

Evaluation of VFA concentration by observing draw solution

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The subsidence of fossil fuels has led to an increase of research for production and application of volatile fatty acids (VFA) from biomass for fuels and chemicals in recent years. One of the most important processes in the production is the enrichment of the product. A laudable method for enriching VFA is a process known as FO (forward osmosis); draws water from the feed solution to draw solution.

FO process differs from other established methods due to its spontaneousness; hence, the amount of energy needed for phase variation is not required. Thus, it is used to increase the concentration level of the bio-product produced during fermentation.

In this experiment, observation and comparisons are made between the concentrated rates in different FO systems. The variables of the experiment verify what type and initial concentration the draw solution is. The consideration of the current draw solution, NaCl₂, being replaced by another draw material cannot be dismissed.

As a result, additional efficiency factors can be utilized for the enrichment of bio-products in a large-scale system.