

Sea water desalination using debaryomyces hansenii with microbial desalination cell technology

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Abstrak

Desalination is a way to process sea water with a high salinity level, which makes water non-consumable. Various desalination technologies, such as distillation, vapor compression, and reverse osmosis, have been developed but require energy and large financial investments. Microbial desalination cell (MDC) is a modified desalination technology of a microbial fuel cell that can remove salt content in water with the help of microorganisms through organic matter degradation. This research used *Debaryomyces hansenii* to degrade organic material in the anode chamber. The ratio of the volume chamber, the volume ratio of culture:substrate, and the volume progression of the culture and substrate were evaluated in terms of salt removal and electricity generation. This research shows that MDC using a 9:1:9 ratio of the volume chamber, a culture:substrate ratio of 2:3 (v/v), and a volume progression of the culture and substrate of 1.5 times gave the best desalination performance: a salt removal level of 55.03%