MFC) offers the possibility of harvesting electricity from fuel sources that are generally microbially degradable organic matter. The generation of electricity from cow manure in different treatments was investigated. A two-chambered MFC was constructed from accessible and inexpensive materials. Data were recorded and collected every day for 35 days. The MFC with the 20% cow manure with rice stalk yielded the highest power output of 32.028 mW/m^3 and the highest current density of 69.022 mA/cm^2. The addition of another substrate, and therefore, another fuel source for the bacteria, added to the electricty produced by the cow manure alone. Results of the study show that it is possible to use MFCs to generate electrcity from cow manure. Further studies are needed to realize the full potential of cow manure as a fuel source for MFCs as well as to lessen its contribution to the wastes in the environment.