



چکیده مقاله‌های دکتر میرسعید قاضی

The effect of laser on the efficiency of membrane clarification of pomegranate juice

Abstract

In this study, a laser node with power 1 W and wavelength 532 nm was used to reduce the membrane fouling and evaluate its effect on the efficiency of membrane clarification of pomegranate juice. The results showed that the permeate flux increased in the presence of the laser due to the decrease in total resistance. Also, application of the laser in the pressurized process of 0.5 bar and the flow rate of 10 mL s^{-1} had the best performance on the permeate flux. In addition, the laser alignment is an important parameter that gives the most efficiency in case of the vertical angle and the large surface exposure. This was confirmed by images obtained by scanning electron microscope. Evaluation of physicochemical properties of the pomegranate juice showed that they changed after membrane clarification; however, the rate of changes in the most parameters (except pH, total soluble solids content and color parameters) in two processes with and without the laser was same.

برای مطالعه بیشتر وارد لینک زیر شود.

<https://pubmed.ncbi.nlm.nih.gov/33897007/>





Investigation of antimicrobial activity of orange and pomegranate peels extracts and their use as a natural preservative in a functional beverage

Abstract

The aim of this study was to investigate the effect of orange peel extract (OPE) and pomegranate peel extract (PPE) as natural preservatives on the characteristics of a functional drink (FB). These FBs were produced using fruit concentrates and agricultural waste (melon seed and tea stalk caffeine) as well as malt extract and powder. First, OPE's and PPE's antimicrobial activity (AMA) was tested *in vitro* on two pathogenic bacteria (*Staphylococcus aureus* and *Escherichia coli*). Then their effects were investigated on the FBs' quality. Although both extracts showed significant AMA against bacteria, it was higher in OPE than PPE sample ($p < 0.05$). The results show that the minimum inhibitory concentration (MIC) for PPE samples was 1.5 and 2.5 times that of OPE against Gram-positive and Gram-negative bacteria, respectively. Increasing the levels of extracts in beverages, especially OPE, can reduce the pH during 27-day in refrigeration storage and also significantly reduce the growth of total bacterial, molds, and yeasts. Adding the PPE reduced sensory scores, while OPE had no adverse effect on sensory characteristics. Samples containing PPE showed approximately 25% higher antioxidant activity and 45% higher total phenolic content (mg Gallic acid/g extract) than OPE samples. The sample containing 15% OPE was introduced as the best natural preservative to improve the functional beverage's quality and shelf life.

برای مطالعه بیشتر وارد لینک زیر شود.

<https://link.springer.com/article/10.1007/s11694-021-01141-z>

