

Studies on Bioethanol Production from Fruit Waste using *Saccharomyces cerevisiae*

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Abstract—There is urgent need to resort an alternative energy sources because of rapid exhaustion of fossil fuel. Biofuel is an alternative to petroleum-based fuel. The continuous utilization of fossil fuels witness the depletion of oil-reserve, which in turn increases the price of Petroleum products. Hence the demand of an alternate fuel is in the fore-front. Biofuel or bioethanol resolves this critical problem. Among the liquid fuels, ethanol is used as an alternative to petroleum by blending with petrol with various proportion. It has been earlier reported that the use of 85% ethanol and 15% gasoline reduced the emission of greenhouses around 38% compared to fossil fuel. Another problem has been arisen because of open dumping of waste which would give malignant to the nature habitat at surrounding area of dumping sites. To reach the future demand of ethanol and for proper management of waste, it should be produced in high quantity from wastes. Thus, we are interested in production of ethanol from fruit waste (as substrate) and optimizing the parameters for higher yields of ethanol. The various pretreatment methods viz., the acid hydrolysis, alkali hydrolysis, and steaming resulted in the significant release of fermentable sugars from the Fruit waste. *Saccharomyces cerevisiae* has emerged as a potential organism for ethanol production. The present investigation was undertaken to optimize the fermentation parameters and finally to study the ethanol production from the hydrolysate of fruit waste. The maximum ethanol production (17.37 g/L) was obtained at a substrate concentration of 5.8% (v/v) at pH 6.5. We are in the process of enhancement of ethanol production by optimising different parameter.