measured relatively to the number of polyvalent anions and cations in the sugarcane juice (Chou, 2002). In fact, membrane filtration has been extensively applied to sugar refining, for example, cane juice purification and concentration (Congress, 2010; Luo et al., 2019, 2016), refining of remelted raw sugar as well as clarification and decolorization of molasses (Bernal et al., 2016; Guo et al., 2018; Luo et al., 2018; Qiang et al., 2019). Moreover, membrane filtration is used in clarification and decolorization specifically in the production of juices with high quality, natural taste, and free of additives (Almandoz et al., 2010; Shi et al., 2019). Though the concept of using membrane filtration for sugarcane juice purification has been suggested earlier, there is little experimental work that describes an actual complete pilot-scale process starting from pre-treatment of sugarcane juice to crystallization of refined sugar. Recently, the use of membrane filtration in the food industry is widely accepted due to its energy-efficient, simplicity of operation, and scalability (Abbara, 2015). Membrane processes like microfiltration, ultrafiltration, nanofiltration, ion-exchange or electrodialysis can be used for decolorization and removal of other impurities (Guo et al., 2018; Hamachi et al., 2003). The addition of sodium bicarbonates will provide a source of carbonate anions (CO_3^{2-}) polyvalent anion to precipitate the excess calcium ions out of the sugarcane juice. Hence, a method for the direct production of refined sugar from raw cane juices using UF membranes is presented in this work. The proposed method is a direct process that requires the addition of soda ash for the pre-treatment and a crossflow UF membrane for purification. Results on reduction in turbidity, viscosity as well as the color of sugarcane juice are presented. Furthermore, the UF permeate is directly boiled and crystallized to produce the final product.

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