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CROSSFLOW MICROFILTRATION OF DISTILLERY STILLAGE: A RESPONSE SURFACE METHODOLOGY APPROACH

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Abstract

Stillage (distillery wastewater) is a major waste by-product from process of bioethanol production. It contains large amounts of organic matter and suspended solids, so it should not be disposed in the nature before previous treatment. This work studies the application of ceramic microfiltration membrane for stillage purification. Also, the influence of operating factors on permeate flux and removal efficiency was investigated using Response Surface Methodology. The factors considered for design of experiments were transmembrane pressure, feed flow rate and pH. It was determined that experimental factors didn't affected the efficiency of stillage purification, but they influenced the change in permeate flux during microfiltration. The most significant effect on permeate flux has feed flow rate.

Key words: distillery stillage, microfiltration, response surface methodology, wastewater

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