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Biogas production by fermentation of residual biomass of microalgae and duckweed

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Abstract

This article discusses the use of residual biomass of microalgae *Chlorella Sorokiniana* and the residual biomass of duckweed *Lemna minor* (OBR) as a raw material for biogas production. Residual biomass is formed after the treatment of valuable components from the biomass of microalgae and duckweed. The fermentation process was carried out using an inoculant – lyophilized activated sludge with the addition of vitamins and macro- and microelements. Experimental studies were carried out using the Anaerobes Testsystem AMPT-II system, which made it possible to maintain a temperature of 37 °C. When fermenting 2.1 g of OBH, it was possible to obtain 205 ml of methane, and when fermenting 2.5 g of OBR, 256 ml of methane was released, while in the control bioreactor 45 ml of methane was formed.

Obtaining biogas by fermenting the residual biomass of microalgae and duckweed can significantly increase the amount of methane released, which is part of biogas. The lipids and carbohydrates included in the biomass can intensify the fermentation processes and increase the amount of biogas released.

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