

Lignocellulosic Biomass – A Sustainable Feedstock for Acetone-Butanol-Ethanol Fermentation

ABSTRACT

Biobutanol has been identified as a promising future biofuel. However, generally the extraction and separation of biobutanol from the fermentation mixture is a costly process. Therefore, the idea of using acetone-butanol-ethanol (ABE) mixture directly as biofuel were proposed to eliminate the recovery process. ABE has been identified as a promising future biofuel. The feedstocks play an important role in the feasibility of ABE as a fuel. Lignocellulosic biomass is seen as a promising feedstock for the production of biofuels. Thus, in this review, ABE biofuel is been summarized from three aspects namely (i) selection of feedstocks, (ii) microbial selection and (iii) hydrolysis, fermentation, and purification techniques. Anaerobic fermentation together with commonly employed recovery processes are discussed in the second part of this review. This review concludes with different challenges and future research in ABE fermentation that can pave the way for future commercialization of this promising biofuel.