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Concentration of watermelon juice by reverse osmosis process

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ABSTARCT

Watermelon is much appreciated fruit due its good sensory characteristics such as flavour, aroma and succulence. Watermelon juice was concentrated by reverse osmosis (RO) process. RO was carried out on a pilot plant unit equipped with polyamide composite membranes with an effective permeation area of 0.72 m^2. The concentration tests were carried out in a fed batch mode at 30°C, 60 bar transmembrane pressure and 650 l/h recycle flow rate. The medium permeate flux was 21.7 l/hm^2. The volumetric concentration factor and the soluble solids concentration factor were 4.4 and 3.6, respectivelly. The results showed an increase in the physico-chemical properties of the concentrated juice, mainly, in the lycopene content and in the antioxidant capacity.

Keywords: Lycopene; Antioxidant capacity; Membrane separation process; Fruit juice; Tropical fruit; Carothenoids

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