

Production of bioethanol from *Enterobacter aerogenes* by glycerol in anaerobic culture

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In recent years, crude glycerol which is by-product of the biodiesel process was rapidly increased in quantity.

In this study, ethanol production from pure and crude glycerol by *Enterobacter aerogenes* ATCC29007 was carried out in anaerobic culture. Also, the effect of media optimization was investigated for improved ethanol production. Optimization of main media for ethanol production was performed by response surface method (RSM). The major factors for RSM with the optimized values were as follows: 6.5 g/L peptone, 3.8 g/L ammonium sulfate, 2.1 g/L citrate dehydrate and 12 g/L glycerol. Ethanol yield and ethanol production were respective 0.96 mol ethanol/ mol glycerol and 5.38 g/L in the pure glycerol, while ethanol yield and ethanol production were approximately 0.91 mol ethanol/ mol glycerol and 5.29 g/L in the crude glycerol during 192 h fermentation.