

Economic assessment of biodiesel production : Comparison of alkali and biocatalyst processes

Abstract

This study deals with the economic assessment of biodiesel production using three catalytic processes (1) alkali (2) soluble enzyme and (3) immobilized enzyme. All the processes were considered to be operated at batch mode with a production capacity of 103 tonne. Biodiesel production cost using alkali catalyst process was found to be lowest (\$ 1166.67/tonne) compared to soluble lipase catalyst (\$7821.37/tonne) and immobilized lipase catalyst (\$2414.63/tonne) process. The higher production cost was due to the higher cost of the enzyme and the higher reaction time of enzymatic process. However, reuse of immobilized catalyst decreased the production cost drastically unlike soluble enzyme catalyst.