

# Bioethanol production from agro-based raw materials using biocatalysts

S.C. Patnaik<sup>1</sup> and G K Roy<sup>2,\*</sup>

<sup>1</sup> Lecturer, Dept. of Biotechnology, College of Engineering and Technology (BPUT),  
Bhubaneswar, India

<sup>2</sup> Professor (Retd.), Chemical Engg., National Institute of Technology,  
Rourkela, India

\* Corresponding Author ([gkroyster@gmail.com](mailto:gkroyster@gmail.com))

## Abstract

Bioethanol is a form of renewable energy that can be produced from renewable biomass. Bioethanol as a biofuel has been one of the greatest promises when it comes to an alternative replacement to traditional fossil fuels used to power vehicles and industries. Importance of ethanol as a substitute for petro-fuel has been emphasized and production of bio-ethanol compared to the synthetic one has been highlighted. The various process steps along with parameters affecting the manufacture of bio-ethanol from agro-based raw materials have been detailed. Recent advances relating to the development of cost-effective technologies and optimization of process parameters have been presented. The relative merits of different microorganisms used for catalyzing and inhibiting associated bioreactions (primary/side ones) have also been incorporated.

**Key words:** Bioethanol production, agro-based raw materials, recent advances in bioethanol production, biocatalysts