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Ultra filtration in food processing industry: Review on application, membrane fouling and fouling control

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The use of membrane technology as a processing and separation method in food industry is gaining wide application. Membrane separations can be used either as alternatives to conventional techniques or as novel technology for processing new ingredients and foods. Membrane separations are considered green technologies. In many cases, membrane processes are more advantageous than traditional technologies. Ultra filtration process has been applied widely in food processing industry for the last 20 years due to its advantages over conventional separation processes such as gentle product treatment, high selectivity, and lower energy consumption. Ultra filtration becomes an essential part in food technology as a tool for separation and concentration. However, membrane fouling compromises the benefits of ultra-filtration as fouling significantly reduces the performance and hence increases the cost of ultra-filtration. Recent advances in this area show the various intensive studies carried out to improve ultra-filtration, focusing on membrane fouling control and cleaning of fouled membranes. Thus, this abstract reviews recent development in ultra-filtration process, focusing on fouling mechanisms of ultra-filtration membranes as well as the latest techniques used to counter membrane fouling.

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