

Membrane Processing of Sugarcane Juice

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ABSTRACT

Sugarcane juice is commonly used as a delicious drink in both urban and rural areas. Sugarcane juice is spoiled quickly due to the presence of simple sugars. Preservation of sugarcane juice was examined to reduce the spoilage and to increase the shelf life by membrane processing. A study was carried out to preserve sugarcane juice by membrane processing and compared with the untreated juice. The results revealed that good quality sugarcane juice of variety CO380 with satisfactory storage stability at refrigeration could be prepared by microfiltration and pasteurization of sugarcane juice with addition of flocculant. The permeate flux of microfiltered and pasteurized sugarcane juice with addition of flocculant decreased from 9.14 to 6.53 L/h m². The TSS and pH value of sugarcane juice decreased during storage. The highest pH of 4.65 was recorded for microfiltered and pasteurized juice with addition of flocculant (PAC) on 20th day of storage. The total sugars generally decreased during storage of sugarcane juice in the study. Microfiltered and pasteurized juice with addition of PAC showed reduction of TSS from 17.5 to 14.1%. The reducing sugars increased during storage. The increase of reducing sugars for microfiltered and pasteurized juice was from 1.42 to 2.00%. The turbidity of the sugarcane juice increased during storage as indicated by decrease in the transmittance values. Turbidity was observed to be low from 78.4 to 60 % for microfiltered and pasteurized juice with addition of PAC. The colour values generally decreased in all the treatments. In microbial analysis, Yeast, Mould and total plate count were observed to be less in microfiltered and pasteurised with and without addition of PAC treatments. It can be concluded that membrane processing of sugarcane juice is one of the alternate methods in combination with thermal processing for producing quality juice.

Key words: *Membrane processing, Microfiltration, Poly Aluminium Chloride, Permeate flux, Ultrafiltration*