

## Short chemical cleaning of polymeric ultrafiltration membranes fouled by sugarcane juice polysaccharides

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### ABSTRACT

This work examines chemical cleaning of PS and PES ultrafiltration (UF) membranes fouled by sugarcane juice and its polysaccharide component. Six commercial membranes in the MWCO range of 30–100 kD were examined. The juice polysaccharide fraction was used as the model foulant and short cleaning duration (up to 20 min) was investigated. A combination of 2% w/v NaOH and 200 ppm NaOCl resulted in adequate water and juice flux recovery. However, NaOCl exposure affected the membrane properties, leading to flux enhancement, with repeated UF cleaning operations surprisingly resulting in progressively higher product flux. Among the membranes investigated, those with low water flux (< 100 L/m<sup>2</sup>h) fouled less and were more amenable to chemical cleaning.

*Keywords:* Sugarcane juice; Ultrafiltration; Polysaccharides; Fouling; Chemical cleaning

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