

Large-scale bioethanol production through cell-free enzyme system from beer waste: A step towards process industrialization

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Since last few decades, a shift from fossil to sustainable resources for production of biofuel has received a tremendous attention. Implication of several strategies developed for bioethanol is often a tedious job that is limited by certain factors. Serious efforts are required to develop a system that can run industrial process for bioethanol production. In current study, we have developed a cell-free enzyme system from waste of beer fermentation broth (WBFB) that could be effectively employed for production of bioethanol at large-scale. WBFB by itself is a rich source various enzymes and substrates. Simultaneous saccharification and fermentation process was run at gradually increased temperature that effectively produced bioethanol in larger quantities. With further developments and operational designing, this system can be effectively employed for industrial-scale bioethanol production to overcome the issues of depleting nonrenewable natural fuel resources.