

## Abstract

Costa Rica is a large producer of tropical fruits. At the present time, it is the major exporter worldwide of fresh pineapple. This success is due, in part, to one variety of pineapple-the MD-2<sup>TM</sup> or Golden<sup>TM</sup> - which was introduced in the country in 1995. Also, the use of the rejected fruit from the agriculture export business is becoming a new alternative for the Costa Rican food industry. There is a growing demand from the consumers for natural products-products without additives -as well as an increasing trend towards clarified exotic fruit juice consumption. These facts provide a great opportunity for the application of membrane technology. In this study, we *present* the use of cross-Row microfiltration to obtain clarified pineapple (MD-2<sup>TM</sup>) juice. The assays were carried out at a semi-industrial scale, with a pilot equipment at 30 °C using a tubular alumina membrane with an average pore diameter of 0.2µm. All samples were enzymatically pre-treated. The processes were ran at 200 kPa (transmembrane pressure) and the parameters analyzed were acidity, pH, turbidity, soluble solids, % ascorbic acid and % total carotenoids. Finally, the effect of clarification on the profile of volatile components was analyzed by Gas Chromatography coupled to Mass Spectrometry (GC-MS). The Golden<sup>TM</sup> variety of pineapple presents higher sugar and vitamin C contents, as well as a lower acidity when compared to other varieties. The cross-flow microfiltration allowed to maintain the physico-chemical characteristics in the clarified pineapple juice, except for carotenoids, due to the fact that these pigments were retained by the ceramic membrane. The permeate fluxes (approximately 75 L. h<sup>-1</sup>. m<sup>-2</sup>) and the process' yield when considering the clarified juice obtained (85%), are compatible with a possible industrial application.