Concentration of watermelon juice by reverse osmosis process

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**ABSTRACT**

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 m². 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/hm². The volumetric concentration factor and the soluble solids concentration factor were 4.4 and 3.6, respectively. 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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