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Professional review

Potential of bacteria for bioethanol production from lignocellulosic raw materials

Abstract

Agriculture, forestry and food industry are sources of large quantities of lignocellulosic biomass, which can be used as an easily accessible and cheap renewable raw material for production of different bioproducts. One of these bioproducts is also bioethanol. This paper provides an overview of bacteria used and/or investigated for bioethanol production from lignocellulose-containing feedstocks. In the research of bioethanol production using bacteria, various approaches are applied in order to increase ecological and economic efficiency of bioprocess. In addition to conventional multi-stage bioprocesses that are carried out using monoculture, highly integrated (consolidated) bioprocesses and applications of microbial co-cultures are also in developing stage.

Keywords: bioethanol, lignocellulose, bacteria, hexoses, pentoses, inhibitors