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Butanol Production from Potato Peel Waste by *Clostridium acetobutylicum*

Ritu Kamboj and Dhanya M.S.

Department of Environmental Sciences and Technology,
School of Environment and Earth Sciences
Central University of Punjab, Bathinda, 151001, India
E-mail: krritu87@yahoo.in, dhanyasubramanian@gmail.com

Abstract—The rising global energy demand and environmental concern increased the interest in renewable energy sources. The bioenergy is a good option that relies on the utilization of various biomass waste forbiofuels. Potato (SolanumtuberosumL.) is one of the important food crops in domestic and industrial use. The processing of potatoes generates a large amount of peel as waste that contains high fermentable carbohydrates. The butanol is an emerging biofuel with high efficiency and least environmental adverse impacts. In the present study, the production of butanol using potato peel waste (PPW) by the free cells of Clostridium acetobutylicum MTCC 11274 was investigated. The batch fermentation of potato peel waste (2%) with freecells resulted in the production of0.11g/L butanol in 72 h. The acid pre-treatment (1% w/v)of potato peel waste resulted in increased butanol production of 0.17 g/L in 72h and further it was doubled in 120 h. Thus, the potato peel waste is a potential biomass waste for the production of biobutanol.

Keywords*: Biobutanol, potato peel waste, Clostridium acetobutylicum.*

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