

**MICROBIAL PRODUCTION OF 1,3-PROPANEDIOL FROM  
"INDUSTRIAL" GLYCEROL.**

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**Abstract**

Glycerol, a renewable resource, is a by-product of the alcoholic fermentation of glucose and the soap industry. The large surplus of glycerol in the market is expected to expand further with the spread of biodiesel plants using oilseeds. Thus glycerol price will probably decrease and therefore its biological conversion to a more demanded chemical such as 1,3- propanediol could help to reduce glycerol surpluses on the market. 1,3- propanediol is a versatile degradable intermediate compound for the synthesis of heterocycles and a monomer for the production of polymers such as polyesters and polyurethanes.

It has been shown that some clostridial species can convert glycerol to 1,3- propanediol with an appreciable yield. Due to its safety record, *Clostridium butyricum* is the preferred strain for potential industrial use.

Batch fermentations with and without pH regulation were carried out with *Clostridium butyricum* VPI 3266, using different concentrations of " industrial " glycerol ( 65 % glycerol ) from a biodiesel production process. Bacteria were able to grow in 50 g/l of "industrial glycerol " and to produce 0.48 g 1,3 propanediol / g glycerol consumed.